إقـــــرار

أنا الموقع أدناه مقدم الرسالة التي تحمل العنوان:

Critical Success Factors for ERP Implementation in UNRWA as a Case Study

عناصر النجاح الرئيسية في تطبيق نظام تخطيط الموارد المؤسسية في الأونروا كحالة عملية

أقر بأن ما اشتملت عليه هذه الرسالة إنما هو نتاج جهدي الخاص، باستثناء ما تمت الإشارة إليه حيثما ورد، وإن هذه الرسالة ككل أو أي جزء منها لم يقدم من قبل لنيل درجة أو لقب علمي أو بحثي لدى أي مؤسسة تعليمية أو بحثية أخرى.

DECLARATION

The work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification

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بسم الله الرحمن الرحيم

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نتيجة الحكم على أطروحة ماجستير

بناءً على موافقة شئون البحث العلمي والدراسات العليا بالجامعة الإسلامية بغزة على تشكيل لجنة الحكم على أطروحة الباحث/ **أحمد عبد الرازق أحمد الكرد** لنيل درجة الماجستير في **كلية *التجارة*/ قسم إدارة الأعمال** وموضوعها:

عناصر النجاح الرئيسية في تطبيق نظام تخطيط الموارد المؤسسية في الأنروا

Critical Success Factors for ERP implementation in UNRWA as a Case Study

وبعد المناقشة التي تمت اليوم السبت 27 ربيع الآخر 1437 هـ، الموافق 2016/02/06م الساعة التاسعة والنصف صباحاً، اجتمعت لجنة الحكم على الأطروحة والمكونة من:

د. خالد عبد دهليز	مشرفاً و رئيساً	.....
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وبعد المداولة أوصت اللجنة بمنح الباحث درجة الماجستير في **كلية *التجارة*/ قسم إدارة الأعمال**.

واللجنة إذ تمنحه هذه الدرجة فإنها توصيه بتقوى الله ولزوم طاعته وأن يسخر علمه في خدمة دينه ووطنه.

والله ولي التوفيق ،،،

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Dedication

To the best parents in the world, "Thank you" is a small phrase that will never describe my love and appreciation for all what you have done.

To my beloved wife, I will never forget your care, love, encouragement, and support through the preparation of my thesis. I am blessed by Allah to have you in my life.

To my hope and smile in my life, my children: Ameer and Jodie, I will never be able to express my feelings for having you in my life.

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There are so many people I have to acknowledge them who helped me in this study and in many stages in my life, I ask Allah to grant them the Paradise.

Abstract

This study aims to measure the success of Enterprise Resource Planning (ERP) implementation in UNRWA, which is one of the biggest United Nations organizations in MENA region.

The study focused on examining the relationship between the critical success factors and the success of ERP implementation at URNWA. Five critical success factors were identified and examined by the survey. They are (1) top management support, (2) project team competence, (3) user training and education, (4) interdepartmental communication, (5) data analysis and conversion. Understanding the importance of these factors will help managers to make a good planning for ERP implementation. It is suggested to set high priority to these critical success factors, which can help managers to have a better control of the activities in the process of ERP implementation. Hopefully, it will increase the chance to implement ERP successfully.

The population of the study was 200 URNWA staff members who were engaged with ERP implementation stages. Those staff members are distributed among five regions in which UNRWA operates. Jordan, Syria, Lebanon, West bank and Gaza strip. The researcher reaches them physically or through e-mails. The response percentage was 173 (86.5%) from population from different field's offices and different seniority levels.

The study found that CSF has significant relationship with successful ERP implementation at UNRWA with the percentage of 77.85%. That indicates UNRWA has implemented the ERP system successfully and smoothly. The study also shows that three out of the five CSF are the most important to success of the ERP implementation at UNRWA: data analysis and conversion, project team competency and interdepartmental communication. Furthermore, practical implications to UNRWA and future studies were highlighted.

ملخص الدراسة

تهدف هذه الدراسة إلى قياس مدى نجاح تطبيق نظام تخطيط وإدارة الموارد في وكالة الغوث وتشغيل اللاجئين الفلسطينيين (الأونروا) والتي تعتبر واحدة من أكبر منظمات الأمم المتحدة العالمة في منطقة الشرق الأوسط وشمال أفريقيا.

الدراسة تركز على دراسة العلاقة بين عناصر النجاح الرئيسية ونجاح تطبيق نظام التخطيط وإدارة الموارد في الأونروا. تتناول هذه الدراسة خمسة عناصر من عناصر النجاح الرئيسية وهم: (1) دعم الإدارة العليا، (2) مهارات فريق العمل، (3) تدريب الموظفين وتعليمهم مهارات استخدام النظام، (4) التواصل بين الدوائر والأقسام المختلفة وأخيرا (5) تحليل البيانات وتحويلها بالشكل المناسب. إن الفهم العميق لهذه العناصر وأهميتها يساهم بشكل كبير في مساعدة المدراء وصانعي القرار في التخطيط الجيد لتطبيق النظام بشكل صحيح. كما وانه يقترح أن يتم ترتيب هذه العناصر حسب الأولوية لهذه العناصر النجاح الأساسية، والتي سوف تساهم في مساعدة المدراء في التحكم بشكل أفضل في كل الفعاليات والعمليات المستخدمة في تطبيق نظام تخطيط الموارد. وهذا يزيد بشكل فاعل احتماليات النجاح في تطبيق النظام.

تكونت عينة الدراسة 200 موظف من الأونروا وهم الذين كانوا يعملون في تطبيق نظام التخطيط وإدارة الموارد بمراحله المختلفة. هؤلاء الموظفون مقسمون في خمس مناطق مختلفة من مناطق عمل الأونروا: الأردن، لبنان، سوريا، الضفة الغربية وقطاع غزة. وقد استطاع الباحث من الوصول للعينة إما بالسفر إلى هذه المناطق أو من خلال البريد الإلكتروني لجمع الاستبيانات. وقد كانت نسبة الاستجابة 86.5% من مختلف المناطق ومختلف المستويات الوظيفية.

ولقد توصلت الدراسة إلى وجود علاقة قوية بين كل من عناصر النجاح الأساسية والتطبيق الناجح لنظام التخطيط وإدارة الموارد بنسبة 77.85%. وهذا يوضح بان وكالة الغوث وتشغيل اللاجئين (الأونروا) قد نجحت في تطبيق نظام إدارة وتخطيط الموارد بشكل مناسب وبسلاسة. كما أشارت الدراسة إلى اهم العناصر الرئيسية المؤثرة في نجاح تطبيق النظام وهي: تحليل البيانات وتحويلها، مهارات فريق العمل والتواصل بين الإدارات. إضافة إلى بعض التوصيات الخاصة بالأونروا والدراسات المستقبلية.

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List of Abbreviations

Abbreviation	Meaning
UNRWA	United Nation Relief and Work Agency
ERP	Enterprise Resource Planning
CSF	Critical Success Factors
OD	Organization Development
MRP	Materials Requirements Planning
MRPII	Management Resource Planning
IS	Information Systems
HQ	Head Quarter
TMS	Top Management Support
MENA	Middle East and North Africa
MIS	Management Information Systems
EIS	Enterprise Information System
ICT	Information and Communication Technology

Chapter One: Study Framework

2.1 Introduction:

Enterprise Resource Planning (ERP) is an integrated set of software modules which are linked to a common database to handle basic corporate functions such as planning, manufacturing, sales, marketing, accounting, distribution, human resource and inventory. When ERP is implemented successfully, it can reduce operating costs, increase productivity, and improve customer services. However, ERP fails to deliver the promised benefits in many companies due to the poor implementation planning. A successful ERP implementation requires a careful thinking, good planning from a strategic perspective.

The development of ERP software packages during the past decade has turned the enterprise software market into one of the industry's hottest and most volatile segments (Davenport, 1998).

ERP implementations are complex undertakings. Enterprise Resource Planning (ERP) packages have transformed the way organizations go about the process of providing information systems. Instead of crafting each new information system locally, organizations are able to install well-integrated, internationally sourced packages that seek to provide best practice from IT systems worldwide (Smyth, 2001). ERP systems help to manage companywide business processes, using a common database and shared management reporting tools. ERP systems support the efficient operation of business processes by integrating business activities, including sales, marketing, manufacturing, accounting, and staffing (Brady, el. al., 2001).

ERP implementations are usually large, complex projects, involving large groups of people and other resources, working together under considerable time pressure and facing

many unforeseen developments. Not surprisingly, many of these implementations turn out to be less successful than originally intended (Davenport, 1998; Buckhout et al, 1999).

Watson and Schneider, 1999 describes an ERP system as a term for an integrated enterprise computing system (Watson and Schneider, 1999). In fact, the literature has often described ERP systems as a supply of a number of integrated applications, usually consisting of manufacturing, logistics, distribution, accounting, marketing, finance, and human resources (Binggi, el. al, 1999; Gable, 1998). However, there are a number of challenges that are associated with the implementation of ERP systems.

First ERP systems are expensive and consequently require complex decision-making processes to purchase them. Second, ERP systems usually effect the whole organization. As such, requires a combination of technical and human expertise to select, develop and implement successfully (Ragowsky and Romm Livermore, 2002). Third, there have been many reported failures of ERP implementations. Examples include companies such as FoxMeyer Drugs, Applied Materials, Hershey, Mobil Europe, and Dow Chemicals.

The business environment is changing dramatically and in order to stay competitive in the market, organizations must improve their business practices and procedures. Organizations within all departments and functions upgrade their capability to generate and communicate accurate and timely information. The organizations, which have successfully implemented the ERP systems, are reaping the benefits of having integrating working environment, standardized process and operational benefits to the organization.

Not all ERP implementations have been successful. There have been horror stories of ERP implementation and improper implementation has taken the companies to bankruptcy and in several cases organizations decided to abandon the ERP implementation projects. The questions many academicians and researchers have asked what are the reasons of success and failure of ERP implementations. Some of the reasons cited in the literature are lack of support of top management support, resistance from employees, poor

selection of ERP systems and vendor etc. Majority of these studies have used case studies to conclude their findings and very few have used the empirical to study the ERP.

This introduces the question of whether ERP systems are viable (Ranganathan and Samarah, 2001; Chen 2001). For the reasons that ERP systems touch so many aspects of a company's internal and external operations, their successful deployment and use are critical to organizational performance and survival.

Over the past few years, a considerable amount of research has been conducted into critical success factors, or CSFs, for ERP implementations (eg Holland & Light, 1999; Sumner, 1999; Willcocks & Sykes, 2000) and IT implementations in general (Reel, 1999; Marble, 2000). Such factors typically include top management support, sound planning, end user training, vendor relations, project champions, interdepartmental collaboration and communication and the like. Now even have available a ranked version of such a list, based upon a survey among managers of organizations that have recently gone through an ERP implementation process (Somers & Nelson, 2001). However, at present it is not yet clear how these CSFs interrelate. It seems unlikely that they all work in isolation, without one CSF also affecting another and vice versa. At present, what have are 'laundry lists' (Richmond, 1993) of relevant CSFs. However, for the time being, have little theory on how these CSFs affect each other.

The objective from this study is to describe the most critical success factors that are successfully implementing ERP software project in UNRWA, which is of United Nations organization that working in five operation areas: Jordan, Syria, Lebanon, West Bank and Gaza Strip with more than 22,000 staff members. UNRWA provides assistance, protection and advocacy for some 4.7 million registered Palestinian refugees. UNRWA structure consists of several departments and programs such as Education, Health, Relief and Social Services, Special Environment Health, emergency and job creation programs in addition to other Support Departments that serve Palestine refugees.

Since 2001, UNRWA has been using an information management system called Ramco. Since UNRWA's 2006 Organization Development (OD) Plan, both internal and external experts have highlighted the shortcomings of the Ramco system as a management tool and have urged the adoption of a modern ERP system, similar to that which many UN agencies have already implemented. Since the OD, the weaknesses of the system associated with internal controls and the ability to support management decision-making have become increasingly apparent, and program directors are demanding better tools to manage their portfolios of activities. This Agency need, coupled with the obsolescence of the system (support ends for the database in April 2013 and the Ramco software at the end of 2014), have provided the impetus to drive the ERP modernization project forward.

UNRWA top management decided to implement ERP system (SAP R/3) in 2014 in its five operations areas. URNWA ERP system includes four streams; Human Resource, Finance, Supply Chain Management and Public Sector Management.

2.2 Problem Statement:

ERP systems are considered as one of large-scale enterprise applications or solutions and hence require huge budget, special expertise, infrastructure, and advance level of running environment.

UNRWA is non-profit UN organization, which is working in five operation areas: Jordan, Lebanon, Syria, West Bank and Gaza Strip. As ERP is normally implemented in many of profit organization, this implementation is considered as unique one to adapt ERP to fit non-profit framework. Meanwhile, UNRWA has a legacy system called RAMCO, which could be considered as mini ERP system. According to pervious points, ERP implementation at UNRWA is a challenging mission.

UNRWA required increasing its staff member's capacities to match the requirement of running ERP. Change of business process, re-engineering of business process…etc. All of those participated in success of ERP implementation. Furthermore, main of critical success factors participated in the success of ERP implementation at URNWA.

This study aims to measure the extent of ERP implementation success at URNWA, and the relationship between the critical success factors and the success ERP implementation at UNRWA.

2.3 Research Questions:

This study is going to answer the following questions:

- Is there a significant relationship between Critical Success Factors and ERP system implementation in UNRWA?
- Is "top management support" an important factor of implementing successfully the ERP system?
- Does the "competence of the Project team" play a significant role to the success of ERP implementation?
- Is "user training and educations" important to success the ERP implementation?
- At what extend is "Interdepartmental communication" important to the success of ERP implementation?
- At what extend is "Data analysis and conversion" important to the success of ERP implementation?
- Are there statistical significant differences among participants due to personal characteristics (Age, Experience, Qualifications, Occupation…etc.)?

2.4 Study Variables and Conceptual Framework:

The researcher in this study is going to focus on the following six variables:

Dependent variable:

- Successfully implementation of ERP in UNRWA.

Independent variables:

- Top management support.
- Project team competence.
- User training and education.
- Interdepartmental communication.
- Data analysis and conversion.

Conceptual Framework:

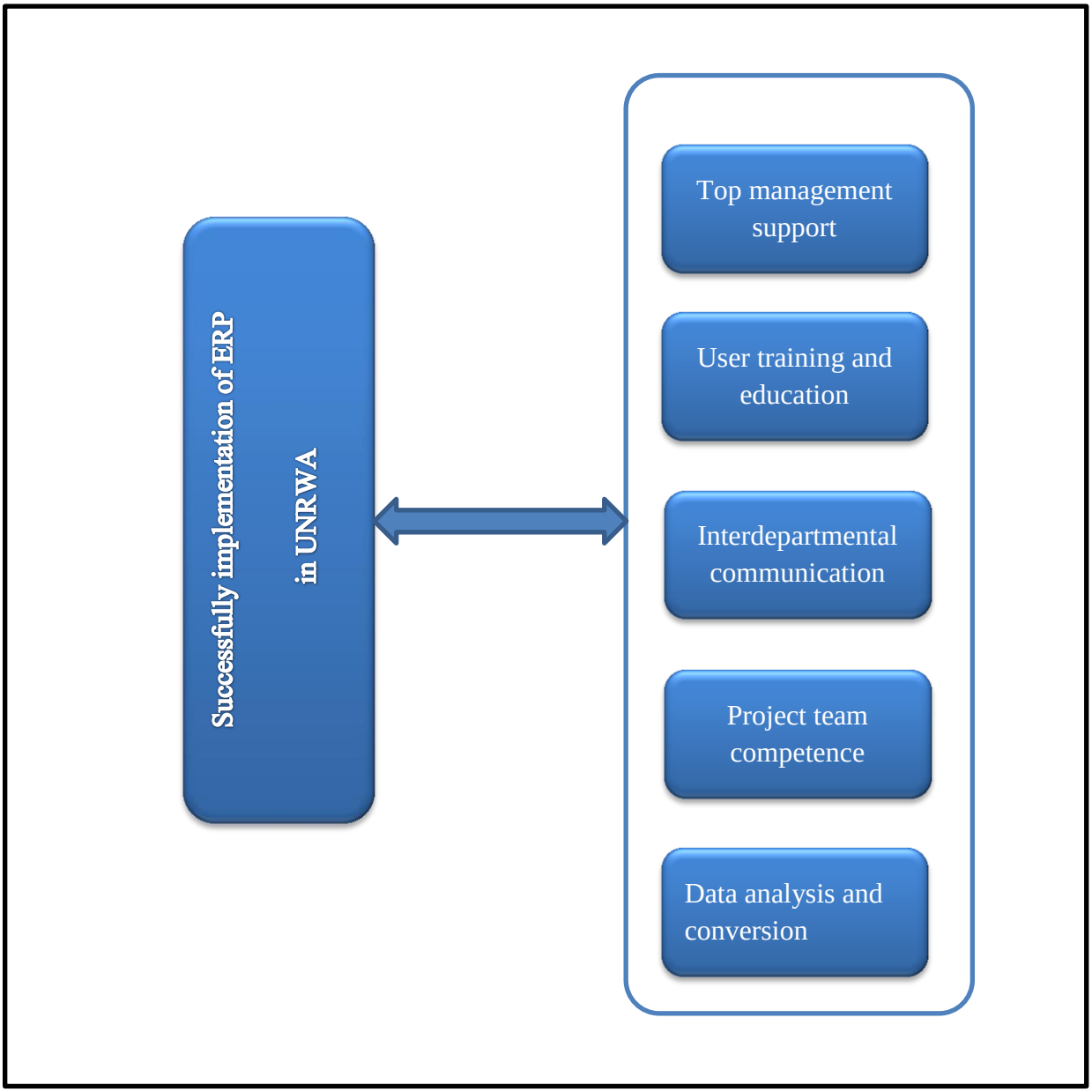

Figure 2-1: Conceptual Map

2.5 Study Objectives:

The study aimed to achieving the following objectives:

- Assess the success of ERP implementation in UNRWA as it implemented the ERP system by the beginning of 2015.
- Assess five of the critical success factors of ERP system implementation in organizations.
- Examine the effect of critical success factors on ERP implementation success.
- Increase the awareness about the factors that should be considered before and during the ERP implementation to guarantee the success one.
- Offer recommendations can help in enhancing the implementation process.

2.6 Study Hypothesis:

Main hypothesis (1): critical success factors affect significantly and positively ERP system implementation in UNRWA.

Sub-hypothesis:

a) Top management support affects significantly and positively the success of ERP implementation.
b) The competence of the Project team affects significantly and positively the success of ERP implementation.
c) User training and educations affects significantly and positively the success of ERP implementation.

d) Interdepartmental communication affects significantly and positively the success of ERP implementation.

e) Data analysis and conversion affects significantly and positively the success of ERP implementation.

Main hypothesis (2): There are statistical significant differences in response of research sample due to personal characteristics.

Sub-hypothesis:

a) There are no significant differences among participants response due to gender.

b) There are no significant differences among participants response due to age.

c) There are no significant differences among participants response due to qualifications.

d) There are no significant differences among participants response due to occupation type.

e) There are no significant differences among participants response due to occupation.

f) There are no significant differences among participants response due to experience.

g) There are no significant differences among participants response due to UNRWA Field office.

2.7 Definition of Important Terms:

ERP: Enterprise Resource Planning (ERP) is an integrated set of software modules, which are linked to a common database to handle basic corporate functions such as planning, manufacturing, sales, marketing, accounting, distribution, human resource and inventory.

CSF: There are many factors that have to be considered in order to perform successful ERP implementation. Based on that, many authors highlighted the Critical Success Factors (CSF) of any ERP system implementation projects (Tarhini, el. al, 2015).

Top Management Support: The degree of top manager support before and after ERP implementation.

User training and education: Training about ERP system use for the staff members. This includes the education according to the new business processes in ERP implementation (Kim, el. al, 2015).

Interdepartmental communication: Communication and cooperation should be of two kinds: inwards the project team and outwards to the whole organization. It is necessary to create an understanding and an approval of the implementation (Stephan A. Kronbichler, 2009).

The competence of the Project team: The Company own staff having necessary skills, knowledge and experience regarding implementation project. Availability and competence of project team external participants – implementation consultants, developers, software suppliers' representatives (Pavlovna, Pecherskaya Evelina, et al. 2015).

Data analysis and conversion: A fundamental requirement for the effectiveness of ERP systems is the availability and timeliness of accurate data. Data problems can cause serious implementation delays, and as such, the management of data entering the ERP system represents a critical issue throughout the implementation process (Toni M. Somers & Klara Nelson, 2001).

2.8 Importance of the Study:

This study aims to provide findings and conclusions to help any organization going to implement ERP system about the factors and elements that should be considered before and during the implementation stages to each the success level of implementation.

Most of literature reviews conducted that there are 22 critical success factors, which affect the ERP implementation success. This study focus on five of critical success factors: (1) Top Management Support, (2) Project team competence, (3) User training and education, (4) Interdepartmental communication, (5) Data analysis and conversion. The researcher will take UNRWA as case study to measure these CSF and their impacts on the level of success of ERP system Implementations.

The results of this study are useful for all UN agencies that are looking to implement ERP as their main software system. They have to focus on the critical success factors, which lead to success implement ERP system at UNRWA.

