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Task-Technology Fit of MIS and its Impact on MIS User Acceptance and Satisfaction at UNRWA Relief and Social Services Area Offices - Gaza

مدى ملاءمة التكنولوجيا المستخدمة وأثرها على قبول المستخدمين ورضاهم عن نـظـم المعلومات الإدارية في مكاتب الإغاثة والخدمات الاجتماعية في وكالة الغوث الدولية بغزة

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إقـــــرار

أنا الموقع أدناه مقدم الرسالة التي تحمل العنوان:

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Abstract

The current research focuses on studying the management information systems (MIS) used by 16 area offices of Relief and Social Services Programme (RSSP) at UNRWA- Gaza Strip. The RSSP's area offices play a critical role in the life of more than 310,159 families of Palestine refugees in Gaza Strip by responding to their basic relief and social needs. The study aims to examine the extent to which the technologies of the currently used MIS fit the tasks, and to examine the impact of Task-technology fit on user acceptance and satisfaction of MIS at RSSP.

The research model was developed based on frequently used models in MIS previous research: Task-Technology Fit (TTF), Technology Acceptance Model (TAM), and DeLone and McLean IS success model. A questionnaire was designed, for data collection, using measurement scales that were derived from related previous research. Then, a survey was administered and 217 responses were received out of 274 questionnaires distributed to the targeted employees working in 16 Area Offices, representing a response rate of 79.20%. For data analysis, the researcher used two tools: IBM SPSS statistics 20, and SmartPLS v3.2.3, a PLS structural equation modeling tool.

The study findings reveal a strong impact of task-technology fit on perceived usefulness, perceived ease of use, and user satisfaction. Therefore, these findings suggest the strength of the study model in explaining the variation of the User Satisfaction, Perceived Ease of Use, and Perceived Usefulness. Also, it is concluded that "Task Characteristics" has a significant negative relationship with Task-Technology Fit. In addition, Technology Characteristics and Computer Self-Efficacy have a significant positive relationship with Task-Technology Fit, while "Technology Characteristics" has the strongest effect on the fit.

The study recommended RSSP management to conduct more training for employees on using MIS or to re-design the tasks to better utilize IT potential. Additionally, RSSP management are suggested to evolve the currently used MIS to take into account the individual desires and needs of MIS users to improve User Satisfaction with MIS and hence to enhance their performance. Theoretically, the study findings supported the merging of TAM and TTF models to study MIS utilization. Also, future research is recommended to replicate this study in new situations.

Abstract in Arabic

الملخص

يركز البحث الحالي على دراسة نظم المعلومات الإدارية (MIS) التي يستخدمها 16 مكتباً من مكاتب برنامج الإغاثة والخدمات الاجتماعية (RSSP) في وكالة الغوث لتشغيل اللاجئين UNRWA– بقطاع غزة. تقوم مكاتب برنامج الإغاثة والخدمات الاجتماعية للاجئين بدور مهم في حياة أكثر من 310159 عائلة من اللاجئين الفلسطينيين في قطاع غزة من خلال الاستجابة لإغاثتهم في احتياجاتهم الأساسية الحياتية والاجتماعية. وتهدف هذه الدراسة إلى دراسة مدى تناسب تقنيات نظم المعلومات الإدارية المستخدمة حالياً والمهام الموكلة بها، ودراسة أثر التوافق بين التكنولوجيا والمهام (TTF) على قبول المستخدم و رضاه عن نظم المعلومات الإدارية في مكاتب برنامج الإغاثة و الخدمات الاجتماعية (RSSP).

تم تطوير نموذج الدراسة بناءً على النماذج المستخدمة عادة في البحوث السابقة في مجال نظم المعلومات الإدارية: التوافق بين التكنولوجيا و المهام (TTF)، نموذج قبول التكنولوجيا (TAM)، و نموذج ديلون وماكلين لنجاح نظم تكنلوجيا المعلومات. وقد تم تصميم استبيان كأداة لجمع البيانات، وذلك باستخدام المقاييس المستمدة من البحوث السابقة ذات الصلة. ثم تم توزيع 274 استبانة على الموظفين المستهدفين العاملين في 16 من مكاتب برنامج الإغاثة والخدمات الاجتماعية، وتم استرداد 217 استبانة وهو ما يمثل نسبة استرداد 79.20٪. ومن أجل تحليل البيانات، استخدم الباحث أداتين: برنامج IBM SPSS 20، وبرنامج SmartPLS v3.2.3، وأداة PLS لنمذجة المعادلة الهيكلية.

أظهرت نتائج الدراسة وجود تأثير قوي للتوافق بين التكنولوجيا والمهام (TTF) على الفائدة المدركة، وسهولة الاستخدام، وعلى رضا المستخدمين. وبالتالي، فإن هذه النتائج تشير إلى قوة نموذج الدراسة في تفسير الاختلاف في مقدار الفائدة المدركة، وسهولة الاستخدام، ورضا المستخدمين. أيضاً، فقد خلصت الدراسة إلى وجود علاقة سالبة لخصائص المهام مع التوافق بين التكنولوجيا والمهام (TTF). وبالإضافة إلى ذلك، قد خلصت الدراسة إلى وجود علاقة موجبة لكل من خصائص التكنولوجيا والكفاءة الذاتية للكمبيوتر، مع التوافق بين التكنولوجيا والمهام (TTF)، في حين أن خصائص التكنولوجيا لديها التأثير الأقوى على هذا التوافق.

وأوصت الدراسة إدارة مكاتب برنامج الإغاثة والخدمات الاجتماعية (RSSP) بإجراء مزيد من التدريب للموظفين على استخدام نظم المعلومات الإدارية، أو إعادة تصميم المهام للاستفادة من الإمكانات الكامنة لتكنولوجيا المعلومات المستخدمة. بالإضافة إلى ذلك، تقترح الدراسة على إدارة مكاتب برنامج الإغاثة والخدمات الاجتماعية (RSSP) بتطوير نظم المعلومات المستخدمة حالياً بحيث تأخذ بعين الاعتبار الاحتياجات والرغبات الفردية للمستخدمين من أجل تحسين رضا المستخدمين عن نظم المعلومات الإدارية، وبالتالي تحسين أدائهم. من الناحية النظرية، دعمت نتائج الدراسة دمج نموذج التوافق بين التكنولوجيا والمهام (TTF) ونموذج قبول التكنولوجيا (TAM) لدراسة استخدام نظم المعلومات الإدارية. ينصح أيضاً بالقيام ببحوث مستقبلية لتردف هذه الدراسة في مواقف ومواضيع جديدة.

﴿ وَإِنْ تَعُدُّوا نِعْمَةَ اللَّهِ لَا تُحْصُوهَا ۗ إِنَّ اللَّهَ لَغَفُورٌ رَحِيمٌ ﴿١٨﴾ ﴾

[النّحل: 18]

Dedication

To my beloved mother and my beloved father
whose love, care, and support,
have inspired me to achieve my ambitions

To my beloved life partner, my wife, and our children (Raghad, Bassam, Amal and Haia)

To my beloved brothers and sisters

I dedicate this study

The researcher
Khaled Bassam Al-Gharbawi

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Khaled Al-Gharbawi

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List of Abbreviations

AMOS	:	Analysis of a Moment Structures
AU	:	Actual Use
BELS	:	Blended E-Learning System
BI	:	Behavioral Intention
BIS	:	Banking Information System
BPR	:	Business Process Reengineering
CEO	:	Chief Executive Officer
CFI	:	Chain and Franchise Industry
CMS	:	Campus Management System
CSE	:	Computer Self-Efficacy
D&M	:	DeLone and McLean
DSS	:	Decision Support Systems
EIS	:	Executive Information Systems
ERP	:	Enterprise Resource Planning
EUCS	:	End-User Computing Satisfaction
GET	:	Guest Empowerment Technology
IITU	:	Information Technology Unit
INTEC	:	International Education Centre
IS	:	Information System
IT	:	Information Technology
IUG	:	Islamic University of Gaza
KM	:	Knowledge Management
KMS	:	Knowledge Management System
MARS	:	Multivariate Adaptive Regression Splines
MIS	:	Managerial Information System
PCBS	:	Palestinian Central Bureau of Statistics
PEOU	:	Perceived Ease Of Use
PF	:	Perceived Fit
PIL	:	Perceived Impacts on Learning
PLS	:	Partial Least Squares
PU	:	Perceived Usefulness
RSSP	:	Relief and Social Services Programme
SA	:	Satisfaction
SCT	:	Social Cognitive Theory
SEM	:	Structural Equation Modelling
SPSS	:	Statistical Package for the Social Sciences
TA	:	Technology Acceptance
TAM	:	Technology Acceptance Model
TC	:	Task Characteristics
TNC	:	Technology Characteristics
TPC	:	Technology-to-Performance Chain
TPS	:	Transaction Processing Systems
TRA	:	Theory of Reasoned Action
TRAM	:	Technology Readiness and Acceptance Model
TRI	:	Technology Readiness Index
TTF	:	Task-Technology Fit
UIS	:	User Information Satisfaction
UNRWA	:	United Nations Relief and Works Agency
USAT	:	User Satisfaction
VLE	:	Virtual Learning and education Environment

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Chapter 1

Introduction

1.1 Introduction

Information plays a fundamental role for various administrative processes and functions including decision-making, planning, organizing and control. Every aspect of modern management depends heavily on information. Hence, It is believed that information is the power that nothing move without it. Moreover, using appropriate information leads to better planning, better decision making and better results. Therefore, organizations are working hard to enhance their capabilities to benefit from information through building what are called Information Systems (IS). One of the most important information systems is the Management Information System (MIS). MIS importance stems from its role of supplying various managerial levels with information needed for various purposes (Pikkarainen, Pikkarainen, Karjaluoto, & Pahnila, 2004; Adeoti-Adekeye, 1997).

Organizations invest in information systems for many reasons including cutting costs, producing more without increasing costs, improving the quality of services or products (Pikkarainen et al., 2004). As a result of technological boom, computer played a significant role in development of information systems (Al-Omary, 2009). Using Information Technology (IT), information systems are developed to aid an individual in performing a task. Information Systems range from hedonic, developed for pleasure and enjoyment; to utilitarian, developed to improve individual and organizational performance. Organizations use many utilitarian IS, such as decision support systems, computer-mediated communications, e-commerce, knowledge management systems, as well as many others (Van der Heijden, 2004).

Appraising the success of information systems is one of the most critical issues that has been faced by the management. It has been difficult to define a comprehensive framework to evaluate information systems. Also, the dependent variables are difficult to be identified (Sharkey, Scott, & Acton, 2006). However, the measurement of information systems success or effectiveness is very important because it is critical to our understanding of the value and efficacy of IS management actions and IS investments (DeLone & McLean, 2002).

Furthermore, managers are in need of systematic evaluation and measurements to guide their actions other than their own experience and judgment (Chung, Bae, & Lee, 1999). In an effort to better understand the tangible and intangible benefits of Information Systems, organizations have replaced traditional financial measures, such as return on investment, with methods such as balanced scorecards and benchmarking. Many researchers have created models for success evaluation, emphasizing the need for better and more consistent success metrics (Petter, DeLone, & McLean, 2008).

The success model proposed by DeLone and McLean (1992) sought to define the dependent variable "IS success" by identifying six dimensions of IS success: System Quality, Information Quality, Use, User Satisfaction, Individual Impact and Organizational Impact. This model has been updated as the D&M IS success model (2002) to include the variables service quality and net benefits. The updated success model (D&M IS success model) provides guidance for development in this field, especially as a model for developing comprehensive e-commerce success measures (Sharkey et al., 2006).

Another important model is the Technology Acceptance Model (TAM). TAM was designed specifically to explain computer usage behavior (Godoe & Johansen, 2012). The two main determinants in TAM: Perceived usefulness, and perceived ease of use. Perceived usefulness refers to "the degree to which a person believes that using a particular system would enhance his or her job performance"; On the other hand, perceived ease of use, refers to "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, p. 320).

The Task-technology fit (TTF) is another model which can be used to measure the effectiveness of information systems. This model is linking technology to performance. Task characteristics, individual characteristics, and technology characteristics are the determinants of Task-Technology fit (Goodhue, 1997). Hence, TTF model indicates that if a technology provides features that fit the requirements of the task, then the performance will be increased (Irick, 2008).

For decades, TAM and TTF have been used to predict and explain the user acceptance and utilization of information technology. In spite of the significant explanatory power that each of TAM and TTF offers alone, the combination of both has also been shown to be superior to the individual models (Usoro, Shoyelu, & Kuofie, 2010).

The current study focuses on studying the management information systems used in the area offices of Relief and Social Services Programme (RSSP) in Gaza Strip. RSSP is one of the most important programs of United Nations Relief and Works Agency (UNRWA). The main role of RSSP, in Gaza Strip, is to deliver various relief and social services for the Palestine refugees through 16 area offices. The current study aims to examine the impact of Task-Technology fit on the success factors of RSSP's MIS in terms of user acceptance and user satisfaction.

The research model is derived from three models: Task-Technology Fit (TTF), Technology-Acceptance (TAM), and D&M IS success model. Based on the extant research, the study model includes *task characteristics*, *technology characteristics*, and *computer self-efficacy* (individual characteristics) as determinants of the *Task-Technology Fit*. Also, the model proposes existence of a significant impact of *Task-Technology Fit* on three dependent variables: *Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and User Satisfaction (USAT).* Whereas PU and PEOU are

two major factors of user Technology Acceptance Model (TAM), USAT is considered as an essential factor in D&M IS Success model. Therefore, the main purpose of this study is to examine the impact of Task-Technology Fit on three important acceptance and success dimensions of: Perceived Usefulness, Perceived Ease of Use, and User Satisfaction.