2.9 Study limitation:

The main limitations of the current study can be summarized into the following points:

- The research was based on one case organization, so the results cannot be generalized.
- The researcher has to collect data from five operation areas.
- The availability of participants for interviews as they are extremely busy.
- The Syria area cannot be physically reached because of the security situation. Therefore, the data should be collected in an electronic way, which is not that easy.

2.10 Chapter Summary and Thesis Organization:

In this chapter, the researcher addressed the framework of the study through previewing a general introduction about ERP implementation and the critical success factors of ERP implementation.

Then, the researcher addressed the main components of his research by previewing the problem statements, study questions, study variables, conceptual map, study objectives, study hypothesis, importance of the study and finally he addressed the study limitations.

Chapter two focuses on reviewing extant literature and summarizing relevant empirical research, the third one presents the study methodology, the fourth shows the study results and discussion and the last chapter presents implications and recommendations.

Chapter Two: Theoretical Framework

3.1 Introduction

ERP implementation is information systems usage in organizations to help integrating all the functions to enhance the organizations performance; ERP planning is not only a software installation problem, but also, a decision-oriented managerial issue. The research need to explore and understand principles in areas of decision sciences and organizational sciences to understand ERP implementation. Therefore, in this chapter, the researcher reviewed relevant scholarly articles, books and other sources (dissertations and conference proceedings) as well as business newsletters related to the topic of ERP implementation, ERP research models, constructs and measurements, decision rules in decision making and methodologies for planning for Management Information Systems (MIS).

3.2 ERP Overview

ERP stands for Enterprise Resource Planning. Other common names used are: Enterprise Information Systems (EIS), Enterprise Wide Systems (EWS) or Enterprise Systems (ES). Enterprise systems are "commercial software packages that enable the integration of transaction oriented data and business process throughout an organization" (Markus and Tanis, 2000). Typically, ERP systems are software packages composed of several modules, such as human resources, sales, finance and production, providing cross-organization integration of transaction based data throughout embedded business processes. These software packages can be customized to the specific needs of each organization up to certain limits (Esteves and Pastor 2001). As Klaus et al. (2000) state, in the IS literature we observe some dissent among academics on the nature and definition of ERP. Some authors

(Davenport 2000, Laudon and Laudon 2000) advise not to use the term ERP and suggest alternatives; others (e.g. Pawlowski. 1999) state that ERP is not a term referring to a distinct object but rather a category ("umbrella term"), signifying a range of similar products. Yet others explain the ERP concept in terms of its historical evolution, relating it with manufacturing and supply chain management. It is unlikely that a broadly agreed upon definition can be achieved.

ERP systems are the significant systems that help companies to achieve their business objectives and to increase the productivity and operational efficiency of companies for achieving process improvement and global competitiveness (Gartner, 2002). However, some difficulties and problems affect the implementation of ERP systems.

Enterprise resource planning (ERP) systems are an integrated set of programs that provides support for core business processes, such as production, input and output logistics, finance and accounting, sales and marketing, and human resources. An ERP system helps different parts of an organization to share data and information to reduce costs and to improve management of business processes (Wier, el. al, 2007) argued that ERP systems aim to integrate business processes and ICT into a synchronized suite of procedures, applications and metrics, which transcends firms' boundaries. Even though ERP systems were initially thought to run on large-scale enterprises, SMEs are increasingly motivated to introduce ERP implementations (Aarabi, el. al, 2012).

As an IT solution, ERP system, if implemented fully across an entire enterprise, connects various components of the enterprise through a logical transmission and sharing of data (Balls, el. al, 2000). When customers and suppliers request information that have been fully integrated throughout the value chain or when executives require integrated strategies and tactics in areas such as manufacturing, inventory, procurement and accounting, ERP systems collect the data for analysis and transform the data into useful information that companies can use to support business decision-making. They allow companies to focus on

core and truly value-added activities (Nah, 2002). These activities cover accounting and financial management, human resources management, manufacturing and logistics, sales and marketing, and customer relationship management.

In the literature there is a consensus that ERP are indeed expected to support the enterprise's operations and provide its various levels of management with information in a highly integrated manner. When integrated beyond the confines of the individual enterprise with the systems of its business partners, such extended ERP systems engender a vision of a network of value-creating processes cutting across organizational boundaries. ERP can form a fundamental platform for the informational infrastructure of an enterprise. Based on literature review, Uwizeyemungu and Raymond (2004) have attempted to identify the characteristics generally attributed to ERP systems.

Nowadays, new terms have been proposed, such as ERP II, and Enterprise Resource Management (ERM). The term ERP II was created by Gartner Group and it is defined as "a business strategy and a set of industry-domain-specific applications that build customer and shareholder value by enabling and optimizing enterprise and inter-enterprise, collaborative operational and financial processes" (Bond et al. 2000).

3.2.1 ERP Historical Account

The roots of ERP systems can be traced back to the Material Requirements Planning systems (MRP) in the 70's. MRP minimizes the production of stock parts and performs a function for managing and supplying materials as per order requests at a suitable time and place. To do this, product component information, standard process chart, standard production scheme and production records are needed. MRP has problems as it dismisses the limitations of the demand for manufacturing resources and does not reflect changes in real time (Jin, el. al, 2015). These systems evolved to the Manufacturing Resource Planning systems (MRPII).

MRP II Was developed as an intelligent production management tool by adopting production activity analyzing tools, such as, scheduling algorithms and simulation. In the 1990s, with the growth of ICT, ERP was added as a function that was not provided by MRP II. It was recognized that it is important to consider both top-down supply systems and associated departments during decision-making processes. ERP includes not only production and production management, but also business management support and other areas of management, such as design, finance, accounting, sales and human resources (Jin, el. al, 2015).

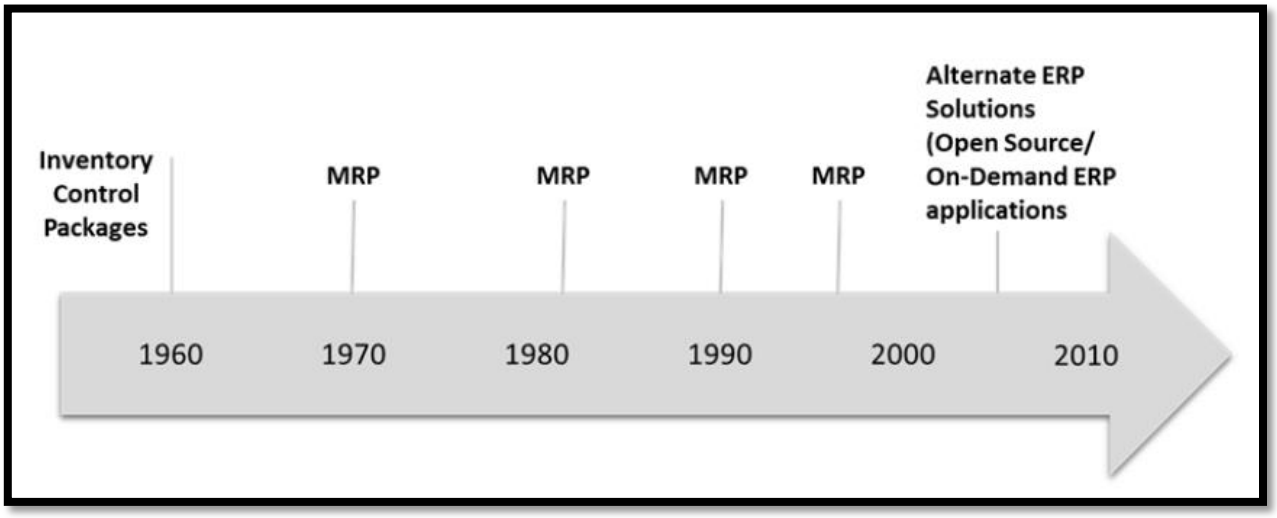

Figure 3-1: Evolution of ERP

Source: Jin, Jung and Young, 2015

Shankarnarayanan (1999) identifies four phases in the ERP systems history as mentioned in table (2-1).

Table 3-1: The phases in the ERP systems history

Years	Phase
1960's	Most of the software packages (then usually bespoke developed) were designed to handle inventory based on traditional inventory concepts.
1970's	The focus shifted to MRP systems which translated the master schedule built for the end items into time-phased net requirements for the sub-assemblies, components and raw materials planning and procurement
1980's	The concept of MRP-II systems evolved, as an extension of MRP to shop floor and distribution management activities.
1990's	MRP-II was further extended to cover areas like engineering, finance, human resources, project management, i.e. the almost complete gamut of activities within any business enterprise. Hence, the term ERP (enterprise resource planning) was coined.

Source: Shankarnarayanan (1999)

Nowadays, data and process modeling techniques are developed into the integration information systems, which consist of data, function, organization, output and process views. ERP is widely used for this integration to support enterprise modeling of data and processes. Their functions contain financials (accounts receivable and payable), human resources (personnel planning), operations and logistics (inventory management & shipping), and sales and marketing (order management & sales management). Gradually, ERP vendors add more modules and functions as "add-ons" to the core modules giving birth to the extended ERPs. These ERP extensions include advanced planning and scheduling (APS), e-business solutions such as customer relationship management (CRM) and supply chain management (SCM) (Hossain, el. al, 2002).

Hoy (1996) mentions that ERP systems follow the trend of its predecessors: MRP-II systems that consisted in a change from a materials emphasis to a holistic view of the manufacturing environment. Additionally, ERP systems add technology aspects to the overall system requirements. These include features such as a client/server-distributed architecture, and Object- Oriented Programming (OOP) development practices. Both of these factors help with the scalability task. This scalability and their evolution towards including supply chain and customer relationship management operations provide the extension into customer and supplier environments.

3.2.2 ERP Vendors:

There are over 1000 ERP vendors and solutions to from which to choose (Anderegg 2000). "However, most of them are very small and escape the detection of companies looking for new ERP systems" (Anderegg, 2000). As Oliver and Oliver (2002) mention the extent to which ERP systems are shaping the IT industry are captured in the following comparison: "Twelve years ago, IT people identified their organizations as IBM or Digital shops, says Bruce Richardson, VP of research at AMR research inc. They are now more likely to be SAP or Peoplesoft" (Sweat 1998).

ERP solutions are such a specialized field and the necessity of domain expertise is so critical that solutions and their providers can be easily broken down by sector. Of course, many of the players are common to all domains – SAP, Oracle and Microsoft being the main examples. But variations tend to creep into the Tier II and Tier III end of the market (CompareBusinessProducts.com). The following major sectors of Industry:

- Manufacturing & distribution industry
- Transport, communication, energy, sanitary services
- Service sector
- Retail sector

The biggest worldwide ERP software vendors:

- **SAP:** Founded in 1972 by five former IBM engineers, SAP is the undisputed market leader in the ERP space and is the third largest software company in the world. Its current version has more than 30,000 relational database tables that allow it to handle extremely complex business situations. While it is an undisputed number one in the Tier I ERP space, SAP has been criticized at times for being too complex and difficult to handle. If you are a small or medium company, this

solution is probably more than what your company needs or could potentially handle. Its headquarter is located in Walldorf, Germany (SAP, 2015).

- **Oracle:** While Oracle was formerly best known for its relational database, it was for many years the database of choice for SAP ERP applications. This cooperative situation had existed since the late 70's. However, sometime around 2004, Oracle began to look at building its own ERP solutions and at the same time SAP began to offer its ERP solutions on the Microsoft SQL Server database platform as well. The first Oracle ERP product was Oracle Financials which was released into the market as early as in 1989. However, post 2004, Oracle began to become a serious player in the ERP market and is now a well-established number 2 in the Tier I market (Oracle, 2015). It's worth mentioned that PeopleSoft which was one of the important ERP vendors existed as an independent corporation until its acquisition by Oracle Corporation in 2005. The PeopleSoft name and product line are now marketed by Oracle.

- **Microsoft:** Microsoft Dynamics is mostly focused on Tier II clients in the ERP space. It provides solutions in a number of different business domains including in the Customer Relationship Management domain. A great advantage of Microsoft products is its great ease of use. This holds for its ERP products as well (Microsoft, 2015).

- **Sage:** Sage Line 500 and Sage 1000 are the cornerstone ERP solutions for thousands of UK businesses. Developed for the UK mid-market from day one, the Sage Line 500 and Sage 1000 Suites offer customers a broad range of capabilities including CRM, HR, Payroll and Business Intelligence (Compare Business Products).

- **Infor:** Infor Global Solutions is a privately held company that has grown rapidly in the Tier II vendor space since 2002. The company has taken an aggressive

acquisition route to growth and continues to follow this path even now with its acquisition of ENXSUITE in 2011. Infor has a global presence to match the footprint of the top 3 and has clients in 194 countries (Compare Business Products).

The ERP market share reached a size of 25.4 Billion USD in 2013 with growth rate 3.8%. This is strong indicator of success of ERP system. Figure (2-2) presents the ERP market share.

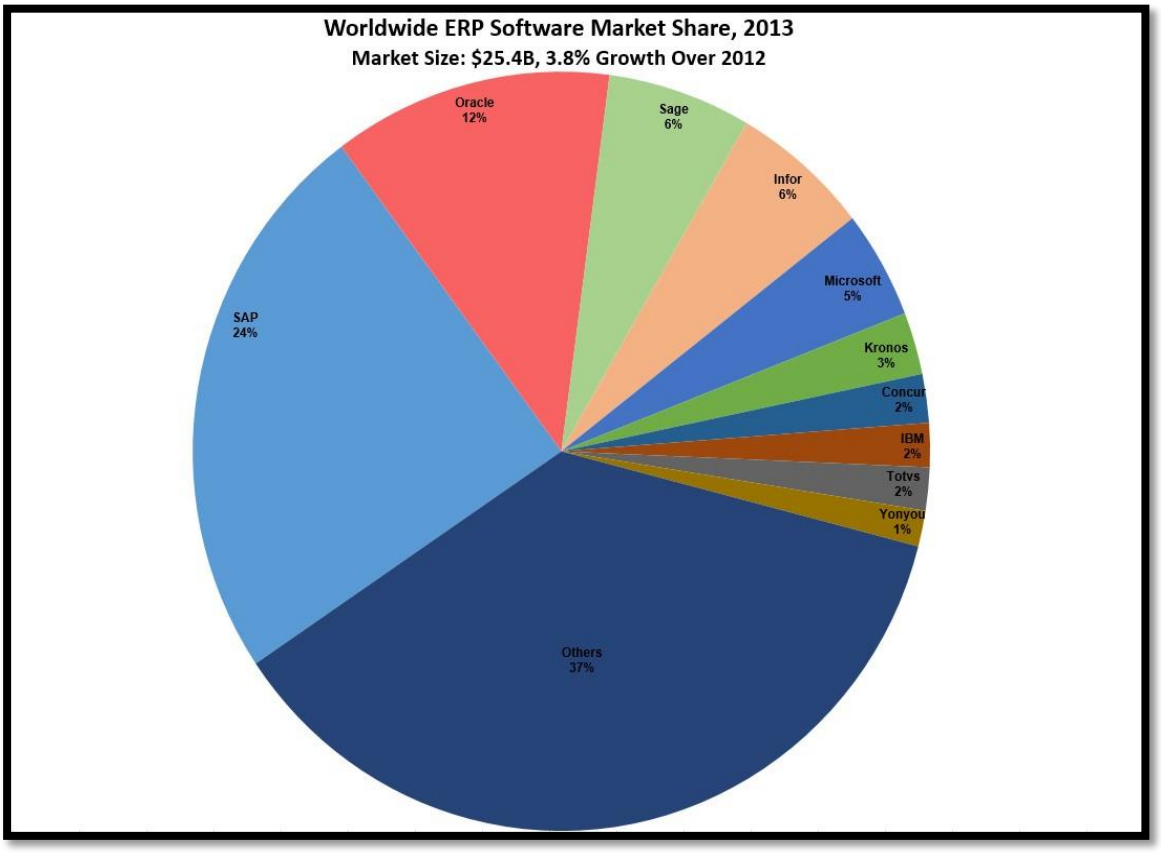

Figure 3-2: Worldwide ERP Software Market Share 2013

Source: http://www.forbes.com/

3.2.3 Cloud ERP systems:

Within the traditional ERP a distinction can be made between two different solutions: - hosted and on-premise ERP. On-premise ERP solutions are usually acquired via a license model. The software is loaded onto servers and computers in-house. The enterprise also controls the infrastructure and platforms. Furthermore, the enterprise handles all maintenance and absorbs the costs of maintaining the servers and the space they require, as well as disaster recovery (WAC Consulting Group 2012). This means that the enterprise itself has to maintain the servers and the required space. A hosted ERP is defined as a service offered to an individual or an organization by a provider that hosts the physical servers running that service somewhere else. The service is most of the time offered through a direct network connection that may or may not run via internet (Fripp, 2011).

Nowadays the trends of shifting from on-premise ERP to hosted ERP solutions and so on to cloud based ERP can clearly be seen (Lin el. al, 2011). Traditional ERP vendors are responding in various ways to this new development, with some offering hosted versions of their ERP applications as an alternative. While hosted ERP solutions deliver some of the same benefits, enterprises need to appreciate the significant difference which is more explained in the results section. Cloud and hosted ERP have overlapping benefits, but prospective customers should carefully consider their options to ensure the solution they choose deliver the business value they expect (Scavo et al., 2012).

Cloud ERP solutions are delivered via the Software as a Service model. It is important to note that some ERP solutions that are marketed as ‘cloud based’ are in fact hosted ERP solutions (Scavo et al. 2012). True cloud ERP systems are those that implement the characteristics of clouds in the previous category. These systems are typically accessed via a common browser over an Internet connection, allowing access that has little dependency on client configuration. Examples in this relatively new category include SAP Business ByDesign, which was coded separately from its existing on-premise offerings (Duan, el. al, 2013).

3.2.4 Importance and Benefit of ERP:

The need for integration became more important with companies' transformation from the functional style of operation to business process structure, where all departments collaborate together to achieve the required business objective. This change is reflected in the necessity to integrate diverse technologies from different department, to merge business units into a unified software and database, and to improve business performance by having better insight of the company's information which can be accomplished by using ERP systems as platforms for business integration (Magal &Word, 2009).

ERP system assists the organizations to automate their business processes by coordinating and integrating the information between departments, which is one of the big benefits of this system (Monk &Wagner, 2009). It provides the organization with cross-functional enterprise software with integrated modules for each department in the organization with a unified database for all of them, which makes it easier for the company to manage, execute, store data and monitor core business processes: Procurement, Production and Fulfilment processes (Magal &Word, 2009) as well as other departments' functionalities such as marketing, human resources, sales, production and accounting units. The integration it brings and provides is very important for any business, since the ERP system solves the silo effect that legacy systems have, because they were developed in isolation from each other.

The ERP implementation project is considered as a complicated project since it involves many steps and it is related to every aspect in the business which requires a huge team-work and collaboration between all business's functions within the organisation such as IT, finance, manufacturing and Human resources (HR). It is the project that would affect the future of the business on a strategic level. Successfully implementing this system would have a great positive impact on the company. In contrast, failing this project would have a

major negative impact on the implementing company. Therefore, many considerations and success factors have to be well thought off and many mistakes and risks have to be avoided in order to see this project a successful one (Ali el. al, 2015).

ERP are a corporate marvel, with a huge impact on both the business and information technology worlds, including each of the following dimensions:

• ERP affects most major corporations in the world.

• ERP affects many Small and Medium Enterprises.

• ERP affects competitor's behavior.

• ERP affects business partner requirements.

• ERP has changed the nature of consulting firms.

• ERP provides one of the primary tools for reengineering.

• ERP has diffused many “best practices”.

• ERP gave client server computing its first enterprise product.

• ERP has changed the nature of the information system functions.

• ERP has changed the nature of jobs in all functional areas.

• ERP costs are high.

• ERP has experienced huge market growth. (O'Leary 2000)

Organizations invest in ERP systems to achieve important benefits. These paybacks may arise in the form of better business productivity such as shortened lead time, lower cost and efficiency communication among functional boundaries. Yet these expected outcomes are not always noticeable for ERP implementing businesses. An examination of US manufacturing firms found that though ERP systems were much known within the industry, the systems did not give major reduction in operating expenditures (Roumani el. al, 2014).

Actually, ERP outcomes can differ across industries and in many cases may rest on the implementing companies. Previous literature has attempted to understand the drivers of ERP benefits. Shang and Seddon (2003) suggested five dimensions of ERP benefits namely, operational, managerial, strategic, IT infrastructure and organizational and determined that ERP benefit was a continuous process with paybacks realized at different rate in diverse core processes. Similarly, Gattiker and Goodhue (2000) stated that over all ERP benefit was mediated by intermediate benefits and that realizing intermediate outcomes was a precondition to achieving overall ERP benefit. Chou and Chang (2008) asserted the role of intermediate outcomes as predictor of overall ERP benefit but also claimed that customization and mechanisms of the organization were robust predictors of intermediate ERP benefits (Soliman, el. al, 2015).

As the evolution of ERP systems, they are empowered to facilitate the information flow throughout the whole enterprise more efficiently and effectively. The practical benefits are divided into five aspects by Seddon (Seddon, Shanks & Willcocks, 2003): operational, managerial, strategic, IT infrastructure, and organizational. From the following, we can review the benefits of ERP systems from different directions, and better understand why they are attractive to the modern organizations no matter they are multinational companies or small-size firms.

Having the ERP system implemented successfully would have an important impacts and benefits on the organisation. These implications can be evaluated according to different viewpoints. One perspective is about gains and losses, and this can be evaluated by analysing case studies where companies implemented ERP systems. One example of these is the study conducted by (Yang &Su, 2009), which shows the benefits of having ERP system on the organization and effect of this enterprise system on other areas or IT systems such as the Supply Chain Management (SCM) system that is integrated with it. These benefits are presented in Figure 2-3.

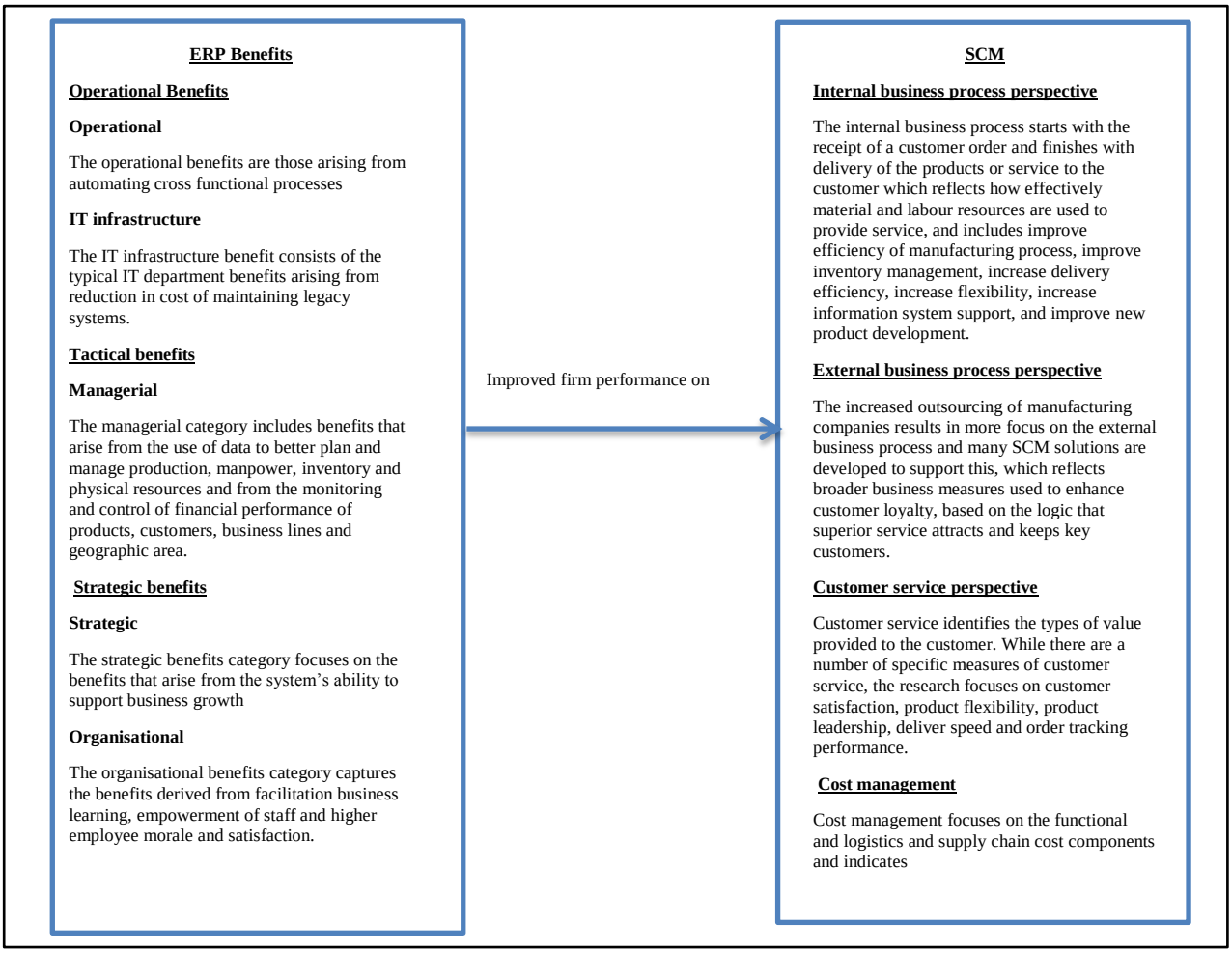

Figure 3-3: Benefits of ERP on SCM

Source: Tarhini, A., Ammar, H., & Tarhini, T. (2015)

3.3 ERP Implementation:

Shanks and Parr (2000) defined ERP implementation as "the process of developing the initial business case and planning the project, configuring and implementing the packaged software, and subsequent improvements to business processes". ERP implementation is considerably different from any traditional information system implementation for many reasons:

1. The integrated nature of ERP applications causes dramatic changes on work flow, organizational structure and on the way people do their jobs.

2. ERP systems are not built but adopted; this involves a mix of business process reengineering and package customization.

3. ERP implementation is not just a technical exercise but it is a socio-technical challenge as it poses new set of management procedures. In that sense, it has become clear that ERP implementation differs from traditional systems development where the key focus has shifted from a heavy emphasis on technical analysis and programming towards business process design and human elements.

ERP is a project; nonetheless, it has some special features comparing with other projects. Licker (1997) listed six special features of ERP including (1) high cost, (2) delayed benefits, (3) intangible products at all stages of development, (4) rapidly changing technology, (5) high risk of obsolescence, and (6) rapid turnover of systems professionals. Robey, Ross and Boudreau (2002) stated that organizations often adjust slowly to ERP and ERP investments are risky. Besson and Rowe (2001) claimed that the risks associated with information systems project are always related to (1) the project's size (number of people and sub-teams requiring coordination), (2) the technical difficulties involved, (3) the ease with which it can be integrated into a firm's existing management system, (4) the diversity of the various functions involved (its scope), and (5) the diversity of the competencies that its implementation requires.

ERP is not just a technology installation; rather, it encompasses wider behavioral factors. It is not entirely the same in different countries and areas. Differences stemmed from the different history background, social context, cultural recognition, and unbalance of technologies. In order to deal with change effectively,

3.3.1 ERP Implementation Cost:

Organizations must realize the high cost of ERP implementation and assess if it is ready for such step (Kumar, el. al, 2011). ERP implementation requires a wide range of knowledge and external expertise; without external help it is really hard for any organization to be able to implement ERP successfully (Qing el. al, 2008). In addition to the previously mentioned costs, ERP implementation cots also include training of staff and the customization of the system to fit with existing firm interfaces (Ahmad, M. & Cuenca, R., 2013).

In small to mid-sized companies, ERP implementation budget approximately ranges from $M2 to $M4. On the other hand, for large organizations it can exceed $M100. Furthermore, and after the implementation of ERP systems, where some organizations gain many benefits and achieve some competitive advantage, others encounter costly failures. Also, because success requires an adaptation and alignment between IT and organizational environment, the implementation should be "fit" among all the contingent variables such as business processes, users' background, IT capabilities, and organizational culture (Emadel. al. 2015).

Many ERP projects failed because ERP software is not properly implemented and caused serious consequences, high financial losses and many lead to bankruptcy. For instance, after two years of building its ERP system, Dell suffered a loss close to $M200. Also, Koh, Gunasekaran and Cooper reported that 40% of all ERP installations only achieve partial implementation and nearly 20% are scrapped as total failures. Despite of all the significant benefits of ERP, there is a high failure rate expected to reach 60% to 90%. Previous studies indicated that ERP implementation approximately requires between 1.5-6.0% of organization's annual revenue (Emad, el. al, 2015).

3.3.2 The ERP Implementation Phases:

There is no agreement between researchers about the definition and duration of implementation phase. Walsham (1995) mentions that the term implementation "is sometimes used to mean technical implementation, namely ensuring that system development is completed and that the system functions adequately in a technical sense. At other times, it is used to refer to the human and social aspects of implementation, such as that the system is used frequently by organizational members or that it is considered valuable to them in their personal work activities or coordination with others".

These two streams of thought have been used in ERP research. In ERP field, the term implementation is used sometimes to refer to the implementation phase exclusively or to represent to whole ERP lifecycle. For instance, Somers and Nelson (2001) referred to the whole process of adopting, selecting, implementing and using the ERP system. Somers and Nelson (2001) and other researchers like Rajagopal (2002) have used Kwon and Zmuds innovation-diffusion stage model as their ERP implementation stage model which follows six stages or phases: initiation, adoption, acceptance, routinization and infusion. Another example is the implementation lifecycle model proposed by Harwood (2003). He proposes an ERP implementation lifecycle where implementation term refers to the whole process of identifying, selecting, implementing and improving the ERP systems, and then he used the term implementation project or stage to refer to specific part of customization of the ERP according to the organization needs.

Krammergaard and Moller (2000) mention that the definition of 'ERP implementation is different according to consultants and vendor's view or organizations' view. They state that "in the world of ERP systems, the implementation is often used as a term to describe a well-defined project spanning from the choice of the systems through the configuration and the training until going live, where the system is becoming operative. In the companies' view implementation means a continuous learning cycle where the

organizational processes supported by the ERP systems are gradually aligned with the business objectives. Concurrently the business objectives are taken even further, driven by the market dynamics but also by the new internal opportunities." (Krammergaard and Moller, 2000).

For Krammergaard and Moller (2000), ERP implementation is "an ongoing process of integration and transformation of the business using an ERP system". Al-Mudimigh et al. (2001) define 'ERP implementation' as "a sociotechnical challenge that requires a fundamentally different outlook from technologically-driven innovation, and will depend on a balanced perspective where the organization as a total system is considered".

3.3.3 The SAP Implementation Phases:

The SAP is one of the biggest ERP providers, so the researcher would like to shed some light on the SAP implementation phases as SAP is the ERP system which implemented at UNRWA the case of research. There are five phases (figure 2-4) as following:

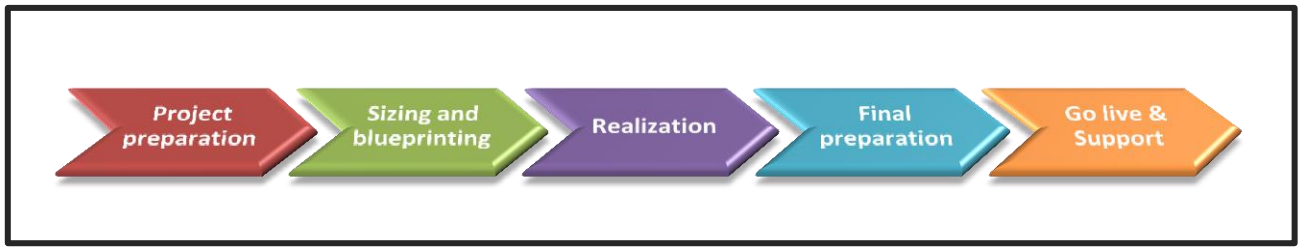

Figure 3-4: SAP Implementation Phases chart

Source: Develop by the researcher

1. **Project preparation:** This was the basis for the entire project. The goal of this phase was to detail the project definition and its functional needs. The project structure was defined. This phase was arduous due to three main aspects: the

definition of all processes that attempted to be implemented in the new system, contact with all the process stakeholders, and the difficulty to obtain information.

2. **Sizing and blueprinting:** The goal of this phase was to produce the technical specification of how to implement the chosen solution and the beginning of the parameterization and the preparation of a prototype that allowed the demonstration of the system working for each planned situation. This phase was felt as fundamental for the system comprehension since the internal project team took its first contact with the SAP system.

3. **Realization:** The goal of this phase was to obtain the configuration of the SAP system according to the design, the development of some complementary programs that served as interfaces to SAP, and the creation of training manuals and final tests.

4. **Prepare for cutover:** The final phase before going live with SAP is often referred to as the cutover phase, which is the process of transitioning from one system to a new one. The organization needs to plan, prepare and execute the cutover, by creating a cutover plan that describes all cutover tasks that have to be performed before the actual go-live.

5. **Go-live and Support:** The goal of this phase was to put the new system at work. The go-live phase was started a month behind schedule given some changes in the scope of the project. The expressions “the company will stop” or “it will not work” were in the mind of everyone, but everything worked perfectly. At the end of this phase an analysis of the general difficulties of the SAP implementation project was made.

3.3.4 ERP Implementation Success:

Through the implementation of ERP systems, organizations can reap enormous benefits but the project can also be disastrous for organizations that fail to manage the implementation process (Davenport 1998, Holland et al. 1999c). The first thing to ask is: what characteristics define a successful ERP implementation? What factors contribute to the success or failure of ERP implementations?

Nowadays, in the emerging ERP research area, the definition and measurement of ERP implementation success is a thorny issue. However, as Truex (2001) mentions, "in general, the literature views success in a limited fashion, that is, these articles do not study larger aspects of organizational and institutional change coinciding with the implementation of ERP systems".

Some authors (e.g. Markus and Tanis 2000, Harwood 2003) state that success means different things depending on who defines it. Thus, for instance, project managers and implementation consultants "often define success in terms of completing the project on time and within budget. But people whose job is to adopt ERP systems and use them to achieve business results tend to emphasize having a smooth transition to stable operations with the new system, achieving intended business improvements like inventory reductions, and gaining improved decision support capabilities" (Markus and Tanis 2000). This relative point of view for success can also be applied to failure, and people may also qualify an implementation as a failure according to their goals. As Harwood (2003) explains "a project that goes on time and within budget can be construed as a success from a project manager's viewpoint but if the benefits fail to materialize and there are subsequent problems, then, from a business manager's viewpoint, the implementation is a failure".

ERP implementation success can be measured in a broad sense from the perceived deviation from projected objectives (Annamalai and Ramayah, 2012). However, in order to

further define ERP implementation success, one must understand what some of those objectives are. An ERP system comprises of a central database that stores data across various business functions and activities in an organization (Supramaniam and Kuppusamy, 2011). An organization typically expects the system to not only address problems associated with business process integration, but also enable information to flow seamlessly across functions and streamline functional processes (Bharathi and Parikh, 2012).

When a project is completed on time and within the budget (Chen and Li, 2005), various operational benefits occur. For example, economies of scale are obtained through integration of business functions and in turn, significant operating cost reduction, improved capabilities and information transparency results (Supramaniam and Kuppusamy, 2011). Previous research also alludes to significant internal and external benefits like faster information transferals, greater financial management, reduced transportation and logistics costs, greater supply chain relations, increased responsiveness to customers, as well as flexibility, productivity, and reduced inventory, thereby increasing service levels (Patil et al., 2012).

The results of a successful ERP implementation are different from the results of an ERP implementation failure, which manifests in an implementation being delayed, going over budget and needing additional funding (Dezdar and Ainin, 2011), potential loss of authorization security, data confidentiality, authentication safety, server downtime, or ultimately system failure (Goel et al., 2011). Overall, a failure entails wasting large amounts of money for a firm or destroying its competitive advantage (Hong and Kim, 2002); ultimately leading to the system's or evens an organization's demise.

However, what must be kept in mind are the different stages of the project. Markus et al. (2000) suggest that success in projects can be divided into three phases: the project phase, shakedown phase and onward and upward phase. Optimal success refers "to the best

outcomes the organization could possibly achieve with enterprise systems, given its business situation, measured against a portfolio of project, early operational, and longer term business results metrics" (Candra, 2011).

Robey (2003) measured success of ERP from the changes angle since the transition to ERP is often combined with a business process reengineering effort which intends to produce radical organizational change. From this angle, there is a stream (Al-Mashariel, el. al, 2003) defines ERP implementation success as the ability to manage adequately a complex context involves organizational changes across various key areas related to strategy, technology, culture, management systems, human resources. The success of ERP is to transfer from existing systems to new systems, which achieve the organizational objectives.

The following two tables have been derived from the literature on ERP failure and success case studies. Table (2-2) summarizes some of the ERP failures, whereas table (2-3) summarizes some of the ERP success (Wong and Tein 2003). These ERP project successes and failures represented in the table below are just some of the cases reported in the literature during the research period. The tables show the substantial negative implications for failing in an ERP implementation project and the different factors that were identified as the cause.

Table 3-2: ERP Failures Derived from Literature Review

Author	Organization	Industry	Implementation Scope	Why Failure?
(Okolica, 2001)	Hershey Foods Corporation	Candy	SAP $110 million	Integration of the two systems had not been tested adequately
(Okolica, 2001)	Whirlpool Corp	Home Appliances	SAP	Delay shipments of appliances to distributors and retailers. One major problem of Whirlpool is the coordination of technical and

				business expertise. Whirlpool ignored the cautionary advice from the consultant and chose to go live.
(Scott, 2000)	FoxMeyer Drugs	Distributor of Pharmaceuticals	SAP/ R3 $500 million	Excess Shipment resulting from incorrect order and costing the company millions of dollars. The company failed because of inadequate risk management and change management, lack of knowledgeable personnel, BPR and training and re-skilling for the employees and lack of clear goal focus and scope of the project.
(Nielsen, 2002)	UNSW	Higher Education Sector - Australia	PeopleSoft	Cost over runs. It was expensive for the university to take people out of normal positions
(SMU 2001)	SMU	Higher Education Section - USA	PeopleSoft	Over budget because of unexpected costs that had not been budgeted for. 20 million (AUS) reportedly over budget (40 million totals). First university to implement all three modules of PeopleSoft in Australia. Staff not happy with the benefits of the systems v. the cost.
(Martin 2001)	Dell	Computer	SAP	Lack of clear goal, focus and scope as changes needs to be able to be made quickly in ordering, manufacturing and other systems, but it cannot be done in a highly integrated system.
(Mearian 2000)	Petsmart	Pets and animals	SAP Retail	Hard to incorporate ERP to existing systems
(Pender 2000)	Siemens Power Transmission	Telecommunications	Baan - $12 million (US)	Lack of top management support because not enough funding to continue project.
(Hirt and Swanson 2001)	A-dec Inc.	Dental Equipment Man.	Baan	Baan training is seen as too expensive
(Holland et al. 2001) (Stedman 1999)	Reebok	Sports equipment	SAP	ERP system failure because the system does not fit with organizational processes.

Source: Wong and Tein 2003

Table (2-2) has shown that 6 out of 10 cases of ERP failure were implemented by SAP. This is followed by two cases about PeopleSoft implementation and two cases about Baan implementation. The factors identified in the literature, which lead to ERP failure, were integration problems, lack of external consultant involvement, inadequate change management, lack of BPR and user training, lack of clear goal and scope and lack of top managements support.

Table 3-3: ERP Successes Derived from Literature Review

Author	Organization	Industry	Implementation Scope	Why Success?
(Davenport 2000)	Earth grains	Bakery Products (USA)	SAP's R/3	The project started with the clear strategy and each department had analyst reporting issues to management Change compensation system to employees after implementation. Involved interpersonal skills for training and strong knowledge on technical and the company business process.
Sumner (1999)	Monsanto	Chemical and life Sciences SAP		Success factors in Mpnsanto project dealt with the management structure, the redesign of business process, and investment in re-skilling by proving training, and acquisition of external expertise.
(Grygo 2000) (Diehl 2000)	U.S. Mint	Coin Production	PeopleSoft - $40 million	The project started with a business requirement. Employers were able to see how everything needed to be coordinated. People received training in the use of the system and used of external consultant on the project. The

				Project also involved Senior management and Organisations understand that the undertaken project will be painful and expensive but expected to provide savings of $80 million over the next seven years.
Sumner (1999)	Ralston Purina	Manufacturing	Oracle	The CSF for Oracle project at Ralston included Strong management support, experienced technical consultants and project manager and effective user training
Sumner (1999)	Sigma Chemical	Chemical Industry	SAP	Support from top management, BPR, Invest in training and re-skilling and used of consultants.
Hewlett-Packard (2000)	Scripps Metabolic Clinic	Scripps Metabolic Clinic	Lawson ERP integrated solution on HP 9000	Reliable vendor partnership and successful system integration
Harreld (2000)	Houston Independent School District	Public Sector and Education	SAP ERP modules	Project started with well plan BPR and focused on the integrating legacy system and an existing PeopleSoft Inc. Selected a right team also become part of success factor. The system already has shown a 42 percent return on investment and has lowered inventory by $1M
ExperiencePoint (2001)	ExperiencePoint	Manufacturers of aircraft	Not provided	The project started with the used of external consultant. Manage to get top management support and user participation. The company also provided training to the user in order to improve

				their understanding towards the system.

Source: Wong and Tein 2003

Table (2-3) has shown 8 cases of ERP successful implementations. 4 out of 8 cases were implemented by SAP. There were two successful cases that were implemented by external consultant. Most of the reasons that lead to ERP success were having clear goals and scope, adequate change management, user involvement, adequate training and education, strong technical and business knowledge, BPR, top managements support, used of external consultant and project champion.

3.4 ERP Critical success factors:

CSFs are often used to identify and state the key elements required for the success of a business operation (Hossain & Shakir, 2001). Further on critical success factors can be described in more details as a small number of easily identifiable operational goals shaped by the industry, the firm, the manager, and the environment that assures the success of an organization (Laudon & Laudon, 1998). The definition by Laudon and Laudon is similar with the definition by Rockhart and Scott (1984) that mentioned that CSFs are the operational goals of a firm and the attainment of these goals will assure the successful operation.