1.2 Problem Statement

Information is the power that nothing move without it (Adeoti-Adekeye, 1997). To improve organizational and individual performance, organizations spend a lot of effort and money on designing and implementing Management Information Systems (MIS) (Irick, 2008). Also, organizations invest heavily in information technology, as a strategy to increase their flexibility to adapt to environmental changes, and hence, to cope with environmental uncertainty (Karimi, Somers, & Gupta, 2004). UNRWA is an organization that works in high level of environmental uncertainty. Therefore, information plays a fundamental role for its various administrative processes and operations ("UNRWA Website," 2016).

As one of the most important programmes of UNRWA, the Relief and Social Services Programme (RSSP) delivers its basic relief and social services to thousands of families of Palestine refugees within the Gaza Strip through 16 area offices. RSSP aims to meet a portion of social and economic urgent needs of these families. To achieve this goal, RSSP operations require efficient technology of information systems that can provide RSSP's different levels of management and staff members with high-quality information, to meet users' needs of information, to help employees perform tasks and manage work, and hence, to improve organizational and individual performance ("UNRWA Website," 2016, "UNRWA Gaza Field Portal Website," 2016).

To have a positive impact on individual performance, information systems require two conditions: the technology must be utilized, and there must be a good fit with the tasks the technology supports. If either the task-technology fit of the technology or its utilization is lacking, the technology will not improve performance (Goodhue & Thompson, 1995; Irick, 2008).

Hence, the current study focuses on studying the management information systems used by 16 area offices of RSSP. The study aims to examine to what extent the technologies of the currently used MIS fit the tasks, and to examine the impact of Task-technology fit of MIS on the factors of user acceptance and user satisfaction. To achieve this goal, the study adopts a research model that integrates the concepts of three frequently used models: Task-Technology Fit (TTF), Technology Acceptance Model (TAM), and D&M IS success to answer the following main research question:

<u>To what extent Task-Technology Fit of MIS has an impact on MIS user Acceptance and Satisfaction at RSSP?</u>

1.3 Research Questions

RQ1: How do respondents evaluate the characteristics of the tasks they perform at RSSP's area offices?

RQ2: How do respondents evaluate the characteristics of the technologies (tools) they use to perform the tasks at RSSP's area offices?

RQ3: How do respondents evaluate their capabilities and efficacy of using new or existent technologies and computers?

RQ4: What is the degree of fit between tasks and the technology used to perform these tasks?

RQ5: How do respondents evaluate the usefulness of the MIS at RSSP's area offices?

RQ6: How do respondents evaluate the ease of using the MIS at RSSP's area offices?

RQ7: To what extent are respondents satisfied with MIS use at RSSP's area offices?

1.4 Research Objectives

The research examines the extent to which Task-Technology Fit of Management Information Systems, adopted by RSSP, could affect Perceived Usefulness, Perceived Ease of Use, and User Satisfaction. In addition, The research has the following specific objectives:

1. To examine to what extent task characteristics, technology characteristics, and computer self-efficacy affect the task-technology fit of the current RSSP's MIS.
2. To explore the opinions of the staff members regarding their acceptance for the technology adopted for the current Management Information Systems.
3. To examine the relation between the Task-Technology Fit of current MIS and the Technology Acceptance by employees.
4. To provide IT managers and researchers with knowledge about the technological characteristics that influence the success of MIS.
5. To make recommendations on how organizations can get effective and successful MIS.

1.5 Research Hypotheses

H1: "Task Characteristics" has a significant impact on Task-Technology Fit.

H2: "Technology Characteristics" has a significant impact on Task-Technology Fit.

H3: Computer self-Efficacy has a significant impact on Task-Technology Fit.

H4: Task-Technology Fit has a significant impact on Perceived Usefulness.

H5: Task-Technology Fit has a significant impact on Perceived Ease of Use.

H6: Task-Technology Fit has a significant impact on User Satisfaction.

1.6 Research Framework and Variables

The current research model contains seven variables which are task characteristics, technology characteristics, individual characteristics (computer self-efficacy), task-technology fit, perceived usefulness, perceived ease of use, and user satisfaction.

1. Task Characteristics: Task: "The actions carried out by individuals in turning inputs into outputs" (Goodhue & Thompson, 1995, p. 216).
2. Technology Characteristics: Technology: "tools used by individuals to carry out tasks" (Goodhue & Thompson, 1995, p. 216).
3. Computer self-Efficacy: "a judgment of one's capability to use a computer " (Compeau & Higgins, 1995, p. 192; Karsten & Roth, 1998, p. 62).
4. Task-Technology Fit: "the degree to which a technology assists an individual in performing their portfolio of tasks." (Goodhue & Thompson, 1995, p. 216).
5. Perceived Usefulness: "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989, p. 320).
6. Perceived Ease of Use: "the extent to which users believe that the use of the application is free of effort" (Davis, 1989, p. 320).
7. User Satisfaction: "Recipient Response to the Use of the Output of an Information System" (DeLone & McLean, 2002, p. 68).

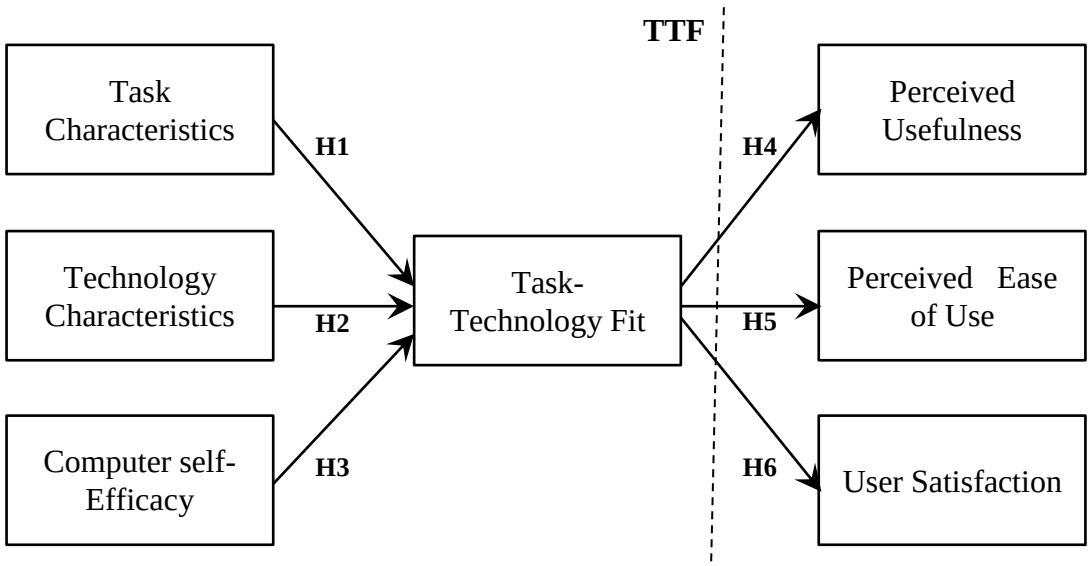


Figure (1.1): The Research Framework

1.7 Research Importance

1.7.1 Theoretical importance:

The current study is considered as an important reference for those who interested and involved in the area of research. This study addresses an important issue in MIS research by using an integrated research model that is derived from two important models: Task-Technology Fit (TTF), and Technology Acceptance Model (TAM), to study Management Information Systems. Whereas, the TTF models is concerned with studying the impact of technology on individual performance, TAM is concerned with studying the utilization based on user beliefs and behaviors.