Critical Success Factors (CSFs) approach was first used by Rockhart (1979) in IS area. It has been applied to many aspects of IS including project management, manufacturing systems implementation, reengineering, and, more recently, ERP systems implementation [(Bancroft, 1996), (Brown, 1999), (Gibson, 1999)]. Within ERP implementation context, CSFs are defined as "factors needed to ensure a successful ERP project" (Gibson, 1999). Several studies identified the critical factors needed to enable

project managers and management boards to improve their ERP implementation projects. Some of these CSFs are common with other IT projects such as top management support, user's involvement and others are exclusive for ERP systems such Business Process Reengineering. However, these studies are dragged under traditional implementation research whose main aim was to investigate factors relevant to IS implementation success. Unfortunately, this vein of research, often referred to as "factor studies," has proven inadequate in terms of explaining links between the variables involved in information systems implementation. This view was supported by few researchers such as Paré and Elam (Paré, 1997), who cited two specific limitations of the approach: (1) that these studies can help us understand only part of the implementation puzzle and (2) that they cannot help us explain the dynamics of the implementation process. According to Paré and Elam, researchers have: "…built models that identify a limited set of critical factors affecting IT implementation success, but [researchers] know very little about how and why the factors included in these models interact and work together to produce success or failure. As a result, [management information systems] researchers lack a full understanding of the IT implementation process that is necessary to guide practitioners to attain positive outcomes".

More insights into the interrelationships of these factors will help project managers and other project stakeholders to predict the likelihood of project success, early enough for taking corrective action. The earlier a project manager discovers that the project is going off course, the more effectively and efficiently can adjustments be made.

The CSFs framework technique suggested by Rockhart (1982) declared that the use and scope of CSFs framework depended on the subjective ability, style, and perspective of the executives. He further explained that the shaping of CSFs could be seen from four viewpoints that were shaped by industries and the structural changes, by firm operational strategies, managers perception, and the changes in environment (with regards to technology). We intend to study the CSFs in ERP implementation from firm operational strategies because ERP software impounds deep knowledge of business practices accumulated from vendor implementation in many organizations (Seddon & Shang, 2002).

In order to resolve this costly failure trap and maintain a success path in ERP implementation, many studies identified a set of critical success factors (CSFs) for ERP implementation. CSFs include top management support, vender's support, consultant's competence, users' support, IT capability, and project management leadership (Wang, el. al, 2008). Similar to this study, Ustasüleyman and Percin (2010) concluded that project management, consultant planning activities and internal audit were significant in predicting the ERP implementation success.

On the other hand, successful system implementation needs explicit objectives as the first step, the second condition is embedding organizational and technology dimensions into information system, and finally, resolving practical problems in the road of successful implementation (Chen, el. al, 2008). Another study by Somers and Nelson summed the challenges faced by firms throughout the implementation and utilization of ERP systems in a list called critical success factors (CSFs) and concluded that the highest among the 22 factors were: top management support, project team competency and interdepartmental cooperation. On the other hand, the least among all was the use of consultants (Somers, el. al, 2001). The concluded to the factors that facilitate the success of ERP implementation and emphasized the early and careful preparation of the process, and also securing commitment and cooperation from everyone. Finally, vender-outsourcing decisions need to be managed carefully as the authors recommend that delegating responsibility at the start of the project might be suitable, but at later stages the delegation of responsibilities should not be forwarded to venders Emad, (R. Abu-Shanab, el. al, 2015).

Thoroughly in order to determine the factors studied by the authors of those papers, in which, 51 different CSFs were identified. They cover organisational, neutral and operational aspects in the business (Munir & Pinedo-Cuenca, 2013) as well as pre, during and post implementation phases of the ERP system. The importance of considering the

discovered factors comes from their significance to have a successful implementation of the ERP package. The discovered factors are listed in table (2-4), in which they are presented without a specific order, however, with considering not have the same CSF repeated while examining the journal articles (Tarhini, el. al, 2015).

Table 3-4: CSFs identified in the accepted literatures

CSF #	CSF Description
1.	Top management support and commitment
2.	Training for different users groups
3.	Clear vision, goals and objectives of the ERP system
4.	Careful change management
5.	The use of ERP implementation consultant
6.	End user involvement
7.	Suitable IT legacy systems
8.	Organizational fit for ERP
9.	Business process re-engineering (BPR) and process management
10.	Project champion
11.	On-going ERP vendor support
12.	Communication among the implementation team members
13.	IT infrastructure
14.	Team Work
15.	IT department capability
16.	Technical issues
17.	Motivational factors to implement ERP systems
18.	Implementation strategies
19.	Minimal customization of packages
20.	Good project scope management
21.	Project management
22.	Experienced project manager-leadership
23.	Adequate resources
24.	Interdepartmental communication
25.	Interdepartmental cooperation
26.	Education on new business processes
27.	Adequate ERP software selection
28.	Formalised project plan/schedule
29.	Project team composition/team skills
30.	Reduced trouble shooting-project risk
31.	Steering committee
32.	Trust between partners
33.	Empowered decision makers
34.	Managing consultants
35.	Data analysis and conversion
36.	Project team competence

37.	Use of vendors' development tools
38.	Company-wide support
39.	Monitoring and evaluation of performance
40.	Business plan and long-term vision
41.	Management of expectations
42.	Vendor/customer partnerships
43.	Defining the architecture
44.	Dedicated resources
45.	Integration of business planning with ERP planning
46.	Ease of system's use and users' acceptance
47.	Effectiveness of management in reducing the users' resistance
48.	Organizational culture \Cultural Change/political issues
49.	Data and information quality
50.	Focus on user requirements
51.	A formalized project approach and methodology

Source: Tarhini, A., Ammar, H., & Tarhini, T. (2015)

The stakeholders involved in the ERP implementation project can be divided into several groups. This categorisation is important since it provides a way for each group to focus on the CSFs that are relevant to it. Table (2-5) shows these groups. This categorisation is mainly based on the research done by (Nour & Mouakket, 2011) and from the CSFs papers.

Table 3-5: Stakeholders groups in ERP implementation project

Group #	Stakeholder Group Name
1.	End user
2.	Top management
3.	IT Department
4.	Project Team
5.	Organisation
6.	Vendor
7.	ERP Consultant
8.	Employees from different department
9.	Business processes experts

Source: Tarhini, A., Ammar, H., & Tarhini, T. (2015)

The rank result according to Tarhini, A., Ammar, H., & Tarhini, T. (2015) findings are present in table (2-6). This order gives an indication about the most important CSFs in the ERP implementation projects. Based on that, participants concerned with this project can prioritise their attention for the important factors in order to achieve best results, to get the required functionalities, and to meet the expectations from the ERP system.

Table 3-6: CSFs ordered according to their appearance frequency in the literatures

CSF Order	CSF Description	Frequency
1.	Top management support and commitment	20
2.	Training for different users groups	17
3.	Project management	16
4.	Clear vision, goals and objectives of the ERP system	15
5.	Careful change management	14
6.	Interdepartmental communication	14
7.	Project champion	13
8.	The use of ERP implementation consultant	12
9.	Business process re-engineering (BPR)	12
10.	Communication among the implementation team members	10
11.	Adequate ERP software selection	10
12.	Project team competence	10
13.	On-going ERP vendor support	9
14.	Project team composition/team skills	9
15.	Minimal customization of packages	8
16.	End user involvement	7
17.	Education on new business processes	7
18.	Reduced trouble shooting-project risk	7
19.	Steering committee	7
20.	Management of expectations	7
21.	Dedicated resources	7
22.	Organizational culture \Cultural Change/political issues	7
23.	Suitable IT legacy systems	6
24.	Team Work	6
25.	Implementation strategies	6
26.	Interdepartmental cooperation	6
27.	Data analysis and conversion	6
28.	Use of vendors' development tools	6
29.	Vendor/Customer partnership	6

30.	Data and information quality	5
31.	IT infrastructure	4
32.	Empowered decision makers	4
33.	Business plan and long-term vision	4
34.	Defining the architecture	4
35.	Ease of system's use and users' acceptance	4
36.	Formalised project plan/schedule	3
37.	Organizational fit for ERP	2
38.	IT department capability	2
39.	Good project scope management	2
40.	Experienced project manager-leadership	2
41.	Adequate resources	2
42.	Managing consultants	2
43.	Company-wide support	2
44.	Monitoring and evaluation of performance	2
45.	Integration of business planning with ERP planning	2
46.	Technical issues	1
47.	Motivational factors to implement ERP systems	1
48.	Trust between partners	1
49.	Effectiveness of management in reducing the users' resistance	1
50.	Focus on user requirements	1
51.	A formalised project approach and methodology	1

Source: Tarhini, A., Ammar, H., & Tarhini, T. (2015)

This study will focus on the five CSFs, which are italicized in Table (2-4) strongly influenced by the sound literature study underlying Somers' and Nelson's ranked list. Most of they would hold for IT implementation projects in general, but some are more important for ERP projects in particular:

1. **Top management support:** The top management support has been identified as the most important factor for the overall success of ERP implementation. It is necessary for the top management to have a clear vision, goal and business plan for the ERP. Top management should clearly convey the goals and benefits of the project. For instance, setting up a steering committee to communicate and engage with the project team and employees to ensure the relevant ERP project is in the right direction and scope. Top management should justify investment of ERP system by providing the necessary resources and adequate time for the organization to adapt to

ERP system. Further, it is also crucial to align business strategy with IT strategy to have a synergy effect (Gupta, H., et al., 2014).

2. **Project team competence:** This CSF is one of those that was originally not very high on Somers and Nelson's (2001) list but that ended up remarkably high when ranked by the executives that filled in their survey. Indeed, it seems there has not been that much research regarding the impact of project team competence on IT implementation success. Somers and Nelson do refer to some vendor-related documentation (Bancroft et al, 1998) and APICS literature (Kapp, 1998). The company own staff having necessary skills, knowledge and experience regarding implementation project. Availability and competence of project team external participants – implementation consultants, developers, software suppliers' representatives (Pavlovna, Pecherskaya Evelina, et al. 2015).

3. **User Training:** The role of training to facilitate software implementation is well documented in the MIS literature (R. R. Nelson, and P. H. Cheney, 1987). Lack of user training and failure to completely understand how enterprise applications change business processes frequently appear to be responsible for problem ERP implementations and failures (A. Crowley, 1999), (C. Wilder, and B. Davis, 1998). ERP projects appear to have a six-month learning curve at the beginning of the project (D. P. Cooke, and W. J. Peterson, 1998). At a minimum, everyone who uses ERP systems needs to be trained on how they work and how they relate to the business process early on in the implementation process. The main reason for education and training program for ERP implementation is to make the user comfortable with the system and increase the expertise and knowledge level of the people. ERP related concept, features of ERP system, and hands on training are all important dimensions of training program for ERP implementation. Training is not only using the new system, but also in new processes and in understanding the integration within the system – how the work of one employee influences the work of others. Training about ERP system use for the staff members. This includes the

education according to the new business processes in ERP implementation (Kim, J. H., Do, J. R., & Choe, Y. C., 2015).

4. **Interdepartmental communication:** Communication is the oil that keeps everything working properly (K. Schwalbe, 2000). Slevin and Pinto (1986) identified communication as a key component across all ten factors of their Project Implementation Profile and maintained that "communication is essential within the project team, between the team and the rest of the organization, and with the client". Poor communication between reengineering team members and other organizational members was found to be a problem in business process reengineering implementations (V. Grover, el.al, 1990). Communication and cooperation should be of two kinds: inwards the project team and outwards to the whole organization. It is necessary to create an understanding and an approval of the implementation (Stephan A. Kronbichler, 2009).

5. **Data analysis and conversion:** A fundamental requirement for the effectiveness of ERP systems is the availability and timeliness of accurate data. Data problems can cause serious implementation delays, and as such, the management of data entering the ERP system represents a critical issue throughout the implementation process (K. M. Kapp, 1989). Within the company, the challenge lies in finding the proper data to load into the system and converting all those disparate data structures into a single, consistent format. Conversion can be an overwhelming process, especially if companies do not understand what needs to be included in the new systems and what needs to be omitted. In addition, interfaces with other internal and external systems (between departments such as accounting and production, legacy, client/server, other ERP/MRP/MPRII systems, data warehouses, EDI, EFT, and Web) require the ability to handle complex data sources and legacy data types. A fundamental requirement for the effectiveness of ERP systems is the availability and timeliness of accurate data. Data problems can cause serious implementation delays, and as such, the management of data entering the ERP system represents a

critical issue throughout the implementation process (Toni M. Somers & Klara Nelson, 2001).

3.5 UNRWA:

Following the 1948 Arab-Israeli conflict, UNRWA (the United Nations Relief and Works Agency for Palestine Refugees in the Near East) was established by United Nations General Assembly resolution 302 (IV) of 8 December 1949 to carry out direct relief and works programmes for Palestine refugees. The Agency began operations on 1 May 1950.

UNRWA provides assistance, protection and advocacy for some 4.7 million registered Palestine refugees in Jordan, Lebanon, Syria and the occupied Palestinian territory, pending a solution to their plight.

UNRWA which is working in five operation areas: Jordan, Syria, Lebanon, West Bank and Gaza Strip with more than 22,000 staff members. UNRWA provides assistance, protection and advocacy for some 4.7 million registered Palestine refugees. UNRWA structure consists of several departments and programmes such as Education, Health, Relief and Social Services, Special Environment Health, emergency and job creation programmes in addition to other Support Departments that serve Palestine refugees.

3.6 SAP Implementation at UNRWA:

Since 2001 UNRWA has been using an information management system called Ramco. Since UNRWA's 2006 Organisation Development (OD) Plan, both internal and external experts have highlighted the shortcomings of the Ramco system as a management tool and have urged the adoption of a modern ERP system, similar to that which many UN agencies have already implemented. Since the OD, the weaknesses of the system associated with internal controls and the ability to support management decision-making have become

increasingly apparent, and programme directors are demanding better tools to manage their portfolios of activities. This Agency need, coupled with the obsolescence of the system support ends for the database in April 2013 and the Ramco software at the end of 2014 have provided the impetus to drive the ERP modernisation project forward.

UNRWA top management decided to implement ERP system (SAP R/3) in 2014 in its five operations areas. URNWA ERP system includes four streams; *Human Resource, Finance, Supply Chain Management and Public Sector Management*.

3.7 Previous Studies:

1- **Raafat Saade Harshjot Nijher, (2016),"Critical Success Factors In Enterprise Resource Planning Implementation: A Review Of Case Studies".**

The study aimed to consolidate the critical success factors as published in ERP implementation case studies. We perform our analysis and propose the final critical success factors based on the reported ERP implementation process stages.

The methodology follows the eight category coding steps proposed by Carley (1993) and utilizes only ERP implementation case studies to identify a distinct set of critical success factors. The 37 case studies used in this article provide a reasonable sample from different countries and contexts. Two methodologies were followed, one for the literature review process and the other for the analysis and synthesis.

The study concluded Out of 64 reported critical success factors that were extracted from the literature and subsequent detailed analysis and synthesis we found a total of 22 factors that are distinct. These factors which encompass change management are proposed with five ERP implementation stages.

The study recommended use the 22 CSFs to develop a post implementation assessment instrument with the appropriate scales to measure them – hence the confirmation of these factors quantitatively. This article sheds light on the possible distinction of factors related to each implementation stage.

2- **Ali Tarhini, Hussain Ammar, Takwa Tarhini& Ra'ed Masa'deh (2015): Analysis of the Critical Success Factors for Enterprise Resource Planning Implementation from Stakeholders' Perspective: A Systematic Review.**

This study aims to fill the gap by providing a systematic review for the literature related to CSFs in the ERP implementation and also presents them while considering the participants' different perspectives. This paper presents a systematic review of 35 research articles published on the CSFs implementation between 2000 and 2013. The researcher collected and analysed 35 of the key articles discussing and analysing ERP implementation.The paper identifies a total of 51 CSFs in ERP implementation. In these 51 CSFs, top management support and commitment, training and education, project management, clear vision and objectives of the ERP system, careful change management and Interdepartmental communication were the most frequently cited as the CSFs to the successful implementation of ERP systems. A better understanding of the CFSs will help the practitioners and managers to improve the chance of success in the implementation projects.

The process for this research is based on the five steps for the research based on systematic review, in which the authors provided an explanation of the tasks accompanying a systematic literature review such as selecting, reviewing and quality assessment of the reviewed literatures. The five steps are and the actions taken by the researchers are follows: Framing the question for the review, identifying relevant work and literatures, assessing the

quality of the found studies, summarizing the discovered evidences that answer the research question and understanding the findings.

The study conducts the Appearance Order of Critical Success Factors CSFs. This order gives an indication about the most important CSFs in the ERP implementation projects. Based on that, participants concerned with this project can priorities their attention for the important factors in order to achieve best results, to get the required functionalities, and to meet the expectations from the ERP system. TMS get the high frequency. The other finding is classifying the discovered CSFs in the literatures according to the stakeholders group identified during previous phase. This categorisation is very important for the people involved in the ERP implementation since they will be able to focus on the factors that concern them, which can possibly reflected in a better performance, and as a result to achieve a successful ERP

The researcher recommended to conduct the factors ordered according to their importance while considering the participants' (stakeholders') different point of views, which can be considered a new way to look at the CSFs and the classification can make it easier for the members of any the stakeholders groups to find the factors that concern them more easily. Thus, they can achieve more focus and better performance, which can be reflected in a more successful ERP implementation.

3- Pavlovna, P. E., Aleksandrovich, K. Y., Petrovich, Z. A., & Yuryevna, G. P. (2015): Key Success Factors Analysis in the Context of Enterprise Resourcesplanning Systems Projects Implementation: Modern Applied Science.

This study aims to systematized key factors, which influence ERP projects implementation success at the different stages of its life cycle. The authors develop the dynamic model of stage-by-stage diagnostic readiness assessment of company potential regarding ERP project. Fours authors' hypotheses were suggested and tested in the context of the offered model. Stage-by- stage diagnostic potential assessment of a company

regarding project implementation, which can be used by company heads, practical persons and scholars

Currently concerning project management, the personnel management trend dominates. The majority of researches agree that people are most valuable company assets, and cause of the majority of projects failure is inadequate attention of management to human factor. Correspondingly, many scientists placed HCM aspects into the lists of critical success factors of ERP projects they made. May and Kettelhut (May & Kettelhut, 1996) analysed presence and impact of human factor on reengineering projects and indicated high price, which companies, paying inadequate attention to human factor, pay. The authors also represented recommendation for human factor management in order to increase probability of reengineering projects successful execution.

The study concluded that Key Factors That Have Impact on ERP Systems Implementation Project Success Were Identified and Systematized, Structural Functional Model of Identified Factors' Influence at the Different Stages of Projects Life Cycle was developed. Also The Analysis of Critical Soft Factors Impact on ERP Project Outcome with Different Significance of Above-Noted Factors in Case of Successful and Unsuccessful Projects, and at the Different Stages of ERP Project, Dynamic Model of Stage-By-Stage Diagnostic Readiness Assessment of Company Potential Regarding The Implementation of ERP Project.

The study recommend to identification of soft critical factors of ERP projects success, wrong treatment of which can lead to their transformation into risk factors, which endanger project successful completion.

4-Veena Bansal Ankit Agarwal, (2015),"Enterprise resource planning: identifying relationships among critical success factors".

The study aims to establish that there are causal relationships among critical success factors (CSFs) associated with an enterprise resource planning (ERP) project. The authors prove that: H1 – Vendor (VN) is positively related to Enterprise System Selection Process (ES). H1a – Enterprise System Selection process (ES) mediates the relationship between vendor (VN) and Success (SS). H2 – Project Management (PM) is positively related to Implementation Strategy (IS). H2a – Implementation Strategy (IS) mediates the relationship between Project Management (PM) and Success (SS). H3 – Support of Top Management (TM) is positively related to Project Team Competence (PT). H3a – Project Team Competence (PT) mediates the relationship between Support of Top Management (TM) and Success (SS).

The researcher conducted a survey using a questionnaire. The research questionnaire was floated to 450 respondents; the authors received 168 responses. The authors had to discard 62 responses as their organization had greater than 250 employee and did not qualify to be an Indian SME. The authors were left with 106 responses. The respondents were managers (5.6 percent), consultants (39.6 percent), engineers (50 percent) and the remaining (4.8 percent) did not specify their job. The authors then do regression analysis and path analysis including all other required analysis.

The finding of this study is that all hypotheses are supported. The management may use these findings to understand relationships among CSFs and use this knowledge to mitigate and manage CSFs.

5- **Bambang Purwoko Kusumo Bintoro Togar Mangihut Simatupang Utomo Sarjono Putro Pri Hermawan, (2015),"Actors' interaction in the ERP implementation literature".**

The purpose of this paper is to identify the existence of studies, by exploring the current literatures, on interaction among actors in Enterprise Resource Planning (ERP) implementation.

A new classification framework is offered, along with the two dimensions of ERP implementation: determinants and outcomes, to provide four types of research classes. Hundreds of articles were searched by using keywords from journal data bases. The selected articles were grouped based on the new classification of ERP implementation, followed by an in-depth analysis by using the Context, Intervention, Mechanism, Outcomes logic and the system of systems methodologies (SOSM) framework.

The study findings are the interactions among actors in ERP implementation have been overlooked, although there are almost always disagreements, misperceptions, and conflicts. Managing the interactions among actors is considered important because common failures in ERP implementation are often caused by mismanaged interactions among the key actors. Unfortunately, the existing research has so far shown a small effort to study how the actors' interactions are managed.

The study recommended to the entire organization prior to the ERP implementation to seriously consider the typical conflict among actors on each stage of ERP implementation and its causal factors and how to resolve them.

6- **Alberto Felice De Toni Andrea Fornasier Fabio Nonino, (2015),"The impact of implementation process on the perception of enterprise resource planning success".**

The purpose of this paper is to investigate the impact of the implementation process on the ERP's success in the post-adoption stage, measured as system's acceptance, reliability and utility perceived by users, inside the organizations.

The researcher adopted a multiple case study research design. The data collected, provided by IT managers and 120 key-users from four companies, has been used to investigate the impact of the Enterprise Resource Planning (ERP) implementation phases on selected constructs of the Task-Technology Fit (TTF) and Technology Acceptance

Model (TAM). The empirical evidences highlight a direct relation between the effectiveness of the implementation phases and the ERP's success.

The research results emphasize the importance of the quality of the software, but especially the importance of the implementation phases' management, which require technical and managerial ability of the team made up of people from the system integrator and the company's key-users. Evidences suggest that the higher will be the organizational diffusion of an ERP implemented during a successful implementation project, the higher will be the perception of ERP success in the post-adoption stage. Moreover, the users' perception of ERP quality will be maintained over time.

This exploratory study recommended that companies' managers should be aware that a correct methodology of implementation, strongly influenced by the team, impacts on the technology consistency and therefore, on the ERP system success. So an appropriate choice is to invest more in the creation and development of internal and external project team than in the ERP's brand.

7- **Poonam Garg Divya Agarwal, (2014),"Critical success factors for ERP implementation in a Fortis hospital: an empirical investigation"**.

This study aim to examine the success of enterprise resource planning (ERP) implementation based on five identified items, i.e. top management commitment (TMC), user involvement (UI), business process reengineering (BPR), project management (PM) and ERP teamwork and composition (TWC) factors at Fortis hospital, Bangalore, India. It also tests a number of hypotheses and examines the hypothetical relationships among critical success items and success of ERP implementation.

The researcher used Empirical data were collected via a survey questionnaire/interview technique. A structured interview was planned and conducted with key executives of Fortis

hospital who were familiar with success of ERP implementation progress as well as examination of company documentation supported by literature.

This study conducted a significant relationship was found between TMC, UI, BPR, PM and ERP TWC with success of ERP implementation at Fortis hospital.

There are some managerial recommendations from the analysis to improve ERP project successes in Indian health care sector are: (1) Top management has to actively demonstrate its commitment to the whole organization, and especially to the project team. This could be achieved by being an active member of a Steering Committee: a team comprised of the company's core hands-on representatives and decision makers, with effectively defining the goals and requirements of the ERP project. (2) Involve the grassroots. Managers normally do not know 100 percent of the processes that the end-user follows to do their day-to-day job functions. Involve end-users early on so that business processes get mapped accurately to begin with, rather than having to go back and run multiple iterations to correct them later. Additionally, if end-users are involved, there will be a better "buy-in" in the business process and ERP application. (3) Hospitals normally adopt BPR to pursue multiple improvement goals including quality, cost, flexibility, speed and accuracy. BPR supports the re-thinking of business processes and is necessary to software applications such as ERP systems. Hospitals should adopt BPR to adapt to ERP system, and should not modify the package to adapt to business process to incorporate the best practices worldwide. (4) ERP implementation requires the complex coordination of people, process, and technology. Effective PM will ensure that the project is completed within the defined time, scope, quality and cost constraints. (5) Carefully pick the cross-functional team internally, as well as externally. Internal team members should be subject-matter experts in their domain. External consultants should also be subject-matter experts with extensive experience in implementing ERP solutions, and convey excellent product knowledge.

8- **Hooshang M. Beheshti Bruce K. Blaylock Dale A. Henderson James G. Lollar, (2014),"Selection and critical success factors in successful ERP implementation".**

The study aimed to investigate factors that contribute to the successful implementation of enterprise resource planning (ERP) systems in manufacturing firms.

The researcher adopt qualitative research method was used to study six diverse manufacturing firms in Virginia. A semi-structure method of data collection was used for the analysis.

The study conducted that the ERP software has emerged as a key enabler of system integration in organizations to reduce redundancy, improve efficiency, productivity and performance. Firms implement ERP not only to improve operations efficiency but to be more responsive to the customer needs in the global economy. The findings provide insights on the factors that these large and global manufacturing firms consider to be important to the success of ERP implementation and utilization.

The researcher recommends to considerable amount of time and capital are required for the acquisition and implementation of ERP systems. The results are useful to managers of manufacturing companies who are interested in using, modifying or upgrading an integrative technology software system, such as ERP.

9- **Poonam Garg Atul Garg, (2014),"Factors influencing ERP implementation in retail sector: an empirical study from India"**

The study aimed to explore the factors influencing the enterprise resource planning (ERP) implementation success in Indian retail sector. Additionally, the study also addresses the relationship between factors that influence ERP implementation and the success of ERP implementation empirically. Strategic, Technological, People and Project management are the examined factors.

The methodology adapted that empirical data were collected through survey questionnaire from practitioner like project sponsors, project managers, implementation consultants and team members who were involved in ERP implementation in retail sector.

The study conducted that's empirically verified that Strategic, Technological, People and Project management factors are positively influencing ERP implementation success. All four hypotheses were supported by results of the study.

10- Jiwat Ram David Corkindale, (2014),"How "critical" are the critical success factors (CSFs)?"

The study aimed to examine the literature on enterprise resource planning (ERP) to establish whether the critical success factors (CSFs) for achieving stages of an ERP project have been empirically shown to be "critical".

The researcher used a systematic approach to review 627 refereed papers published between 1998 and 2010 on ERP, from which 236 papers related to CSFs on ERP were selected for analysis. The authors employed procedures from qualitative and interpretive research methods, to analyse and interpret the material using five-step procedure of gathering, categorising, coding, analysing and comparing the data.

Prior studies have identified a large number of CSFs for ERP implementation success or improved performance outcomes. The authors have shown that a limited number of CSFs have been empirically investigated for their role in, and effect on, implementation success or post-implementation performance outcomes. While reporting the factors that have some evidence to support them, the authors question the utility of the general concept of CSFs.

The study recommended that findings of this study can help managers to focus their attention, priorities, resources and leadership on managing the CSFs that have been established to be critical for achieving ERP project implementation and/or performance outcomes.

11- Dara Schniederjans Surya Yadav, (2013),"Successful ERP implementation: an integrative model".

The study aims to present a conceptual model that better defines critical success factors to ERP implementation organized with the technology, organization and environment (TOE) framework. The paper also adds to current literature the critical success factor of trust with the vendor, system and consultant which have largely been ignored in the past.

The paper uses past literature and theoretical and conceptual framework development to illustrate a new conceptual model that incorporates critical success factors that have both been empirically tied to ERP implementation success in the past and new insights into how trust impacts ERP implementation success.

The study finds a lack of research depicted in how trust impacts ERP implementation success and likewise a lack of a greater conceptual model organized to provide insight into ERP implementation success.

The study recommended to use the model presented here can be used as a tool for optimizing ERP implementation, both before and during the implementation process.

12- Poonam Garg Atul Garg, (2013),"An empirical study on critical failure factors for enterprise resource planning implementation in Indian retail sector".

The purpose of this study is to focus on the process of identifying, analyzing and prioritizing the failure factors of ERP implementation using cause-effect and Pareto analysis.

Empirical data were collected via a survey questionnaire/ interview technique. The questionnaires were distributed to practitioners like project sponsors, project managers, implementation consultants and team members who had been involved/implementing/ using ERP in retail sector.

Results suggest that 9 critical failure items namely Inadequate resources, Poor User involvement, Users' resistance to change, High Attrition rate of project team members, Lack of top management commitment, Poor project management, Inadequate project team composition, Ineffective organizational change management and Unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.

The awareness about these critical failure items may help the decision makers in formulating a better strategy for ERP implementation.

13- Shashank Saini Siddhartha Nigam Subhas C. Misra, (2013),"Identifying success factors for implementation of ERP at Indian SMEs".

The purpose of this study is to identify the success factors for implementation of enterprise resource planning (ERP) at Indian small to medium-sized enterprises (SMEs) and to provide a comparative study with the trend in Indian large organizations and the global trend.

The researcher proposes a hypothetical success factors model to address the research questions and validated the hypotheses using large-scale survey-based methodology. In this

research the authors evaluated the success factors for implementation of ERP in Indian SMEs and then compared them with large Indian organizations and the global trends. In this paper, the authors have also tried to give some intuitive explanation to the possible reasons of difference between factors for SMEs compared to large organizations and global trends.

It was found that four of the five hypothesized technological factors are significantly related to the success of ERP implementation. They are: comprehensiveness of software development/process integration plan; significance of age of IT infrastructure; comprehensiveness of data migration plan; and extensiveness of system testing. Also, four of the nine hypotheses/ sub-hypotheses amongst the people factors are significantly related to the success of ERP implementation. They are: blend of cross-functional employees in the team; extent of empowerment of decision-making team; significance of morale of the implementation team; and exhaustiveness of user training. The authors have found that ten of the 11 hypothesized organizational factors are significantly related to the success of ERP implementation. They are: organisation's adaptability to changes; involvement of top management; degree of customization; efficiency of business process re-engineering; exhaustiveness of contingency plans; clarity in definition of milestones; clarity in evaluation of milestones; alignment of ERP package with business processes; comprehensiveness of implementation strategy; involvement of consultant in implementation strategy; clarity of project status disclosure; and appraisal of clients about ERP strategy.

14- Rupa Mahanti James R. Evans, (2012),"Critical success factors for implementing statistical process control in the software industry".

Statistical process control (SPC) is a powerful technique for managing, monitoring, analyzing and improving the performance of a process through the use of statistical methods. The purpose of this paper is to present results of a survey on SPC in the software industry. The focus is on understanding the critical success factors (CSFs) for successful implementation of SPC in the software industry.

In total, 12 critical success factors (CSFs) with 36 variables were identified from the literature and discussions with software quality professionals. An e-mail questionnaire was used to gather the data.

The results reveal that management commitment and involvement are the most critical success factors, followed by selection of control charts. The use of SPC facilitators was found to be the least important factor in successful deployment of SPC in the software industry.

15- Shahin Dezdar Sulaiman Ainin, (2011),"The influence of organizational factors on successful ERP implementation".

This study aims to examine organizational factors (i.e. top management support, training and education, enterprise-wide communication) that may influence the enterprise resource planning system implementation success in Iran.

Empirical data were collected via a survey questionnaire. The questionnaires were distributed to selected managers of companies adopting ERP systems in Iran.

The results indicate that the companies' top management must provide full support and commitment to the project if the system is to be successful. In addition, management must also ensure the plans are communicated and understood by the entire company. Finally it is also illustrated that adequate training and education pertaining to the systems must be given to all users to ensure that they are able to use the system effectively and efficiently thus contributing to their satisfaction which will subsequently influence the implementation success.

16- Dimitrios Maditinos Dimitrios Chatzoudes Charalampos Tsairidis, (2011),"Factors affecting ERP system implementation effectiveness".

The study seeks to introduce a conceptual framework that investigates the way that human inputs (top management, users, external consultants) are linked to communication effectiveness, conflict resolution and knowledge transfer in the ERP consulting process, as well as the effects of these factors on ERP system effective implementation.

The examination of the proposed conceptual framework was made with the use of a newly developed questionnaire. The questionnaire was distributed to a group of 361 Greek companies that have implemented an ERP system. Information technology (IT) managers were selected as the key respondents of the questionnaire. After the completion of the four month research period (September to December 2008), 108 usable questionnaires were returned (response rate 31 percent approximately). The empirical data were analyzed using the structural equation modelling technique (Lisrel 8.74).

The main findings of the empirical study can be summarized in the following categories: the assistance provided by external consultants during the ERP implementation process is essential; knowledge transfer is an extremely significant factor for ERP system success; knowledge transfer concerning technical aspects of ERP systems is more important than effective handling of communication, as well as conflict resolution among organizational members; the role of top management support seems to be of less importance that the one provided by users.

17- Claude Doom Koen Milis Stephan Poelmans Eric Bloemen, (2010),"Critical success factors for ERP implementations in Belgian SMEs".

The purpose of this study is to examine the critical success factors of ERP implementations in Belgian SMEs and to identify those success factors that are specific to a SME environment.

The researcher surveys the literature to discover and classify critical success factors that are potentially applicable to small and medium-sized enterprises. Through a survey and a multiple case study within four Belgian companies, the authors investigate which of these critical success factors apply to SMEs.

The results show that most of the success factors found in the literature apply to SMEs. Nevertheless, distinct differences were found as well. Some factors, such as a clear scope definition and a standardised infrastructure, are not regarded as critical success factors for SMEs. Moreover, SMEs tend to rely relatively heavily on the input of consultants, who they use as a source of knowledge and experience. Moreover, SMEs need to be able to adjust their businesses quickly to be able to exploit their niche to the fullest extent.

The study recommended that particularly important to recognize the elements for a successful ERP implementation.

18- Stuart Maguire Udechukwu Ojiako Al Said, (2010),"ERP implementation in Omantel: a case study".

The purpose of this study is to examine environmental factors that impacted on the adoption of ERP by The Oman Telecommunication Company (Omantel).

A case study methodology is used to study perceptions of the ERP system implementation project in Omantel.

This study highlights the particular problems of large organizations that operate disparate legacy systems. It is very important that experiences of ERP projects are shared across countries and sectors. This is because many ERP implementations are rolled out by multi-national corporations in several countries, often simultaneously. This is one of the few ERP studies that have been conducted by an internal member of staff. In these

situations, it is not just a case of access, but that the respondents feel able to give practical answers.

19- Claude Doom Koen Milis Stephan Poelmans Eric Bloemen, (2010),"Critical success factors for ERP implementations in Belgian SMEs".

The purpose of this paper is to examine the critical success factors of ERP implementations in Belgian SMEs and to identify those success factors that are specific to a SME environment.

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20- Pascal Ravesteyn Ronald Batenburg, (2010),"Surveying the critical success factors of BPM-systems implementation".

The purpose of this paper is to explore if there is a common ground for the definition of business process management (BPM) and BPM-systems, as well as the critical success factors (CSFs) for BPM-system implementation. A BPM-system implementation framework is validated that classifies the CSFs in distinctive domains that can be used for BPM project management and organization.

A meta-analysis of literature was performed to develop a set of statements with regard to the definition, benefits and CSFs of BPM(-system) implementation. Then a survey was conducted among 39 Dutch consultants, developers and end-users of BPM-systems that vary in BPM experience. Through a web-questionnaire, the shared view of the respondents was measured with respect to the definition, benefits and the BPM-system implementation framework.

It appears that different respondent groups share a common view on the definition and benefits of BPM and BPM-systems, regardless their role in the value chain of BPM deployment within organizations. In addition, there is consensus on the CSFs of BPM-system implementation. In particular, it is supported that communication, involvement of stakeholders and governance is critical. Hence, organizations should realize that BPM-system implementation is not mainly an IT-project, but should preferably be initiated by top management.

21- Vathsala Wickramasinghe Vathsala Gunawardena, (2010),"Critical elements that discriminate between successful and unsuccessful ERP implementations in Sri Lanka".

The purpose of this paper is to explore enterprise resource planning (ERP) implementation project performance of successful and unsuccessful implementations; critical elements (CEs) that are conducive to success; and whether implementation project performance and CEs vary across the number of modules implemented, product type, and number of employees affected by the ERP.

Survey research methodology was used and data collected from 74 ERP implementation projects in Sri Lanka. Data were analysed using descriptive statistics, independent sample t-test, one-way analysis of variance (ANOVA), and logistic regression.

ERP implementation project performance significantly differs between successful and unsuccessful implementations. The importance given to CEs of training and education, user involvement, managing user expectations, interdepartmental cooperation, ERP teamwork and team composition, software development, testing and troubleshooting, project management, project champion, BPR and customisation, change management programme and culture, and effective communication significantly differ between successful and unsuccessful implementations. Although ERP implementation project performance does not vary by the number of ERP modules implemented, product type, and number of employees affected by the ERP, several CEs were found to vary by these three contextual variables.

The table (2-7) summarizes the empirical studies of CSFs of ERP implementation.

Table 3-7: summarize the empirical studies of CSFs of ERP implementation

Study	CSFs
Veena Bansal Ankit Agarwal, (2015)	Vendor, Project Management, Support of Top Management, Project Team Competence
Poonam Garg Divya Agarwal , (2014)	Top management commitment, user involvement, business process reengineering, project management, ERP teamwork and composition
Hooshang M. Beheshti Bruce K. Blaylock Dale A. Henderson James G. Lollar, (2014)	Project management, Top Management Support, Interdepartmental communication, User training and education, Change management plan, Vendor support, Business process reengineering
Poonam Garg Atul Garg, (2014)	Top management Support, Business process reengineering, communication plan, Data conversion and accuracy, Education and training, Team composition, Project team competence, Testing and troubleshooting
Poonam Garg Atul Garg, (2013)	Inadequate resources, Poor User involvement, Users' resistance to change, Higher Attrition rate of project team members, Lack of top management commitment, Poor project management, Inadequate project team composition, Ineffective organizational change management, Unrealistic project scheduling, Poor quality of testing
Rupa Mahanti James R. Evans, (2012)	Management commitment and involvement, Selection of control charts, Measurement framework, Availability of data, Identification of CTQs, Knowledge sharing, Training and education, Cultural change, Use of SPC software packages, Project prioritization and definition Teamwork, Use of SPC facilitators

Shahin Dezdar Sulaiman Ainin, (2011)	Project Management, Team Composition & Competence, Business Process Reengineering
Dimitrios Maditinos Dimitrios Chatzoudes Charalampos Tsairidis, (2011)	external consultants, knowledge transfer, knowledge transfer concerning technical aspects of ERP systems, conflict resolution among organizational members, the role of top management support seems to be of less importance that the one provided by users
Shahin Dezdar Sulaiman Ainin, (2011)	Top management support, User training and education, Enterprise-wide communication.
Vathsala Wickramasinghe Vathsala Gunawardena, (2010)	User training and education, User involvement, Managing user expectations, Interdepartmental cooperation, ERP teamwork and composition, Software development, testing and troubleshooting, Project management, Project champion, BPR and customization, Business plan and vision and Top management support
Claude Doom Koen Milis Stephan Poelmans Eric Bloemen, (2010)	Senior management support, User involvement, Effective change management, Internal communication, Supplier management
Pascal Ravesteyn Ronald Batenburg, (2010)	Management of organization and processes, Architecture, Development, Measurement and control and Project and change management

According to the table (2-7), most of studies conducted that Top Management Support is the most important factor in implementing ERP successfully. This is study comes with different out comes as the top management support is important to success the ERP implementation at UNRWA but it's not the importance one as the Data analysis and conversion is the most critical factor for ERP success implementation in UNRWA. This could be justified by UNRWA has a legacy ERP solution and it was critical to convert and analysis the historical data to new ERP system.

Furthermore, this study population was all UNRWA staff member engaged in different stages of ERP implementation process that participate in view accurate results and findings. This would identify uniquely this study comparing with others.

3.8 Chapter Summary:

The chapter provides the theoretical framework and literature reviews about ERP, ERP implementation, SAP implementation, ERP CS, in addition to a brief history about

UNRWA (subject study) and the SAP implantation at UNRWA. Meanwhile, many of previous studies were introduced to compare its findings with this study findings and to see the match points.

The majority on those studies rate the CSF and priorities them. The top rate was Top management support and user training. This will be discussed in chapter four of this study.

Chapter Three: The Research Methodology

4.1 Introduction:

This chapter describes the methodology that was used in this research. The adopted methodology to accomplish this study uses the following techniques: the information about the research design, research population, questionnaire design, statistical data analysis, content validity and pilot study.

4.2 Research Methodology:

The research followed the analytical/descriptive approach in addition to the statistical analysis.

The data were collected from the primary and secondary resources. The secondary resources include the use of books, journals, statistics and web pages. The primary data were collected by using questionnaires that was developed specifically for this research. Many of measurement tools “questionnaires” used by other researchers were adapted, translated, combined and modified to fit the purpose of this research ended up in developing one questionnaire distributed to 200 respondents to collect the primary data, the researcher retrieved 173 out of them.

The methodologies which have been followed by the researcher and which lead to achieve the research objective are shown the flowchart in figure (3.1).