The current study supports the principles of these theoretical models by applying them on a new situation, and by retesting the relationships hypothesized by these models. Also, the findings of this study are added to the efforts of those studies that were interested in studying the integrating of these two models. Furthermore, the study make a valuable contribution to this field of research, by including new variable: user satisfaction, as an important success dimension, and by proposing its relationship with TTF. Moreover, the current study adopts a new statistical approach for data analysis through using a new Structured Equation Modeling (SEM) tool, SmartPLS.

1.7.2 Practical importance:

The current study helps persons who in charge of MIS at RSSP to identify the strengths and weaknesses of the currently used computerized management information systems. Also, this will help them to understand the factors affecting the user acceptance and satisfaction, that lead to enhanced individual performance, and to better utilization. Therefore, findings of this study would be very useful for RSSP to assess the current MIS. Hence, decision-makers at RSSP can depend on the results to develop these information systems or to adopt new ones.

The importance of this study also emanates from the issue that addresses, which is very important for other organizations which are concerned with designing and developing of new MIS. The study is important for organizations to understand the success dimensions, and hence, to reduce the costs of designing and developing of these systems. Also, the study presents recommendations for organizations regarding how to enhance the utilization of the current MIS, that will lead to enhanced individual performance.

1.8 Chapter Summery and Structure of the Thesis

The study consists of six chapters. **Chapter 1** contains a general introduction, that includes the problem statement, research questions, research framework and variables, research hypotheses, research objectives, research importance, and structure of the thesis. Next, **Chapter 2**, contains the literature review, and it includes a brief discussion of relevant topics of Management Information Systems (MIS), Task-Technology Fit model (TTF), Technology Acceptance Model (TAM), Combined TAM/TTF model, User Satisfaction and Relief and Social Services Programme (RSSP). Then, **Chapter 3** presents relevant studies and research papers which is related to the fields of TTF model, TAM model, Integrating TTF and TAM, and IS Success and User Satisfaction. **Chapter 4** contains research design and methodology, which includes study population and sample, data collection, questionnaire design, piloting, and testing questionnaire for validity and reliability. **Chapter 5** contains the data analysis and results, and it includes description of the characteristics of the sample, descriptive analysis and answering research questions, data analysis using PLS, and discussion of hypotheses testing results. Finally, **Chapter 6** includes the conclusions and the recommendations of the study.

Chapter 2

Literature Review

2.1 Introduction

Every aspect of modern management depends heavily on information. Using appropriate information leads to better planning, better decision making, and hence, better organizational and individual performance. To meet this persistent need of information, organizations build what is called Management Information Systems (MIS). Building this kind of information systems requires a lot of money and time, and may be vulnerable to failure. To reduce the risk of developing or evolving management information systems, decision makers need to understand the factors that lead to successful and acceptable information systems (Zaied, 2012; Al-Omary, 2009; Adeoti-Adekeye, 1997).

The evaluation process of the MIS's contribution to organizational performance is too difficult. MIS evaluation can be classified to various types based on the characteristics and the degree of influences of MIS. Unfortunately, MIS evaluation lacks a systematic framework that covers various viewpoints and factors. This critical problem of MIS evaluation is because of the absence of one measure that can cover all aspects of MIS activity (Chung et al., 1999).

It is obvious that user acceptance is critical to the success of information technologies (IT) (Sun & Zhang, 2006). Many models and various theoretical approaches have been developed and utilized by MIS researches to evaluate information technology (IT) innovations, and to study software utilization choices of end users (D'Ambra, Wilson, & Akter, 2013). Decades of effort have yielded a variety of research results including the technology acceptance model (TAM) and its expansion TAM 2, the motivational model of technology behavior (MM), task-technology fit (TTF), and the unified theory of acceptance and use of technology (UTAUT) (Sun & Zhang, 2006).

The Technology Acceptance Model (TAM) (Davis, 1989) and the Task-Technology Fit Model (TTF) (Goodhue, 1995) are two of the widely accepted theories and the frequently adopted models in this field. Furthermore, many constructs have been suggested to explain user choices. One of these constructs, which was frequently used in previous MIS research, is Computer Self-efficacy (Compeau & Higgins, 1995; D'Ambra et al., 2013). These largely independent streams of research are very useful for exploring the similarities and differences among models and constructs that may help MIS researchers to understand users' choices regarding the software they use (Dishaw, Strong, & Bandy, 2002).

Moreover, MIS literature become rich with many studies that focus on integration of these models and constructs. For example, many studies are generated for research on the antecedents of the TAM external constructs, *Perceived Usefulness* and *Perceived Ease of Use* e.g. (Venkatesh & Davis, 2000). As well, the literature

have similar explorations of the TTF model e.g. (Dishaw & Strong, 1998a, 1998b; Goodhue & Thompson, 1995). Furthermore, a combined Technology Acceptance and the Task-Technology Fit Model has also been developed and tested (Dishaw et al., 2002, p. 1021). Although TAM and TTF by themselves are good predictors of technology adoption, it has been suggested that a combination of the two models would be a better indicator of technology acceptance (Schrier, Erdem, & Brewer, 2010).

The current study focuses on applying an integrated model of TTF and TAM to study the factors of success and acceptance of Management Information Systems which are used in RSSP's area offices. The study model is based on combining of TTF and TAM models, and including the two constructs Computer Self-efficacy and User Satisfaction based on reviewing the MIS literature and previous research.

2.2 Management Information System (MIS)

Management information system (MIS) is defined as "any system that provides information for the management activities carried out within an organization" (Curtis & Cobham, 2005, p. 27). Where the system can be defined as "a collection of interrelated parts that taken together form a whole " (Curtis & Cobham, 2005, p. 15). This section will discuss the basic concepts that are related to the MIS including the concepts of data, information, information systems (IS), management information system (MIS), and MIS evaluation.

2.2.1 Information

For understanding what MIS does mean, it is necessary to understand the concepts of data, information, data processing and a system. From many definitions for the term information, one of the definitions: "The data processed for a purpose". Where the data is an event or a fact that is recorded and that is related to a specific business or financial transaction. This data is not information and cannot be useful until it is processed. The information derived from data processing may be communicated for a particular purpose. Also, this information can be used to make important decisions related to planning and control. The formally handled data in a business may undergo complex processing before presentation and use of information. Types of processing are (Curtis & Cobham, 2005):

- Classification of data;
- Rearranging/sorting data;
- Summarizing/aggregating data;
- Performing calculations on data;
- Selection of data.

2.2.2 Information and Decisions

As organizational theories suggest, organizations succeed or fail due to their managers' decisions, which are based on their own perceptions and interpretations of the organizational environments. Because of the high rate of environmental uncertainty, high rate of competitive, and rapid changes that firms in some industries encounter, the cost of a single decision error could lead to a failure of the company as a whole. That is simply because managers cannot determine or predict which alternatives will solve the problems that their organizations face. One of the strategies that some organizations adopt to cope with environmental uncertainty is to invest heavily in information technologies (IT). Through investing in IT, these organizations aim to increase their information processing capacity and their flexibility to adapt to environmental changes (Karimi et al., 2004).

Therefore, one of the main purposes of data processing, is to support decision making process. Different types of information needed, varies based on the decision taking, decision takers, and the way that information is used in decisions. Information needs to be supplied to decision takers to take the most effective decisions in the light of organizational objectives. Information is important for the three levels of managerial decision taking which are strategic planning, tactical planning and control, and operational planning and control. The organization holds all these types of information to be retrieved and to be used once it is recognized as relevant for a decision (Curtis & Cobham, 2005).

Strategic planning deals with issues concerning an organization's long-term development and it is carried out by the most senior management, whereas tactical planning is a planning associated with the middle layers of management and may involve decisions on medium-term work scheduling and forecasting. On the other hand, operational planning is concerned with the decisions made in the daily operations within a business and aims to ensure that the resources is used effectively and efficiently to achieve budget objectives. Information used in the different levels of managerial activities has different characteristics as illustrated in **Figure (2.1**) (Curtis & Cobham, 2005).

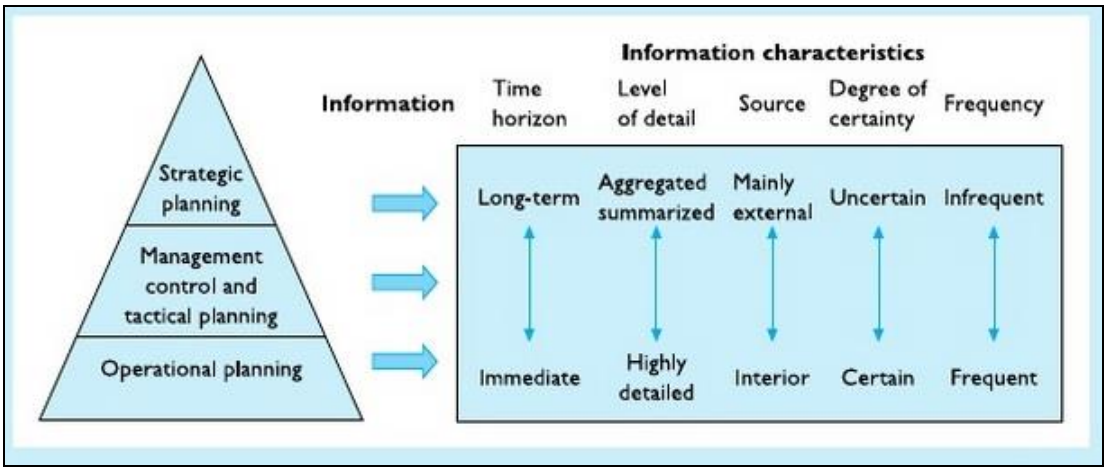


Figure (2.1): Information characteristics for managerial decisions
Source: (Curtis & Cobham, 2005, p. 10)

2.2.3 Information systems (IS)

Duff and Assad (1980) defined an information system (IS) to be: "a collection of people, procedures, a base of data and (sometimes) hardware and software that collects, processes, stores and communicates data for transaction processing at operational level, and information to support managerial decision making" (Adeoti-Adekeye, 1997). Also, IS was defined by Alter (1999) as "a system in which human participants perform business processes using information, hardware and software to capture, transmit, store, retrieve, manipulate and/or display information for internal or external customers" (Hussein, 2009, p. 48). Furthermore, Iivari (2005, p. 8) defined IS as "a computer-based system that provides its users with information on specified topics in a certain organizational context".

The hardware in the definitions mentioned above refers to the devices and other physical equipment involved in processing information, such as computers, workstations, physical networks and data storage and transmission devices. On the other hand, software refers to the computer programs that interpret the participants' inputs and that control the hardware. These computer programs include operating systems and end user application software. Participants are the people who do the work; human participants in this system typically play essential roles such as entering, processing or using the information in the system. The term 'user' refers to the internal or external customers who use the IS output (Hussein, 2009).

In parallel with the rapid development of information technology (IT), the use of information systems (IS) in organizations to improve employees' performance is evolving. Organizations are introducing computer technology and developing their own IS to manage their work more efficiently. As a result of growing utilization of IS, employees were encouraged to increasingly use IS to help them perform tasks and manage work. (Luarn & Huang, 2009). Also, the rapid evolution of computer technology is expanding the desire to obtain computer assistance in solving more complex problems in organizations (Adeoti-Adekeye, 1997). The new information system is a solution for a problem or set of problems that an organization expects to deal with. Therefore, new information systems are built as a product of organizational problem solving process (Laudon & Laudon, 2012).

Information systems and organizations influence one another. Mangers need to build information systems to serve the interests of the organization. On the other hand, the organization must be aware of the influences of information systems to benefit from new technologies. The complex interaction between information technology and organizations is influenced by many mediating factors. These factors include the organization's structure, business processes, politics, culture, surrounding environment, and management decisions. It is very important for organizations to understand how information systems can change social and work life in the firm. The managers need to understand their business organizations well to be able to understand the existing information systems or to design new systems (Laudon & Laudon, 2012).

Moreover, an information system requires two conditions to have a positive impact on individual performance: the technology must be utilized, and there must be a good fit with the tasks the technology supports. If either the task-technology fit of the technology or its utilization is lacking, the technology will not improve performance (Goodhue & Thompson, 1995; Irick, 2008).

2.2.4 Defining MIS

As an old term, MIS was used to refer to any system that supply the managerial activities with information. Nowadays, the term 'MIS' is used to refer to the computerized information systems. MIS consists of hardware and software that accept data as an input, then store and process the data to produce information as an output (Curtis & Cobham, 2005).

Every aspect of modern management depends heavily on information. It is believed that information is the power that nothing move without it. Information is an important resource that is needed to develop other resources. The development and use of management information systems (MIS) is concerned with the use of appropriate information that will lead to better planning, better decision making and better results (Adeoti-Adekeye, 1997).