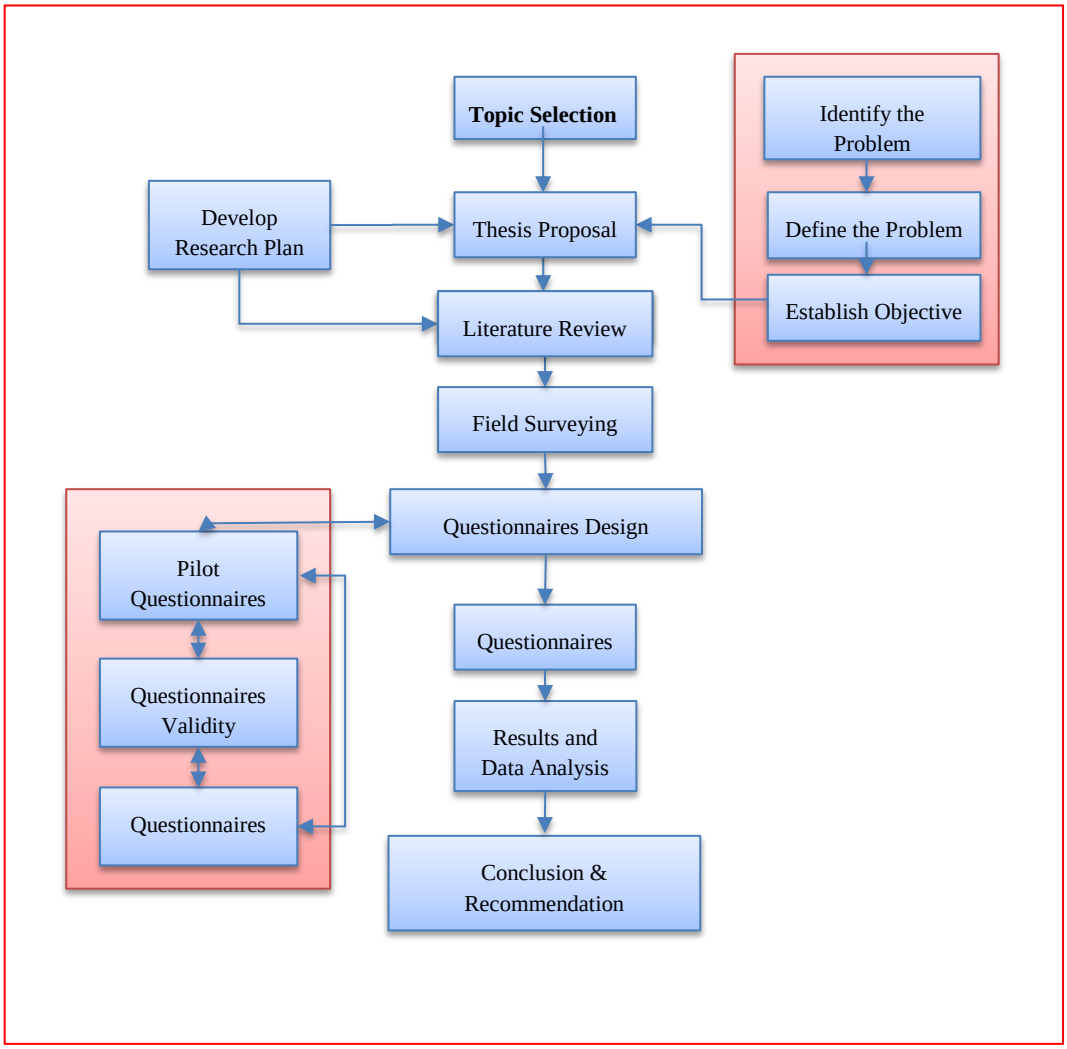

Figure 4-1: Shows the methodology flowchart

4.3 Population and Sample:

The population of research consisted of UNRWA international and local senior staff members who are engaged with ERP system implementation stages. The total number of those staff members is 200 staff. Those staff members are distributed among five operations regions of UNRWA operation. Jordan, Syria, Lebanon, West bank and Gaza strip.

The researcher reaches them even physically or e-mails. The response percentage was 86.5% from population from different field's office and different seniority levels. Table (3-1) shows the population and the response according to UNRWA filed offices.

Table 4-1: The population and the response according to UNRWA filed offices

UNRWA Filed Office	Population	Response	Percentage
Head Quarter	30	26	15.0
Jordan Field Office	30	25	14.5
Gaza Field Office	60	53	30.6
Lebanon Field Office	25	25	14.5
West Bank Field Office	30	22	12.7
Syria Field Office	25	22	12.7
Total	**200**	**173**	**100**

The table (3-2) shows the population response according to the occupation type if it's an international position or local one. Also table (4-3) shows the population response according to occupation level.

Table 4-2: The population and the response according to Occupation Type

Occupation Type	Population	Response	Percentage
International position	30	22	12.7
Local position	170	151	87.3
Total	**200**	**173**	**100**

Table 4-3: The population and the response according to Occupation

Occupation	Population	Response	Percentage
Director	5	1	0.6
Deputy Director	10	5	2.9
Head of department	25	23	13.3
Deputy Head of Department	15	8	4.6
Senior Officer	80	71	41.0
Officer	24	24	13.9
Other	41	41	23.7
Total	**200**	**173**	**100**

The above tables show response according to the UNRWA staff members' position type as at UNRWA has two main categories 12.7% international staff member and 87.3% local staff members and show variously of response due to position title and the level of seniority. It is worth to highlight, that most of response comes from senior office 41% which they are operating the process on the ground and running the business.

4.4 Pilot Study:

A pilot study of 30 respondents for the questionnaire was conducted before collecting the results of the sample. It provided a trial run for the questionnaire, which involves testing the wordings of question, identifying ambiguous questions, testing the techniques that used to collect data, and measuring the effectiveness of standard invitation to respondents.

4.5 Data Measurement:

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. In this research, ordinal scales were used. Ordinal scale is a ranking or a rating data that normally uses integers in ascending or descending order. The numbers assigned to the important (1, 2, 3, 4, 5, 6, 7) do not indicate that the interval between scales are equal, nor do they indicate absolute quantities. They are merely numerical labels. Based on Likert scale we have the following:

Table 4-4: The numbers assigned scale

Item	***Very Strongly agree***	***Strongly agree***	***Agree***	***Do not Know***	***Disagree***	***Strongly Disagree***	***Very Strongly Disagree***
Scale	**7**	**6**	**5**	**4**	**3**	**2**	**1**

The measurement scales that used in research questionnaire were adapted from literature review as are shown in table (3-5).

Table 4-5: Measurement scale references

Variable	Reference
ERP Implementation Evaluation	KONG Jia Hui (2005)
Top Management Support	KONG Jia Hui (2005)
Project Team Competences	Stephen Coady (2014
Training and Education	KONG Jia Hui (2005)
Interdepartmental communication	KONG Jia Hui (2005)
Data analysis and conversion	Researcher development according to literature review

4.6 Statistical Analysis Tools:

The researcher used data analysis both qualitative and quantitative data analysis methods. The Data analysis made utilizing (SPSS 22). The researcher utilizes the following statistical tools:

1. Kolmogorov-Smirnov test of normality.
2. Pearson correlation coefficient for Validity.
3. Cronbach's Alpha for Reliability Statistics.
4. Frequency and Descriptive analysis.
5. Stepwise regression.
6. Parametric Tests (One-sample T test, Independent Samples T-test and Analysis of Variance (ANOVA).

T-test:

T-Test is used to determine if the mean of an item is significantly different from a hypothesized value 4 (Middle value of Likert scale). If the P-value (Sig.) is smaller than or equal to the level of significance, $\alpha = 0.05$, then the mean of an item is significantly different from a hypothesized value 4. The sign of the Test value indicates whether the mean is significantly greater or smaller than hypothesized value 4. On the other hand, if the P-value (Sig.) is greater than the level of significance $\alpha = 0.05$, then the mean an item is insignificantly different from a hypothesized value 4.

The Independent Samples T-test:

The independent sample T-test is used to examine if there is a statistical significant difference between two means among the respondents toward the Critical Success Factors for ERP implementation in UNRWA as a Case Study due to (gender and occupation type).

The One- Way Analysis of Variance (ANOVA):

ANOVA is used to examine if there is a statistical significant difference between several means among the respondents toward the Critical Success Factors for ERP implementation in UNRWA as a Case Study due to (age, qualification, occupation, years of experience and field office).

4.7 Validity of 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. The used measurements was relaying on literature reviews and researcher development as mentioned on data measurement section *(See Appendix 1)*. The questionnaire has been given to (8) referees (*See Appendix 2*) to judge its validity according to its content, the clearness of its items meaning, appropriateness to avoid any misunderstanding and to assure its linkage with the main study aims.

4.7.1 Internal Validity

Internal validity of the questionnaire is the first statistical test that used to test the validity of the questionnaire. It is measured by a scouting sample, which consisted of 30 questionnaires through measuring the correlation coefficients between each item in one field and the whole field.

Table (4-6) clarifies the correlation coefficient for each item of the "Top Management Support (TMS)" 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 items of this field are consistent and valid to be measure what it was set for.

Table 4-6: Correlation coefficient of each item of "Top Management Support (TMS)"

No.	Item	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Top managers willingly assign and invest resources to ERP project as they are needed	.523	0.000*
2.	Top managers mandate ERP requirements' priority over unique functional concerns	.584	0.000*
3.	Top managers are enthusiastic about possibilities of ERP	.504	0.000*
4.	Top managers invested time needed to understand how ERP will benefit the enterprise	.525	0.000*
5.	Top managers personally solve the departmental conflicts in the implementation	.645	0.000*
6.	Top managers are prepared to take the risk and responsibilities of ERP	.576	0.000*
7.	Top managers understand the objectives of ERP	.539	0.000*
8.	Top managers have good knowledge of ERP	.701	0.000*

* Correlation is significant at the 0.05 level

Table (3-7) clarifies the correlation coefficient for each item of the "Project team competence" 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 items of this field are consistent and valid to be measure what it was set for.

Table 4-7: Correlation coefficient of each item of "Project team competence"

No.	Item	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Qualified implantation team.	.282	0.024*
2.	Balanced and empowered implementation team	.638	0.000*
3.	Deep understanding of the key issues relating to ERP implantations	.555	0.000*
4.	Project team includes people experienced in previous implementations	.373	0.004*
5.	Project team includes people with strong knowledge of financial and manufacturing processes	.244	0.046*
6.	Require in-house human resources with large-	.587	0.000*

	scale, enterprise-wide project management skills.		
7.	Selection of the right (i.e. most knowledgeable and dedicated) employees for the ERP project team	.369	0.004*
8.	Utilize outside consultant group only when in-house expertise was not present	.440	0.001*
9.	Value the managerial support provided by the consultant group	.558	0.000*
10.	Value the technical support provided by the consultant group	.428	0.001*

* Correlation is significant at the 0.05 level

Table (3-8) clarifies the correlation coefficient for each item of the " User training and education " 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 items of this field are consistent and valid to measure what it was set for.

Table 4-8: Correlation coefficient of each item of " User training and education"

No.	Item	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Specific user training needs are identified early in the implementation.	.627	0.000*
2.	A formal training program has been developed to meet requirements of ERP	.555	0.000*
3.	Training materials have been customized for each specific job	.592	0.000*
4.	All users related to ERP have been trained in basic ERP system skills	.495	0.000*
5.	Seldom/Occasionally update training materials to reflect systems changes	.402	0.002*
6.	Training materials target the entire business task, not only the ERP screen and reports	.590	0.000*
7.	The time for ERP training is enough for most of the employees	.571	0.000*
8.	Training material had been built by UNRWA functional experts	.436	0.001*

* Correlation is significant at the 0.05 level

Table (3-9) clarifies the correlation coefficient for each item of the "Interdepartmental communication" 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 items of this field are consistent and valid to measure what it was set for.

Table 4-9: Correlation coefficient of each item of "Interdepartmental communication"

No.	Item	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Cross-functional groups meet regularly to discuss new uses for ERP	.472	0.000*
2.	Internal groups meet regularly to share new methods of using ERP.	.743	0.000*
3.	ERP improvement suggestions are regularly collected from multiple employees levels	.323	0.011*
4.	IT staff communicates with functional use groups in the ERP.	.401	0.002*
5.	There is a communication team to solve the departmental conflicts during the implementation.	.584	0.000*
6.	Employees understand how their actions impact operations of other functional areas	.512	0.000*

* Correlation is significant at the 0.05 level

Table (3-10) clarifies the correlation coefficient for each item of the "Data analysis and conversion" 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 items of this field are consistent and valid to measure what it was set for.

Table 4-10: Correlation coefficient of each item of "Data analysis and conversion"

No.	Item	Pearson Correlation Coefficient	P-Value (Sig.)
1.	A clear plan was provided to how the process would be for data analysis and conversion	.283	0.023*
2.	The data that need to be converted had been identify	.566	0.000*
3.	An expert team had been selected from UNRWA for this mission	.463	0.000*

4.	An enough time provided for data perpetration and converting	.412	0.001*
5.	All the data had been passed the Data Cleansing stage	.364	0.005*
6.	The data had been uploaded are tested and checked by related departments before go-live	.348	0.007*

* Correlation is significant at the 0.05 level

Table (3-11) clarifies the correlation coefficient for each item of the "ERP Implementation Evaluation" 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 items of this field are consistent and valid to measure what it was set for.

Table 4-11: Correlation coefficient of each item of "ERP Implementation Evaluation"

No.	Item	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Overall, ERP implementation is successful	.588	0.000*
2.	Overall, ERP software vendors are responsive to business need	.313	0.013*
3.	ERP implementation has realized the expectation for its benefits to Business	.561	0.000*
4.	UNRWA productivity is improved after using ERP	.270	0.029*
5.	Business operational efficiency has been improved after using ERP	.390	0.003*
6.	Business processes have been rationalized through use of ERP	.367	0.005*
7.	The business process dependent on ERP after implementation	.267	0.035*
8.	ERP is integrated in the whole business process	.336	0.009*
9.	ERP system is easy to operate and user friendly	.367	0.004*
10.	Business benefits have been realized from reengineered ERP processes	.429	0.001*

* Correlation is significant at the 0.05 level

4.7.2 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 field and the validity of the whole

questionnaire. It measures the correlation coefficient between one field and all the fields of the questionnaire that have the same level of liker scale.

Table (3-12) 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 4-12: Correlation coefficient of each field and the whole of questionnaire

No.	Field	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Top Management Support (TMS)	.788	0.000*
2.	Project team competence	.864	0.000*
3.	User training and education	.737	0.000*
4.	Interdepartmental communication	.713	0.000*
5.	Data analysis and conversion	.642	0.000*
	Critical Success Factors	**.972**	**0.000***
	ERP Implementation Evaluation	**.574**	**0.000***

* Correlation is significant at the 0.05 level

4.8 Reliability of the Research:

The reliability of an instrument is the degree of consistency which measures the attribute; it is supposed to be measuring (George and Mallery, 2006). The less variation an instrument produces in repeated measurements of an attribute, the higher its reliability. Reliability can be equated with the stability, consistency, or dependability of a measuring tool. The test is repeated to the same sample of people on two occasions and then compares the scores obtained by computing a reliability coefficient (George and Mallery, 2006). To insure the reliability of the questionnaire, Cronbach's Coefficient Alpha should be applied.

4.9 Cronbach's Coefficient Alpha:

Cronbach's alpha (George D. & Mallery P, 2006) is designed as a measure of internal consistency, that is, do all items within the instrument measure the same thing? 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 (3-13) 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 0.658 and 0.769. This range is considered high; the result ensures the reliability of each field of the questionnaire. Cronbach's Alpha equals 0.683 for the entire questionnaire which indicates an excellent reliability of the entire questionnaire.

Table 4-13: Cronbach's Alpha for each field of the questionnaire

No.	Field	Cronbach's Alpha
1.	Top Management Support (TMS)	0.761
2.	Project team competence	0.769
3.	User training and education	0.746
4.	Interdepartmental communication	0.658
5.	Data analysis and conversion	0.671
	ERP Implementation Evaluation	**0.683**

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

4.10 Chapter Summary:

This chapter presented complete description of the methodology used to achieve the aim of the study, the population and the sample of the study, the procedure of designing and applying the study tool, detailed description of the research tool, test validity and reliability of questionnaire the statistical techniques that the researcher adopted in analyzing the collected data and examination of the research.

The chapter also included different tables which showed the sample distribution according the variable of the study and the normal distribution of the sample has been confirmed by using One-Sample Kolmogorov-Smirnov Test. A sample of 30 participants was used as a pilot study to determine the validity and reliability of the tool of the study content validity was approved by introducing the tool to a panel of eight experts (see Annex 1).

Internal consistency was approved by using Pearson correlation coefficient and reliability determined by using split- half method and Cronbach alpha formulas. The results show that all Pearson, split half and Cronbach alpha coefficients are high, which indicated that study tool was highly consistent and reliable.

Chapter Four will be mainly concerned with introducing the study results in a form of statistical tables. Those will be discussed and interpreted with the results relatedness to those of previous studies and the recommendations will be extracted from the study results.

Chapter Four: Data Analysis and Discussion

5.1 Introduction:

This chapter represents the research findings and the statistical analysis of the data collected as part of this study. The purpose of this chapter is to provide a comprehensive overview of the entire data set collected and the characteristics of the respondents. In addition, it serves to describe the statistical procedures applied to the data in order to interpret and apply the data to the research questions.

5.2 Test of Normality:

The One-Sample Kolmogorov-Smirnov test procedure compares the observed cumulative distribution function for a variable with a specified theoretical distribution, which may be normal, uniform, Poisson, or exponential. The Kolmogorov-Smirnov Z is computed from the largest difference (in absolute value) between the observed and theoretical cumulative distribution functions. This goodness-of-fit test tests whether the observations could reasonably have come from the specified distribution. Many parametric tests require normally distributed variables. The one-sample Kolmogorov-Smirnov test can be used to test that a variable of interest is normally distributed (Henry, C. and Thode, Jr., 2002).

Table (4-1) shows the results for Kolmogorov-Smirnov test of normality. The p-value for each variable is greater than 0.05 level of significance, then the distributions for

these variables are normally distributed. Consequently, parametric tests should be used to perform the statistical data analysis.

Table 5-1: Kolmogorov-Smirnov test

Field	Kolmogorov-Smirnov	
	Statistic	**P-value**
Top Management Support (TMS)	1.094	0.183
Project team competence	0.862	0.447
User training and education	0.783	0.572
Interdepartmental communication	0.996	0.275
Data analysis and conversion	1.123	0.160
Critical Success Factors	1.082	0.192
ERP Implementation Evaluation	0.558	0.915
All items of the questionnaire	**0.921**	**0.364**

5.3 Analysis of Personal Information:

The researcher calculated frequencies and percentage of the sample (N=173) according to the variable of the research as shown in the following tables.

The table (4-2) shows that numbers of male are 144 persons 83.2% from the sample and 29 persons are female 16.8% of the research sample.

Table 5-2: The population response according to gender

Gender	Frequency	Percent
Male	144	83.2
Female	29	16.8
Total	173	100

Table (4-3) shows that 4.6% of the sample is less than 30 years old, 19.7% are 30-40 years old, 56.1% are 40-50 years old, and 19.7% of the sample are more than 50 years old

Table 5-3: The population response according to age

Age	Frequency	Percent
Less than 30 years	8	4.6
Between 30 and 40 years	34	19.7
Between 40 and 50 years	97	56.1
Between 50 and 60 years	34	19.7
Total	173	100

Table (4-4) shows that 4% of the sample is Diploma degree holder and 61.8% are Bachelor degree holder, 29.5 are Master degree holder and 4.6% are PhD degree holder.

Table 5-4: The population response according to qualification

Qualification	Frequency	Percent
Diploma	7	4.0
Bachelor	107	61.8
Master	51	29.5
PhD	8	4.6
Total	**173**	**100**

The table (4-5) below shows the response according to the UNRWA staff members' position type as at UNRWA has two main categories 12.7% international staff member and 87.3% local staff members.

Table 5-5: The population response according to UNRWA staff members' position type

Occupation Type	Frequency	Percent
International position	22	12.7
Local position	151	87.3
Total	**173**	**100**

The table (4-6) below shows the response according to the UNRWA staff members' positions titles

Table 5-6: The population response according to UNRWA staff members' positions

Occupation	Frequency	Percent
Director	1	0.6
Deputy Director	5	2.9
Head of department	23	13.3
Deputy Head of Department	8	4.6
Senior Officer	71	41.0
Officer	24	13.9
Other	41	23.7
Total	**173**	**100**

Table (4-7) shows that 1.2% of the sample is less than 3 years of experience, 9.2% are from 3-5 years of experience, 49.7% are between 5-10 years of experience, and 39.9 are more than 10 years of experience.

Table 5-7: The population response according to years of experience

Years of Experience	Frequency	Percent
Between 1-3 years	2	1.2
Between 3-5 years	16	9.2
Between 5-10 years	86	49.7
More than 10 years	69	39.9
Total	**173**	**100**

The table (4-8) below shows the response according to the UNRWA filed offices and headquarters in operation region/area. 15% are from UNRWA Head Quarter, 14.5% are from Jordan Field office, 30.6 are from Gaza filed office, 14.5% are from Lebanon filed office, 12.7 are from West bank filed office and 12.7% are from Syria office.

Table 5-8: The population response according to UNRWA filed offices

UNRWA Filed Office	Frequency	Percent
Head Quarter	26	15.0
Jordan Field Office	25	14.5
Gaza Field Office	53	30.6
Lebanon Field Office	25	14.5
West Bank Field Office	22	12.7
Syria Field Office	22	12.7
Total	**173**	**100**

The findings of the analysis of personal information are: the response of male is higher than female as the number of male UNRWA staff members is higher that female even UNRWA is a gender balance work environment.

The response due to age indicates that UNRWA staff members whom their age is between 40-50 are the highest in the seniority level. In addition, the higher qualification is BA holder from the response.

The response is high according to type of occupation as local staff member is much more international one. Furthermore, the most of response comes from senior officers as this position includes the highest staff number cross UNRWA in senior level. This also clarify why the highest response due to years of experience are between 5 to 10 years.