Many authors use the term 'Management Information System' as a comprehensive term for all systems that support managers in making decisions. However, some authors use an alternative terminology by using the term 'Management Information System' to refer to a smaller subset of these systems as shown in **Figure (2.2)**. Based on this alternative terminology, the computer-based information systems are classified to executive information systems (EIS), management information systems (MIS), decision support systems (DSS), and transaction processing systems (TPS).

EIS is the highest-level information system that used by senior management to assist in strategic decision making. MIS and DDS are two categories of systems which composite the middle-layer of systems that used for tactical planning. Whereas MIS facilitate routine summarizing and reporting, DSS allow *ad hoc* queries and analytical reporting. Finally, TPS systems composite the lowest layer of information systems which includes such systems as payroll, machine control, and employee records. Under this classification, the overall set of layers is described as computer-based information systems, management support systems or business information support systems (Curtis & Cobham, 2005).

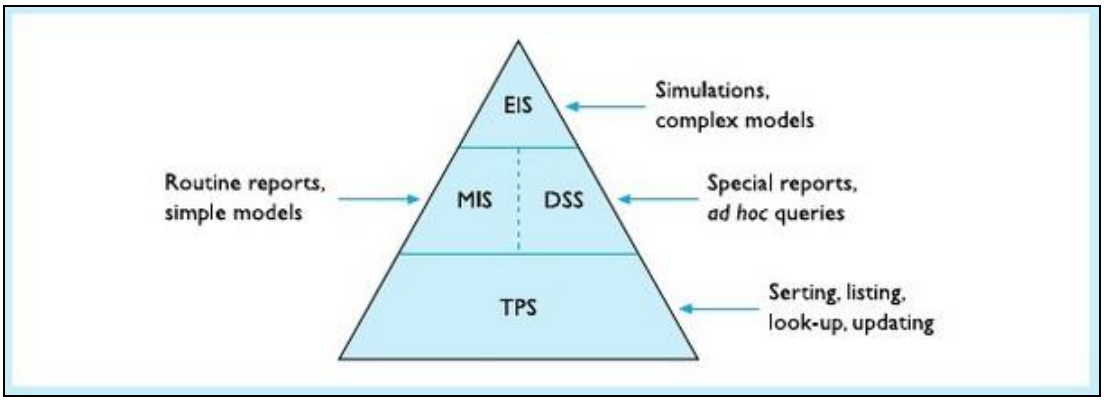


Figure (2.2): Business information systems (alternative terminology)
Source: (Curtis & Cobham, 2005, p. 28)

The key function of MIS is the processing of data into information and communicating the resulting information to the user. Therefore, It should be noted that MIS exist in organizations in order to help them achieve objectives, to plan and control their processes and operations, to help deal with uncertainty, and to help in adapting to change or, indeed, initiating change (Adeoti-Adekeye, 1997).

2.2.5 MIS Evaluation

MIS evaluation, is one of the most important managerial activities to manage and operate MIS successfully. It is not enough for managers to rely on their experience and judgement to guide their actions. Managers need systematic evaluation and measurements to evaluate the functionality of MIS in their organizations. In extant MIS research, many theoretical models have been proposed and used in the field of MIS assessment.

Based on numerous surveys conducted in developed countries, particularly in the UK and USA, existing MIS that often use advanced computer equipment have had relatively little success in providing management with the information it needs. Some of the discovered reasons include: lack of management involvement with the design of the MIS; narrow or inappropriate emphasis of the computer system; and lack of top management support (Adeoti-Adekeye, 1997). Therefore, organizations need to recognize the MIS success factors to reduce the costs of developing or evolving management information systems (Zaied, 2012).

Factors influencing the success or failure of an information system (IS) have been discussed frequently in the literature (Li, 1997). For decades, researchers developed rich streams of research attempting to identify factors that lead to successful use of Information Systems (Hussein, 2009). Appraising the success of information systems has long been a difficulty for management. Indeed, the definition of “success” is controversial as the term itself is multi-dimensional and can be assessed at various levels of the organization using many differing criteria (Sharkey et al., 2006).

Many IS researchers and practitioners rely on surrogate measures of IS success, such as user evaluations, because it is difficult to measure performance impacts from information systems directly. User evaluation consists of a survey containing a series of questions about certain qualities of information systems in which users are asked to respond about. However, these measures have been criticized for their lack of strong theoretical and empirical evidence (Irick, 2008).

User involvement in the evaluation of information systems (IS) is widely viewed as being critical to the improvement of IS. Information technology offers the potential for substantially improving employees' performance. But the performance gains are often obstructed by users' unwillingness to accept and use available systems. Therefore, the possibility of having real users participate in providing feedback for developing and refining the IS they are use is very important (Davis, 1989; Sørum, Medaglia, Andersen, Scott, & DeLone, 2012).

In the past two decades, two significant models of information technology (IT) utilization behavior have emerged in the MIS literature. These two models, the technology acceptance model (TAM) and the task-technology fit model (TTF), provide a much needed theoretical basis for exploring the factors that explain software utilization and its link with user performance (Dishaw & Strong, 1999). Utilization can be affected by several factors including system characteristics, task characteristics, individual characteristics, or the method of interaction between the system and the user (Schrier et al., 2010).

In this study, the researcher focuses on studying the MIS success factors that is based on the employees' perception toward the information systems they use. The researcher seeks to examine perceived factors of MIS acceptance and success through adopting a comprehensive model that combines the concepts of both models: Task-Technology Fit (TTF), and Technology Acceptance Model (TAM), and that includes an important construct of IS D&M success model: User Satisfaction.

2.3 Task-Technology Fit (TTF) Model

One of the most important purposes of research in information systems field is to better understand the impact of technology on individual performance (Irick, 2008). Task-technology fit is a key but often overlooked construct in understanding the impact of information systems technology on individual performance (Goodhue, 1997; Irick, 2008). According to the theory of task-technology fit, the success of an information system should be related to the fit between task and technology, whereby success has been related to individual performance and to group performance (Goodhue & Thompson, 1995; Zigurs & Buckland, 1998; Gebauer & Tang, 2008). Goodhue and Thompson (1995) defined the Task-Technology Fit (TTF) as the "degree to which a technology assists an individual in performing their portfolio of tasks".

Task-technology fit (TTF) is an established theoretical framework in information systems research that enables the investigation of issues of fit of technology to tasks as well as performance. One significant focus of TTF has been on individuals to assess and explain information systems success and impact on individual performance. TTF relationships can inform the associations between tasks and technology use from a number of perspectives: improved performance; altered user perceptions, or increased user utilization (Goodhue & Thompson, 1995; D'Ambra et al., 2013). The original TTF model is shown in **Figure (2.3**) as presented by (Goodhue & Thompson, 1995, p. 215).

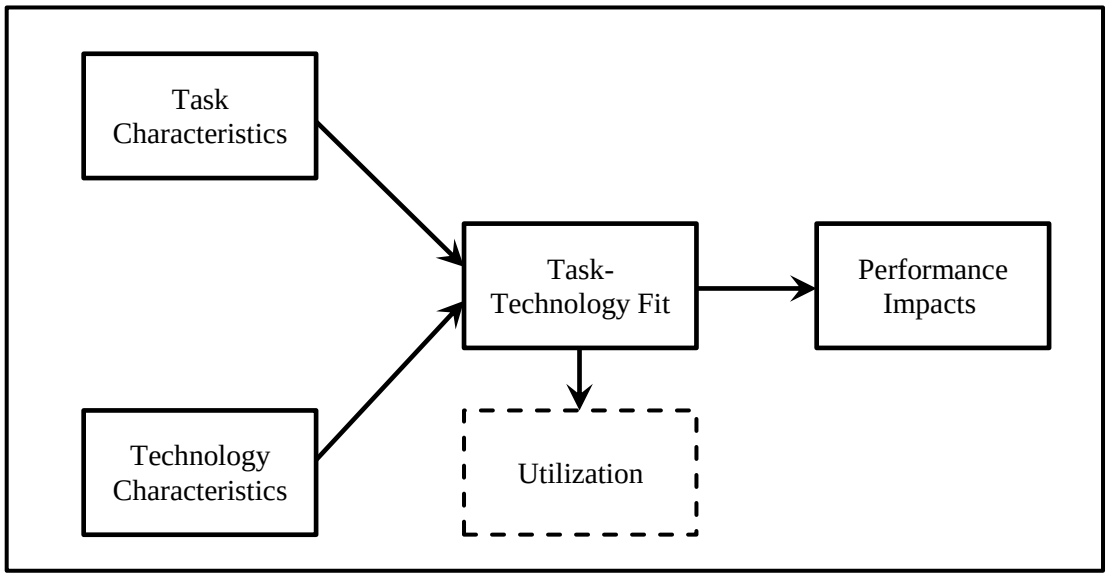


Figure (2.3): Task- Technology Fit (TTF) Model
Source: (Goodhue & Thompson, 1995, p. 215)

TTF model supports the argument that when there is a fit between user task characteristics and characteristics of the IS, utilization of the system will be high and user performance will be high (Kositanurit, Ngwenyama, & Osei-Bryson, 2006). Also, this model suggests that technology adoption depends in part on how well the new technology fits the requirements of a particular task. A technology will be adopted if it is a good fit with the task it supports. The TTF model has been applied successfully in previous research to predict acceptance of system adoption for various information systems (Klopping & McKinney, 2004).

Task-Technology-Fit (TTF) is the matching of the capabilities of the technology to the demands of the task. Hence, it reflects the ability of information technology to support a task. TTF model has four key constructs, *Task Characteristics*, *Technology Characteristics*, which together affect the third construct *Task-Technology Fit*. *Task-Technology Fit* construct in turn affects the outcome variable, either *Performance* or *Utilization*. The main construct in TTF model is *Task-Technology Fit* (Dishaw et al., 2002).

Individual Abilities construct is a common addition to TTF model which was supported by both Work Adjustment Theory from which TTF was originally derived and from previous MIS research (Luarn & Huang, 2009). Hence, D'Ambra and Wilson (2004a) defined the Task-technology fit as the correspondence between task requirements, individual abilities and the functionality of the Web (Technology).

In extant research which include *Individual Abilities*, experience with particular IT is generally associated with higher Utilization of that IT (Dishaw et al., 2002). Moreover, some researchers considered the *Computer Self-Efficacy* (CSE) as an individual characteristic that was added to test the Technology To Performance Chain (TPC)- related model, and the results revealed that *Computer Self-Efficacy* positively affected TTF (Luarn & Huang, 2009).

The research model of the current study includes *Task Characteristics*, *Technology Characteristics*, *Computer Self-Efficacy, and Task-Technology Fit* constructs from the Task-technology Fit model, to examine TTF impact on *User Satisfaction* and on TAM main constructs, *Perceived Usefulness* and *Perceived Ease of Use*.

2.3.1 Defining Fit

The notion of 'fit' has continuously grown in importance since the advent of contingency theory in organizational research (Hoehle & Huff, 2012). Despite of the wide use of the term fit in various models that deal with contingencies among variables, its precise nature and meaning are rarely stated. Nevertheless, the fit (typically between strategy and structure) in strategic management literature has had a clear meaning and has been examined in some detail (Zigurs & Buckland, 1998). The fit concept was also evident in a variety of theories in information systems (IS) research. Task-technology fit (TTF) is recognized as an important development in IS theory (Hoehle & Huff, 2012).

Based on distinct approaches of structural contingency theory, three different definitions of fit have been identified: fit as congruence, fit as interaction, and fit as internal consistency. These ideas were extended to identify six unique perspectives on fit in the strategy literature: fit as moderation, as mediation, as matching, as gestalts, as profile deviation, and as covariation (Zigurs & Buckland, 1998). The six perspectives on fit as discussed by Venkatraman (1989) are summarized in **Table (2.1)**.

Table (2.1): Perspectives on Fit

Perspective	Underlying Conceptualization	Description	Example Proposition (Venkatraman)
Fit as Matching	Matching	A match between two theoretically related variables is defined, without reference to a criterion variable.	The match between strategy and structure enhances administrative efficiency.
Fit as Covariation	Internal consistency	A pattern of covariation or internal consistency among a set of underlying theoretically related variables is defined, without reference to a criterion variable.	The degree of internal consistency in resource allocations has a significant effect on performance.
Fit as Gestalts	Internal congruence	Gestalts are defined in terms of the degree of internal coherence among a set of theoretical attributes, involving many variables, but not specified with reference to a criterion variable.	The nature of internal congruence among a set of strategic variables differs across high and low performing firms.
Fit as Moderation	Interaction	The impact that a predictor variable has on a criterion variable is dependent on the level of a third variable, which is the moderator.	The interactive effects of strategy and managerial characteristics have implications for performance.
Fit as Mediation	Intervention	A significant intervening Mechanism (i.e., an indirect effect) exists between an antecedent variable and the consequent variable.	Market share is a key intervening variable between strategy and performance.
Fit as Profile Deviation	Adherence to a specified profile	A profile of theoretically related variables is specified and related to a criterion variable.	The degree of adherence to a specified profile has a significant effect on performance.

Source: (Venkatraman, 1989; Zigurs & Buckland, 1998)

Another perspective on fit, that have also been used by many researchers but not specifically discussed by Venkatraman (1989), is to use 'direct' (reflective) measures. The direct measurement approach involves developing and utilizing several reflective items that are tailored to elicit individuals' perceptions of the fit between two or more variables (Hoehle & Huff, 2012).