Lastly, the high response due to the field office comes from Gaza field office as the field includes the maximum number of staff members cross whole URNWA field offices.

5.4 Descriptive Analysis:

The questioner includes six domains to be measured. Through this section, each domain will be analyzed separately to be measured.

5.4.1 Top Management Support (TMS):

The researcher used one sample T.test and calculated mean, standard deviation, relative weight and rank of the scores of research sample one each item and total degree of first domain in order to answer the sub question as shown in table (4-9) and the results as following:

The mean of item #8 "Top managers have good knowledge of ERP" equals 5.48 (78.32%), Test-value = 17.94, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this item is significantly greater than the hypothesized value 4. We conclude that the respondents agreed to this item.

The mean of item #1 "Top managers willingly assign and invest resources to ERP project as they are needed" equals 4.95 (70.69%), Test-value = 16.31, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this item is significantly greater than the hypothesized value 4. We conclude that the respondents agreed to this item.

The mean of the field "Top Management Support (TMS)" equals 5.24 (74.82%), Test-value = 30.31, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater

than the hypothesized value 4. We conclude that the respondents agreed to field of "Top Management Support (TMS)".

Thus, the result in this section support (H1a) Top Management Support (TMS) affect significantly and positively the success of ERP implementation and one of the important critical success factors of implementing ERP system successfully at UNRWA.

The result obtained above agree with most of previous studies which in this regards like Raafat Saade Harshjot Nijher (2016), Ali Tarhini, Hussain Ammar, Takwa Tarhini& Ra'ed Masa'deh (2015) and Poonam Garg Divya Agarwal (2014) which considers TMS one of the most important factors for success implementation.

Table 5-9: Means and Test values for "Top Management Support (TMS)"

No	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Top managers willingly assign and invest resources to ERP project as they are needed	4.95	0.76	70.69	16.31	0.000*	8
2.	Top managers mandate ERP requirements' priority over unique functional concerns	5.08	0.79	72.58	18.04	0.000*	6
3.	Top managers are enthusiastic about possibilities of ERP	5.05	0.95	72.09	14.48	0.000*	7
4.	Top managers invested time needed to understand how ERP will benefit the enterprise	5.16	1.10	73.66	13.87	0.000*	5
5.	Top managers personally solve the departmental conflicts in the implementation	5.31	1.06	75.83	16.16	0.000*	4
6.	Top managers are prepared to take the risk and responsibilities of ERP	5.42	1.10	77.44	16.89	0.000*	3
7.	Top managers understand the objectives of ERP	5.46	1.08	77.94	17.63	0.000*	2
8.	Top managers have good knowledge of ERP	5.48	1.08	78.32	17.94	0.000*	1
	All items of the field	**5.24**	**0.54**	**74.82**	**30.31**	**0.000***	

* The mean is significantly different from 4

5.4.2 Project Team Competence:

The researcher used one sample T.test and calculated mean, standard deviation, relative weight and rank of the scores of research sample one each item and total degree of second domain in order to answer the sub question as shown in table (4-10) and the results as following:

The mean of item #10 "Value the technical support provided by the consultant group" equals 5.59 (79.85%), Test-value = 20.22 and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this item is significantly greater than the hypothesized value 4. We conclude that the respondents agreed to this item.

The mean of item #1 "Qualified implantation team" equals 5.17 (73.91%), Test-value = 15.22, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this item is significantly greater than the hypothesized value 4. We conclude that the respondents agreed to this item.

The mean of the field "Project team competence" equals 5.35 (76.47%), Test-value = 38.09, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 4. We conclude that the respondents agreed to field of "Project team competence ".

Thus, the result in this section support (H1b) Project team competence affect significantly and positively the success of ERP implementation and one of the important critical success factors that participate in implementing ERP system successfully at UNRWA.

The result obtained above agrees with Alberto Felice De Toni Andrea Fornasier Fabio Nonino (2015) which states that Project team competency even more important factor than TMS. Also most of previous studies in this regards like Raafat Saade Harshjot Nijher (2016), Ali Tarhini, Hussain Ammar, Takwa Tarhini& Ra'ed Masa'deh (2015) and Poonam Garg Divya Agarwal (2014) considers team competence one of the most important factors for success implementation.

Table 5-10: Means and Test values for "Project team competence"

No	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Qualified implantation team.	5.17	1.01	73.91	15.22	0.000*	10
2.	Balanced and empowered implementation team	5.27	0.85	75.23	19.63	0.000*	9
3.	Deep understanding of the key issues relating to ERP implantations	5.43	1.04	77.57	18.07	0.000*	2
4.	Project team includes people experienced in previous implementations	5.31	0.98	75.91	17.54	0.000*	6
5.	Project team includes people with strong knowledge of financial and manufacturing processes	5.27	1.01	75.25	16.49	0.000*	8
6.	Require in-house human resources with large-scale, enterprise-wide project management skills.	5.31	1.02	75.91	16.84	0.000*	6
7.	Selection of the right (i.e. most knowledgeable and dedicated) employees for the ERP project team	5.33	1.07	76.16	16.39	0.000*	5
8.	Utilize outside consultant group only when in-house expertise was not present	5.43	1.04	77.54	18.04	0.000*	3
9.	Value the managerial support provided by the consultant group	5.41	1.08	77.31	17.04	0.000*	4
10.	Value the technical support provided by the consultant group	5.59	1.03	79.85	20.22	0.000*	1
	All items of the field	**5.35**	**0.47**	**76.47**	**38.09**	**0.000***	

* The mean is significantly different from 4

5.4.3 User Training and Education:

The researcher used one sample T.test and calculated mean, standard deviation, relative weight and rank of the scores of research sample one each item and total degree of third domain in order to answer the sub question as shown in table (4-11) and the results as following:

The mean of item #8 "Training material had been built by UNRWA functional experts" equals 5.61 (80.10%), Test-value = 21.69, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this item is significantly greater than the hypothesized value 4. We conclude that the respondents agreed to this item.

The mean of item #1 "Specific user training needs are identified early in the implementation" equals 4.82 (68.87%), Test-value = 15.89, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this item is significantly greater than the hypothesized value 4. We conclude that the respondents agreed to this item.

The mean of the field "User training and education" equals 5.29 (75.63%), Test-value = 30.90, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 4. We conclude that the respondents agreed to field of "User training and education ".

Thus, the result in this section support (H1c) User training and education affect significantly and positively the success of ERP implementation and one of the important critical success factors that participate in implementing ERP system successfully at UNRWA.

The result obtained above agreed with Dimitrios Maditinos Dimitrios Chatzoudes Charalampos Tsairidis, (2011) which state that knowledge transfer is an extremely significant factor for ERP system success; knowledge transfer concerning technical aspects of ERP systems is more important than effective handling of communication.

Table 5-11: Means and Test values for "User training and education"

No	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Specific user training needs are identified early in the implementation.	4.82	0.68	68.87	15.89	0.000*	8
2.	A formal training program has been developed to meet requirements of ERP	5.18	0.76	74.07	20.64	0.000*	7
3.	Training materials have been customized for each specific job	5.25	0.98	75.02	16.75	0.000*	6
4.	All users related to ERP have been trained in basic ERP system skills	5.32	0.94	75.94	18.38	0.000*	4
5.	Seldom/Occasionally update training materials to reflect systems changes	5.48	1.09	78.28	17.91	0.000*	2
6.	Training materials target the entire business task, not only the ERP screen and reports	5.42	1.05	77.37	17.82	0.000*	3
7.	The time for ERP training is enough for most of the employees	5.30	1.21	75.66	14.07	0.000*	5
8.	Training material had been built by UNRWA functional experts	5.61	0.97	80.10	21.69	0.000*	1
	All items of the field	**5.29**	**0.55**	**75.63**	**30.90**	**0.000***	

* The mean is significantly different from 4

5.4.4 Interdepartmental Communication:

The researcher used one sample T.test and calculated mean, standard deviation, relative weight and rank of the scores of research sample one each item and total degree of fourth domain in order to answer the sub question as shown in table (4-12) and the results as following:

The mean of item #6 “Employees understand how their actions impact operations of other functional areas” equals 5.51 (78.65%), Test-value = 18.89, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this item is significantly greater than the hypothesized value 4. We conclude that the respondents agreed to this item.

The mean of item #1 “Cross-functional groups meet regularly to discuss new uses for ERP” equals 5.23 (74.73%), Test-value = 17.18, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this item is significantly greater than the hypothesized value 4. We conclude that the respondents agreed to this item.

The mean of the field “Interdepartmental communication” equals 5.33 (76.18%), Test-value = 30.54, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 4. We conclude that the respondents agreed to field of “Interdepartmental communication ".

Thus, the result in this section support (H1d) Interdepartmental communication affect significantly and positively the success of ERP implementation and one of the important critical success factors that participate in implementing ERP system successfully at UNRWA.

The result obtained above agree with most of previous studies which in this regards like Raafat Saade Harshjot Nijher (2016), Ali Tarhini, Hussain Ammar, Takwa Tarhini& Ra’ed Masa’deh (2015) and Poonam Garg Divya Agarwal (2014) which considers Interdepartmental communication one of the most important 22 CSF for success implementation.

Table 5-12: Means and Test values for "Interdepartmental communication"

No	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Cross-functional groups meet regularly to discuss new uses for ERP	5.23	0.94	74.73	17.18	0.000*	6
2.	Internal groups meet regularly to share new methods of using ERP.	5.34	0.90	76.25	19.49	0.000*	3
3.	ERP improvement suggestions are regularly collected from multiple employees levels	5.25	0.90	75.06	18.37	0.000*	5
4.	IT staff communicates with functional use groups in the ERP.	5.31	1.05	75.81	16.40	0.000*	4
5.	There is a communication team to solve the departmental conflicts during the implementation.	5.36	1.05	76.63	17.07	0.000*	2
6.	Employees understand how their actions impact operations of other functional areas	5.51	1.05	78.65	18.89	0.000*	1
	All items of the field	**5.33**	**0.57**	**76.18**	**30.54**	**0.000***	

* The mean is significantly different from 4

5.4.5 Data Analysis and Conversion:

The researcher used one sample T.test and calculated mean, standard deviation, relative weight and rank of the scores of research sample one each item and total degree of fifth domain in order to answer the sub question as shown in table (4-13) and the results as following:

The mean of item #6 "The data had been uploaded are tested and checked by related departments before go-live" equals 5.50 (78.61%), Test-value = 19.70, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this item is significantly greater than the hypothesized value 4. We conclude that the respondents agreed to this item.

The mean of item #1 “A clear plan was provided to how the process would be for data analysis and conversion” equals 4.95 (70.77%), Test-value = 12.28, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this item is significantly greater than the hypothesized value 4. We conclude that the respondents agreed to this item.

The mean of the field “Data analysis and conversion” equals 5.27 (75.35%), Test-value = 30.36, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 4. We conclude that the respondents agreed to field of “Data analysis and conversion ".

Thus, the result in this section support (H1c) Data Analysis and Conversion affect significantly and positively the success of ERP implementation and one of the important critical success factors that participate in implementing ERP system successfully at UNRWA

The result obtained above agree with most of previous studies which in this regards like Raafat Saade Harshjot Nijher (2016), Ali Tarhini, Hussain Ammar, Takwa Tarhini& Ra’ed Masa’deh (2015) and Poonam Garg Divya Agarwal (2014) which considers Data Analysis and Conversion one of the important 22 CSF for success ERP implementation.

Table 5-13: Means and Test values for "Data analysis and conversion"

NO	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	A clear plan was provided to how the process would be for data analysis and conversion	4.95	1.02	70.77	12.28	0.000*	6
2.	The data that need to be converted had been identify	5.16	0.90	73.68	16.76	0.000*	5
3.	An expert team had been selected from UNRWA for this mission	5.31	0.94	75.88	18.13	0.000*	4
4.	An enough time provided for data perpetration and converting	5.32	1.03	75.94	16.60	0.000*	3
5.	All the data had been passed the Data Cleansing stage	5.42	1.10	77.36	16.83	0.000*	2
6.	The data had been uploaded are tested and checked by related departments before go-live	5.50	1.00	78.61	19.70	0.000*	1
	All items of the field	**5.27**	**0.55**	**75.35**	**30.36**	**0.000***	

* The mean is significantly different from 4

5.4.6 ERP Implementation Evaluation:

The researcher used one sample T.test and calculated mean, standard deviation, relative weight and rank of the scores of research sample one each item and total degree of sixth domain in order to answer the sub question as shown in table (4-14) and the results as following:

The mean of item #10 "Business benefits have been realized from reengineered ERP processes" equals 5.80 (82.82%), Test-value = 22.62, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this item is significantly greater than the hypothesized value 4. We conclude that the respondents agreed to this item.

The mean of item #3 "ERP implementation has realized the expectation for its benefits to Business" equals 5.19 (74.11%), Test-value = 15.11, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the

mean of this item is significantly greater than the hypothesized value 4. We conclude that the respondents agreed to this item.

The mean of the field "ERP Implementation Evaluation" equals 5.45 (77.85%), Test-value = 39.79, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 4. We conclude that the respondents agreed to field of "ERP Implementation Evaluation ".

Table 5-14: Means and Test values for "ERP Implementation Evaluation"

NO	Item	Mean	S.D	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Overall, ERP implementation is successful	5.27	0.97	75.31	17.22	0.000*	9
2.	Overall, ERP software vendors are responsive to business need	5.55	0.85	79.32	24.05	0.000*	3
3.	ERP implementation has realized the expectation for its benefits to Business	5.19	1.01	74.11	15.11	0.000*	10
4.	UNRWA productivity is improved after using ERP	5.30	0.90	75.66	18.80	0.000*	8
5.	Business operational efficiency has been improved after using ERP	5.40	1.00	77.14	18.26	0.000*	6
6.	Business processes have been rationalized through use of ERP	5.51	0.95	78.70	20.53	0.000*	4
7.	The business process dependent on ERP after implementation	5.57	1.01	79.54	20.18	0.000*	2
8.	ERP is integrated in the whole business process	5.39	1.01	77.03	17.95	0.000*	7
9.	ERP system is easy to operate and user friendly	5.51	0.97	78.70	20.37	0.000*	5
10.	Business benefits have been realized from reengineered ERP processes	5.80	1.05	82.82	22.62	0.000*	1
	All items of the field	5.45	0.48	77.85	39.79	0.000*	

* The mean is significantly different from 4

Relaying on that we can conclude that the respondents agreed on ERP had been implemented successfully in UNRWA. This is show that Business benefits have been realized from reengineered ERP processes and UNRWA reached the expected results from

ERP system implementation. All the critical success factors which mentioned in this research provide a success for ERP implementation.

5.4.7 The Relationship between Critical Success Factors and ERP Success:

The Table (4-15) shows that the correlation coefficient between Critical Success Factors and ERP implementation in UNRWA equals 0.663 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at $\alpha = 0.05$.

Table 5-15: Correlation coefficient between Critical Success Factors and ERP implementation in UNRWA

Domain	Pearson Correlation Coefficient	P-Value (Sig.)
Relationship between Top Management Support (TMS) and ERP implementation in UNRWA	**.489**	0.000*
Relationship between Project team competence and ERP implementation in UNRWA	**.560**	0.000*
Relationship between User training and education and ERP implementation in UNRWA	**.532**	0.000*
Relationship between Interdepartmental communication and ERP implementation in UNRWA	**.548**	0.000*
Relationship between Data analysis and conversion and ERP implementation in UNRWA	**.578**	0.000*
Relationship between Critical Success Factors and ERP implementation in UNRWA	**.663**	0.000*

* Correlation is statistically significant at 0.05 levels

According to table above, we conduct that there is a significant relationship between Critical Success Factors and ERP implementation. Meanwhile, we need to a deeply understand of which of those CSF's is more effective on ERP success implementation at UNRWA. To each this the researcher used use Stepwise regression, and obtains the following results:

Table (4-16) shows the Analysis of Variance for the regression model. F=45.047, Sig. = 0.000, so there is a significant relationship between the dependent variable ERP implementation in UNRWA and the independent variables " Data analysis and conversion, Interdepartmental communication and Project team competence ".

Table (4-16) shows the Multiple correlation coefficient R =0.667 and R-Square = 0.444. This means 44.4% of the variation in ERP implementation in UNRWA is explained by Data analysis and conversion, Interdepartmental communication and Project team competence.

Based on Stepwise regression method, the variables " Top Management Support (TMS) and User training and education" have insignificant effect on ERP Success implementation.

The estimated regression equation is: ***ERP implementation in UNRWA = 1.659+ 0.249* (Data analysis and conversion) + 0.227* (Interdepartmental communication) + 0.236* (Project team competence).***

The estimated regression equation is used to predict the value of ERP implementation in UNRWA for any give values (responses) to the independent variables "Data analysis and conversion, Interdepartmental communication and Project team competence ".

Table 5-16: Result of Stepwise regression analysis

Variable	B	T	Sig.	R	R-Square	F	Sig.
(Constant)	1.659	4.935	0.000*	.667	0.444	45.047	0.000**
Data analysis and conversion	0.249	3.696	0.000*				
Interdepartmental communication	0.227	3.834	0.000*				
Project team competence	0.236	2.937	0.004*				

* The variable is statistically significant at 0.05 levels

* * The relationship is statistically significant at 0.01 levels

Thus, the result in this section support the first hypothesis partially and found Data analysis and conversion, Interdepartmental communication and Project team competence affect significantly and positively the success of ERP implementation .

The results obtained above are partially agreed with the most of previous studies like Raafat Saade Harshjot Nijher (2016), Ali Tarhini, Hussain Ammar, Takwa Tarhini& Ra'ed Masa'deh (2015) and Poonam Garg Divya Agarwal (2014) as they ranked TMS as the first CSF in ERP success implementation which is not the result at UNRWA case study.

Furthermore, the results obtained above agree with Alberto Felice De Toni Andrea Fornasier Fabio Nonino (2015) which states that Project team competency even more important factor than TMS. Also, the results agree with Shashank Saini Siddhartha Nigam Subhas C. Misra (2013) which conducted data analysis and conversion as one of the up CSF to success ERP implementation.

5.5 Differences in Response due to Study Personal Characteristics:

This section the researcher analysis the differences in the response of sample due to personal characteristics like gender, age, qualification, occupation, year of experience and field office.

5.5.1 The Differences in the Responses due to gender:

Table (4-17) shows that the p-value (Sig.) is smaller than the level of significance $\alpha = 0.05$ for the fields "User training and education, Interdepartmental communication, Data analysis and conversion and Critical Success Factors", then there is significant difference among the respondents toward this fields due to gender. We conclude that the personal characteristics' gender has an effect on this field.

For the other fields, the p-value (Sig.) is greater than the level of significance α = 0.05, then there is insignificant difference among the respondents toward these fields due to gender. We conclude that the personal characteristics' gender has no effect on the other fields.

Table 5-17: Independent Samples T-test of the fields and their p-values for gender

No.	Field	Means		Test Value	Sig.
		Male	Female		
1.	Top Management Support (TMS)	5.28	5.01	2.022	0.051
2.	Project team competence	5.39	5.18	1.574	0.125
3.	User training and education	5.35	5.04	2.070	0.046*
4.	Interdepartmental communication	5.39	5.06	2.306	0.027*
5.	Data analysis and conversion	5.32	5.03	2.047	0.049*
	Critical Success Factors	**5.35**	**5.07**	**2.332**	**0.026***
	ERP Implementation Evaluation	**5.46**	**5.41**	**0.432**	**0.668**
	All items of the questionnaire	**5.37**	**5.14**	**2.035**	**0.050**

* The mean difference is significant a 0.05 level

Thus, the result in this section doesn't support (H2a) as there is a significant difference among participants response due to gender.

The differences appeared in User training and education, Interdepartmental communication and Data analysis and conversion which is natural as the gender is playing an important role regarding knowledge transfer and the same role in the communication. For data analysis and conversion as females were prefer much data to be converted than males which also due to the natural of gender and their ability and motivation to work.

5.5.2 The Differences in the Responses due to Age:

Table (4-18) shows that the p-value (Sig.) is smaller than the level of significance α = 0.05 for the field "User training and education", then there is significant difference

among the respondents toward this field due to age. We conclude that the personal characteristics' age has an effect on this field.

For the other fields, the p-value (Sig.) is greater than the level of significance α = 0.05, then there is insignificant difference among the respondents toward these fields due to age. We conclude that the personal characteristics' age has no effect on the other fields.

Thus, the result in this section support (H2b) as there is no significant difference among participants response due to Age.

Table 5-18: ANOVA test of the fields and their p-values for age

No.	Field	Means			Test Value	Sig.
		Less than 40 years	Between 40 and 50 years	Between 50 and 60 years		
1.	Top Management Support (TMS)	5.11	5.28	5.28	1.606	**0.204**
2.	Project team competence	5.26	5.35	5.47	1.910	**0.151**
3.	User training and education	5.12	5.33	5.40	3.132	**0.046***
4.	Interdepartmental communication	5.28	5.31	5.46	1.110	**0.332**
5.	Data analysis and conversion	5.25	5.25	5.37	0.576	**0.563**
	Critical Success Factors	5.20	5.31	5.40	2.080	**0.128**
	ERP Implementation Evaluation	5.38	5.47	5.49	0.704	**0.496**
	All items of the questionnaire	**5.24**	**5.34**	**5.42**	**1.920**	**0.150**

* The mean difference is significant a 0.05 level

For the field "User training and education", The mean for the category " Between 50 and 60 years" respondents have the highest among the other age category, then we conclude that the category " Between 50 and 60 years" respondents is agreed much more than the other age category. Which indicate that ERP required high level of experience to get engage with the system. This justify why the higher aged of UNRWA staff members agreed more than other on the training and knowledge transfer.

5.5.3 The Differences in the Responses due to Qualification:

Table (4-19) shows that the p-value (Sig.) is smaller than the level of significance $\alpha = 0.05$ for the field "ERP Implementation Evaluation", then there is significant difference among the respondents toward this field due to qualification. We conclude that the personal characteristics' qualification has an effect on this field.

For the field "ERP Implementation Evaluation", The mean for the category " Bachelor " respondents have the highest among the other qualification category, then we conclude that the category " Bachelor " respondents is agreed much more than the other qualification category. This is justified by the most of UNRWA staff members hold a bachelor degree as mentioned on section 4.3 of this study.

For the other fields, the p-value (Sig.) is greater than the level of significance $\alpha = 0.05$, then there is insignificant difference among the respondents toward these fields due to qualification. We conclude that the personal characteristics' qualification has no effect on the other fields.

Thus, the result in this section support (H2c) as there is no significant difference among participants response due to qualification.

Table 5-19: ANOVA test of the fields and their p-values for qualification

No.	Field	Means			Test Value	Sig.
		Diploma	Bachelor	Master/ PhD		
1.	Top Management Support (TMS)	5.16	5.31	5.11	2.942	**0.055**
2.	Project team competence	5.34	5.41	5.25	2.074	**0.129**
3.	User training and education	5.23	5.31	5.27	0.145	**0.865**
4.	Interdepartmental communication	4.83	5.34	5.38	2.890	**0.058**
5.	Data analysis and conversion	4.90	5.33	5.23	2.288	**0.105**
	Critical Success Factors	5.13	5.35	5.24	1.663	**0.193**
	ERP Implementation Evaluation	5.06	5.50	5.41	3.077	**0.049***
	All items of the questionnaire	**5.12**	**5.38**	**5.28**	**2.074**	**0.129**

* The mean difference is significant a 0.05 level

5.5.4 The Differences in the Responses due to Occupation Type:

Table (4-20) shows that the p-value (Sig.) is greater than the level of significance α = 0.05 for each field, then there is insignificant difference among the respondents toward each field due to occupation type. We conclude that the personal characteristics' occupation type has no effect on each field.

Thus, the result in this section support (H2d) as there is no significant difference among participants response due to occupation type.

Table 5-20: Independent Samples T-test of the fields and their p-values for occupation type

No.	Field	Means		Test Value	Sig.
		International position	Local position		
1.	Top Management Support (TMS)	5.15	5.25	-0.782	**0.435**
2.	Project team competence	5.28	5.36	-0.733	**0.465**
3.	User training and education	5.36	5.28	0.630	**0.529**
4.	Interdepartmental communication	5.27	5.34	-0.526	**0.600**
5.	Data analysis and conversion	5.22	5.28	-0.498	**0.619**
	Critical Success Factors	5.26	5.31	-0.464	**0.643**
	ERP Implementation Evaluation	5.50	5.44	0.533	**0.595**
	All items of the questionnaire	**5.31**	**5.33**	**-0.255**	**0.799**

5.5.5 The Differences in the Responses due to Occupation:

Table (4-21) shows that the p-value (Sig.) is greater than the level of significance α = 0.05 for each field, then there is insignificant difference among the respondents toward each field due to occupation. We conclude that the personal characteristics' occupation has no effect on each field.

Thus, the result in this section support (H2e) as there is no significant difference among participants response due to occupation.

Table 5-21: ANOVA test of the fields and their p-values for occupation

No.	Field	Means					Test Value	Sig.
		Director/ Deputy Director	Head of department/ Deputy Head of Department	Senior Officer	Officer	Other		
1.	Top Management Support (TMS)	5.08	5.24	5.26	5.10	5.30	0.670	**0.614**
2.	Project team competence	5.08	5.30	5.39	5.30	5.40	0.885	**0.474**
3.	User training and education	5.19	5.34	5.27	5.16	5.39	0.787	**0.535**
4.	Interdepartmental communication	4.89	5.37	5.34	5.30	5.37	0.996	**0.412**
5.	Data analysis and conversion	5.00	5.28	5.28	5.21	5.33	0.552	**0.698**
	Critical Success Factors	5.07	5.30	5.31	5.22	5.36	0.888	**0.473**
	ERP Implementation Evaluation	5.08	5.56	5.45	5.36	5.47	1.568	**0.185**
	All items of the questionnaire	**5.07**	**5.36**	**5.34**	**5.25**	**5.39**	**1.057**	**0.380**

5.5.6 The Differences in the Responses due to Years of Experience:

Table (4-22) shows that the p-value (Sig.) is greater than the level of significance α = 0.05 for each field, then there is in significant difference among the respondents toward each field due to years of service. We conclude that the personal characteristics' years of service has no effect on each field.

Thus, the result in this section support (H2f) as there is no significant difference among participants response due to years of experience.

Table 5-22: ANOVA test of the fields and their p-values for years of service

No.	Field	Means			Test Value	Sig.
		Between 1-5 years	Between 5-10 years	More than 10 years		
1.	Top Management Support (TMS)	5.14	5.21	5.30	0.781	**0.460**
2.	Project team competence	5.26	5.33	5.41	0.947	**0.390**
3.	User training and education	5.12	5.28	5.36	1.558	**0.213**
4.	Interdepartmental communication	5.26	5.32	5.37	0.324	**0.724**
5.	Data analysis and conversion	5.25	5.28	5.27	0.034	**0.966**
	Critical Success Factors	5.20	5.28	5.35	0.935	**0.395**
	ERP Implementation Evaluation	5.39	5.46	5.45	0.177	**0.838**
	All items of the questionnaire	**5.24**	**5.32**	**5.37**	**0.710**	**0.493**

5.5.7 The differences in the responses due to Field office:

Table (4-23) shows that the p-value (Sig.) is greater than the level of significance $\alpha = 0.05$ for the field "Top Management Support (TMS)", then there is insignificant difference among the respondents toward this field due to field office. We conclude that the personal characteristics' field office has no effect on this field.

For the other fields, the p-value (Sig.) is smaller than the level of significance $\alpha = 0.05$, then there is significant difference among the respondents toward these fields due to field office. We conclude that the personal characteristics' field office has an effect on the other fields.

Thus, the result in this section doesn't support (H2g) as there is a significant difference among participants response due to field office.

Table 5-23: ANOVA test of the fields and their p-values for field office

No.	Field	Means						Test Value	Sig.
		Head Quarter	Jordan Field Office	Gaza Field Office	Lebanon Field Office	West Bank Field Office	Syria Field Office		
1.	Top Management Support (TMS)	5.25	5.25	5.22	5.22	5.04	5.48	1.557	**0.175**
2.	Project team competence	5.41	5.26	5.30	5.32	5.26	5.66	2.644	**0.025***
3.	User training and education	5.46	5.20	5.18	5.32	5.13	5.62	3.203	**0.009***
4.	Interdepartmental communication	5.48	5.23	5.30	5.27	5.11	5.66	2.865	**0.016***
5.	Data analysis and conversion	5.40	5.15	5.23	5.29	4.97	5.65	4.378	**0.001***
	Critical Success Factors	5.40	5.22	5.25	5.28	5.12	5.61	4.001	**0.002***
	ERP Implementation Evaluation	5.57	5.44	5.38	5.31	5.28	5.83	4.743	**0.000***
	All items of the questionnaire	**5.43**	**5.27**	**5.27**	**5.29**	**5.15**	**5.66**	**4.670**	**0.001***

For the field response results, The mean for the category *Syria Field Office* (SFO) respondents have the highest among the other field office, then we conclude that the category " Syria Field Office " respondents is agreed much more than the other field office category. That could be justify by the condition of Syria war, no one of trainers could be able to access Syria, according to that an online training was stablished and targeted all SFO staff members which was not the practice with other field offices. As the practice was the trainers train few staff in each function area to be Co-trainers, then those co-trainers trains their colleagues in their field offices. This style wasn't spired the knowledge as needed and reduces the satisfaction of staff members.

The most un-satisfied field offices are Gaza field office and Jordan field office. This also could be justify by no travel was allow for staff members of those fields which they considered it no motivation to learn and they compared themselves with other fields staff members whom travels to Jordan to get training conducted there.

The West Bank Field Office (WBFO) was the smallest response. This needs more understanding by UNRWA management. The researcher mentions this point in the recommendation of this study.

5.6 Chapter Summary:

The intent of this chapter was to provide an overview of the characteristics of the survey respondents, as well as provide detailed statistical analysis of the survey results in order to answer the research questions.

Table (4-24) summarized the achieved and not achieved hypothesis according to the findings mentioned above:

Table 5-24: Summery of the achieved and not achieved hypothesis

Hypothesis	Results
H1 "Critical Success Factors affect significantly and positively ERP system implementation in UNRWA"	Partially
H1a "Top management support affect significantly and positively the success of ERP implementation"	Accepted
H1b "The competence of the Project team affect significantly and positively the success of ERP implementation"	Accepted
H1c "User training and educations affect significantly and positively the success of ERP implementation"	Accepted
H1d "Interdepartmental communication affect significantly and positively the success of ERP implementation"	Accepted
H1e "Data analysis and conversion are important to success the ERP implementation"	Accepted
H2a "There are no significant differences among participants response due to gender"	Rejected
H2b "There are no significant differences among participants response due to	Accepted

age”	
H2c “There are no significant differences among participants response due to qualifications”	Accepted
H2d “There are no significant differences among participants response due to occupation type”	Accepted
H2e “There are no significant differences among participants response due to occupation”	Accepted
H2f “There are no significant differences among participants response due to experience”	Accepted
H2g “There are no significant differences among participants response due to UNRWA Field office”	Rejected

Chapter Five: Implications and Recommendations

6.1 Conclusions:

Throughout the study all questions were answered and all hypotheses were tested and validated. The following are the main findings and results of the study:

ERP system has been implemented successfully with relative weight 77.85%. This is very indeed indicator for UNRWA which success of is implementation process which had been followed. Business benefits have been realized from reengineered ERP processes and ERP implementation has realized the expectation for its benefits to Business.

There is a significant relationship between CSF and the success of ERP implementation at UNRWA. As the multiple correlation coefficient R =0.667. According to that the first main hypothesis has been accepted.

Top management support is important factor of implementing successfully the ERP system with relative weight 74.82%; TMS is one of the important critical success factors that participate in implementing ERP system successfully at UNRWA. Project team competence plays a significant role to success the ERP implementation with relative weight 76.47%.

User training and education are important to success the ERP implementation with relative weight 75.63%. This is one of main CSFs of any ERP implementation process. UNRWA focused on this factor during the implementation and provides internal resources to share the knowledge cross all UNRWA agency field office in five areas (Jordan, Syria, Lebanon, West Bank and Gaza Strip).

The high ranked CSF in ERP implementation at UNRWA is Data analysis and conversion, then Project team competency and lastly interdepartmental communication.

Data analysis and conversion are important to success the ERP implementation. The data had been uploaded are tested and checked by related departments before go-live, which allow this factor to be core for success the ERP implementation.

The estimated regression equation is used to predict the value of ERP implementation in UNRWA for any give values (responses) to the independent variables "Data analysis and conversion, Interdepartmental communication and Project team competence ". The estimated regression equation is:

There are partially differences in response due to personal characteristics. There are significant differences among participants response due to gender. There are no significant differences among participants response due to age, qualifications, occupation type, occupation, and experience.

There are significant differences among participants response due to UNRWA Field office. As the highest of the mean for the category is Syria Field office, HQ, Lebanon field office, Jordan Filed office, Gaza field office and lastly West Bank field office.

6.2 Practical Implication for UNRWA:

The results and findings of this study showed that UNRWA reached an excellent level in implementing ERP successfully, and to reach the best level of applying this implementation the researcher would recommend the following:

UNRWA should consider the other CSFs that focus on after go-live process to guaranty the continuity of success of ERP implementation and don’t reach a drop point.

UNRWA can be considered as prototype or model for other UN-sisters which they are going to implement ERP. It’s important for decision makers to study and deeply understand of UNRWA experience in this field.

According the research results, for success implementation of ERP in UNs, they have to focus on three CSFs. Data analysis and conversion, Interdepartmental communication and Project team competence.

Top management support is one of the major CSF. But according to research results is not like that. So it's recommended to pay more involvement of top management in ERP implementation process as this is core factor of success of any ERP implementations.

User training and education is very essential for success of ERP implementation and research result shows the significant role of User training and education in success of implementation at UNRWA. It's recommended to continue train the staff even after the implementation as there is many of new staff in addition of rotation and upgrades of staff. A training section should be established under ERP department structure to manage the training sessions periodically and to cover all UNRWA staff members cross the UNRWA agency.

It's recommended to build a strong support team from UNRWA staff members to lead the supporting for whole UNRWA staff members and not relaying only on the vendor support. This is very important to increase staff capacity and abilities to support their colleagues. This will lead to significate decrease in ERP running cost.

UNRWA top management has to investigate on West Bank field office satisfaction about ERP implementation as their response was the smallest one comparing with other field offices.

6.3 Implications for future research:

Once the criticality and importance of 5 factors has been stated, the following research can be continued and deepened into how to handle the most critical factors like project management, Business plan and vision, Testing, Monitoring and evaluation of performance. There will be some interesting fields to dig in on these aspects, and each

aspect can take a lot of words to explain and address. This research work can make companies better prepared for the success in ERP implementation.

Another important extension to this research is to use the 5 CSFs to develop a post implementation assessment instrument with the appropriate scales to measure them – hence the confirmation of these factors quantitatively.

This study sheds light on CSF related to each implementation stage. Future studies required in deferent prospective of ERP success like the improvement of services quality, decision making, budgeting and time efficiency...etc. Also the population of this study reached only staff members who engaged with ERP implementation, further studies required to populate all UNRWA staff members who currently using the ERP system to run the business.

Empirical studies can focus on the combined factors and validate the relationship between these factors and the stages in which they occur. Some of the factors might move to other stages which could be validated through empirical studies. Last but not least, more case studies could be studied in contexts which were not found in the research literature of ERP implementation to figure out if there are other factors which could be present in particular contexts and what are the parameters which make these factors differ than the factors described above in the paper. This paper opens up a new direction which could be prominent in deciding the route of further research in ERP literature.

To sum up, both of the future research concerns about the detailed aspects in the success of ERP implementation. As a great step in the evolution of information systems, the dream of ERP should come.

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Appendix

8.1 Appendix (1): Survey Questionnaire

Islamic University - Gaza

Dean of Postgraduate Studies

Faculty of Commerce

Business Administration

Dear Colleague,

I'm gathering research information about the Critical Success Factors in ERP (*Enterprise Recourse Planning*) implementation at UNRWA, to complete thesis in business administration at the Islamic University of Gaza.

This survey takes approximately 15- 20 minutes to complete. I really appreciate your voluntary cooperation and participation. Completing and returning this questionnaire will be interpreted as your consent to participate, although you have the right to withdraw at any time.

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 disclosed to anyone within your organization.

Please answer honestly. There is no right or wrong responses. When you finish the survey, please return it to the researcher.

Thank you for your sincere cooperation.

Sincerely,

Researcher: *Ahmed A. El-Kurd*

Section 1: Personal information:

1. Gender:

- ☐ Male
- ☐ Female

2. Age:

- ☐ Less than 30 years
- ☐ Between 30 and 40 years
- ☐ Between 40 and 50 years
- ☐ Between 50 and 60 years

3. Qualification:

- ☐ Diploma
- ☐ Master
- ☐ Bachelor
- ☐ PhD

4. Occupation Type:

- ☐ International position
- ☐ Local position

5. Occupation:

- ☐ Director
- ☐ Deputy Director
- ☐ Head of department
- ☐ Deputy Head of Department
- ☐ Senior Officer
- ☐ Officer
- ☐ Other

6. Years of Experience:

- ☐ Between 1-3 years
- ☐ Between 3-5 years
- ☐ Between 5-10 years
- ☐ More than 10 years

7. In which UNRWA Field office you are working:

- ☐ Head Quarter
- ☐ Jordan Field Office
- ☐ Gaza Field Office
- ☐ Lebanon Field Office
- ☐ West Bank Field Office
- ☐ Syria Field Office

Section 2: Questions:

The research questions on these topics are operationalized through a series of statements, to which participants responded using a Seven point format, grading from "1- strongly disagree" to "7- strongly agree".

1- **Top Management Support (TMS)** →								
To **what extent do you agree on the following statements regarding top management support?**								
#	Item	1	2	3	4	5	6	7
1	Top managers willingly assign and invest resources to ERP project as they are needed							
2	Top managers mandate ERP requirements' priority over unique functional concerns							
3	Top managers are enthusiastic about possibilities of ERP							
4	Top managers invested time needed to understand how ERP will benefit the enterprise							
5	Top managers personally solve the departmental conflicts in the implementation							
6	Top managers are prepared to take the risk and responsibilities of ERP							
7	Top managers understand the objectives of ERP							
8	Top managers have good knowledge of ERP							

2- **Project team competence** →								
To **what extent do you agree on the following statements regarding project team competences?**								
#	Item	1	2	3	4	5	6	7
1	Qualified implantation team.							
2	Balanced and empowered implementation team							
3	Complexity of ERP means only a few people understand system beyond a single module, making overall design decisions difficult							
4	Deep understanding of the key issues relating to ERP implantations							
5	All participants' commitment from different functional units.							
6	Team has similar experience in large scale IT or organizational change projects							
7	Project team includes people experienced in previous implementations							
8	Project team includes people with strong knowledge of financial and manufacturing processes							
9	Require in-house human resources with large-scale, enterprise-wide project management skills.							
10	Selection of the right (i.e. most knowledgeable and dedicated) employees for the ERP project team							
11	Utilize outside consultant group only when in-house expertise was not present							

12	Value the managerial support provided by the consultant group							
13	Value the technical support provided by the consultant group							

3- **User training and education** →

To **what extent do you agree on the following statements regarding users training and education?**

#	Item	1	2	3	4	5	6	7
1	Specific user training needs are identified early in the implementation.							
2	A formal training program has been developed to meet requirements of ERP							
3	Training materials have been customized for each specific job							
4	All users related to ERP have been trained in basic ERP system skills							
5	Seldom/Occasionally update training materials to reflect systems changes							
6	Training materials target the entire business task, not only the ERP screen and reports							
7	The time for ERP training is enough for most of the employees							
8	Training material had been built by UNRWA functional experts							

4- **Interdepartmental communication** →

#	Item	1	2	3	4	5	6	7
1	Cross-functional groups meet regularly to discuss new uses for ERP							
2	Internal groups meet regularly to share new methods of using ERP.							
3	ERP improvement suggestions are regularly collected from multiple employees levels							
4	IT staff communicates with functional use groups in the ERP.							
5	There is a communication team to solve the departmental conflicts during the implementation.							
6	Employees understand how their actions impact operations of other functional areas							

5- **Data analysis and conversion** →

To **what extent do you agree on the following statements regarding data analysis and conversion?**

#	Item	1	2	3	4	5	6	7
1	A clear plan was provided to how the process would be for data analysis and conversion							
2	The data that need to be converted had been identify							
3	An expert team had been selected from UNRWA for this mission							
4	An enough time provided for data perpetration and converting							
5	All the data had been passed the Data Cleansing stage							
6	The data had been uploaded are tested and checked by related departments before go-live							

6- **ERP Implementation Evaluation** →								
To what extent do you agree on the following statements regarding the evaluation of ERP implementation?								
#	Item	1	2	3	4	5	6	7
1	Overall, ERP implementation is successful							
2	Overall, ERP software vendors are responsive to business need							
3	ERP implementation has realized the expectation for its benefits to Business							
4	UNRWA productivity is improved after using ERP							
5	Business operational efficiency has been improved after using ERP							
6	Business processes have been rationalized through use of ERP							
7	ERP allows for better control of business operating expenses							
8	The financial visibility has been improved after implementing ERP							
9	The business process dependent on ERP after implementation							
10	ERP is integrated in the whole business process							
11	ERP has improved customer satisfaction							
12	ERP system is easy to operate and user friendly							
13	Business benefits have been realized from reengineered ERP processes							

Many thanks

8.2 Appendix (2): List of Jurors:

Judge Name	Place	Specialization
Dr. Sami Abu-Naser	ALAZHER University – Gaza	Prof in Computer Science
Dr. Ihab Zagout	ALAZHER University – Gaza	PhD in Information Technologies
Dr. Wasim Al-Habil	Islamic University - Gaza	PhD in Public Administration
Dr. Abed El-Naser Wadi	ALAQSA University – Gaza	PhD in Accounting
Dr. Abed El-Minem El-Tawil	ALAQSA University – Gaza	PhD in Finance
Dr. Nidal Abed Allah	ALAQSA University – Gaza	PhD in Economy
Dr. Isam El-Tawil	ALAQSA University – Gaza	PhD in Management
Mr. Saadi Elkahlout	UNRWA- Gaza	MBA