The fit as covariance has frequently been used by researchers investigating IS, including studies of task-technology fit. For example, Goodhue and Thompson (1995) collapsed the TTF measures into eight unique factors (quality, locatability, authorization, compatibility, product timeliness, ease of use, ease of training and relationship with users). They argued that each dimension would represent a unique part of the task-technology fit. Using regression techniques, these facets of fit were linked to other constructs within the research model (for example, utilization and performance impacts) (Hoehle & Huff, 2012).

Similarly, researchers studying TTF have used direct measurement approaches. For example, Klopping and McKinney (2004) created eight reflective items to assess the fit between Internet-based shopping malls and individuals' shopping preferences. They used eight items to construct a scale to measure TTF and then applied Structural Equation Modelling (SEM) to test a research model that hypothesized relationships between the TTF construct and other variables such as perceived usefulness and intention to use (Hoehle & Huff, 2012; Klopping & McKinney, 2004).

The main advantage of the direct measurement approach is its simplicity. These constructs can be treated as reflectively measured latent variables, and structural equation modelling techniques can be used to evaluate the research models. Despite the widespread acceptance of this approach, this technique has been criticized by various researchers (Hoehle & Huff, 2012).

In the current study, the direct measurement approach is adopted to measure the TTF variable. The questions composing the measurement scale of TTF are included in the study questionnaire appended in ***Appendix A*** (English) and ***Appendix C*** (Arabic).

2.3.2 Tasks Characteristics

Tasks are broadly defined as "actions carried out by individuals in turning inputs to outputs to satisfy their information needs" (D'Ambra & Wilson, 2004a, 2004b). The previous research in this field was interested in studying the task characteristics that might move a user to rely more heavily on certain aspects of information technology (Goodhue & Thompson, 1995).

Organizational researchers suggested a general characterization of tasks through creating a three dimensional construct of task characteristics: variety (number of exceptions), difficulty (nonanalyzable search behavior) and interdependence (with other organizational units). This characterization captures most of the salient dimensions used by organizational researchers. However, some researchers raised the possibility that two of these dimensions (variety and difficulty) might tend to be very correlated in practice, and that they might be combined into a single dimension of routine versus nonroutine (Goodhue, 1995). Furthermore, several TTF studies categorized tasks into simple versus complex tasks (Hoehle & Huff, 2012; Zigurs & Buckland, 1998).

The current study adopted a measurement scale for task characteristics that was used by Luarn and Huang (2009) and which based on the dimensions specified by Goodhue (1995) that include variety, difficulty, interdependence, and hands-on tasks. The used measurement scale is included in the study questionnaire appended in ***Appendix A*** (English) and ***Appendix C*** (Arabic).

2.3.3 Technology Characteristics

Technologies are defined as "tools used by individuals in carrying out their tasks". In the context of IS research, "technology refers to computer systems (hardware, software, and data) and user support services (training, help lines, etc.) provided to assist users in their tasks" (Goodhue & Thompson, 1995, p. 216; Irick, 2008). The TTF model considers the importance of fitting the functionality and attributes of technology used to the demands imposed by individual needs (D'Ambra et al., 2013).

Based on D'Ambra and Wilson (2004a), the technology's attributes (accessibility, response time) can affect usage and users' perceptions of the technology. Goodhue (1995) suggested that user evaluations will not be random, but will reflect the objective characteristics of a system and services available.

In the current study, to measure the technology characteristics variable the researcher adopted a measurement scale that was used by Luarn and Huang (2009) which consists of four questions derived from the four dimensions identified by Goodhue (1995) that include the common and integration of the system, workstation penetration, assistance ratio, and decentralization of assistance. The used measurement scale is included in the study questionnaire appended in ***Appendix A*** (English) and ***Appendix C*** (Arabic).

2.3.4 Computer Self-Efficacy

Self-efficacy

Self-efficacy is " the belief one has capability to perform a specific task" (Karsten & Roth, 1998, p. 62). Bandura (1989) defined Self-efficacy as: "People's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances. It is concerned not with the skills one has but with judgments of what one can do with whatever one possesses" (Compeau & Higgins, 1995).

Therefore, individuals are defined as high in self-efficacy, and are more likely to attempt and execute certain tasks or activities, if they perceive themselves capable of performing these tasks and activities. In contrast, people who perceive themselves as less capable are less likely to attempt and execute these tasks and activities, and are accordingly defined as lower in self-efficacy (Karsten & Roth, 1998).

Self-efficacy differ on three distinct but interrelated dimensions: magnitude, strength, and generalizability. The magnitude of self-efficacy refers to the level of task difficulty one believes is attainable. Where the strength of self-efficacy reflects the level of conviction about the judgment, generalizability refers to the extent to which perceptions of self-efficacy are limited to particular situations (Compeau & Higgins, 1995).

Computer Self-efficacy

Computer self-efficacy (CSE) refers to "a judgment of one's capability to use a computer " (Compeau & Higgins, 1995, p. 192; Karsten & Roth, 1998, p. 62). It is concerned with what user could do in the future, rather than what one has done in the past. Also it does not refer to simple component subskills. Rather, it incorporates judgments of the ability to apply those skills to broader tasks

(Compeau & Higgins, 1995). Also, computer self-efficacy is associated with attitudes toward computer technologies (Sam, Othman, & Nordin, 2005).

It is important to understand the dimensions of magnitude, strength, and generalizability in the context of computer self-efficacy. Based on magnitude dimension, individuals with a high computer self-efficacy magnitude might be expected to perceive themselves as able to accomplish more difficult computing tasks than those with lower computer self-efficacy magnitude. Computer self-efficacy magnitude might be measured in terms of support levels required to undertake a task. Individuals with a high magnitude might judge themselves as capable of operating with less support and assistance than those with lower judgments of magnitude.

The strength of self-efficacy reflects the level of conviction of individuals about their judgments. In addition to high magnitude they perceive about themselves, individuals with high computer self-efficacy strength would display greater confidence about their ability to successfully perform the tasks.

Self-efficacy generalizability reflects the degree to which the judgment is limited to a particular domain of activity. Within a computing context, these domains might be considered to reflect different hardware and software. Hence, individuals with high computer self-efficacy generalizability would expect to be able to competently use different software packages and different computer systems, while those with low computer self-efficacy generalizability would perceive their capabilities as limited to a particular software packages of computer systems (Compeau & Higgins, 1995).

In previous research, several different scales have been employed to measure computer self-efficacy (CSE) (Compeau & Higgins, 1995; Karsten & Roth, 1998). Based on these scales and the definition of computer self-efficacy as an individual's perception of his or her ability to use a computer in the accomplishment of a job task, Compeau and Higgins (1995) developed a 10-item task focused measure of computer self-efficacy. The measure incorporates elements of task difficulty that captures differences in self-efficacy magnitude (Compeau & Higgins, 1995).

The current study used a measurement scale for CSE which was derived from Compeau and Higgins (1995) 10-item measure of computer self-efficacy. This derived scale is used by many previous studies including the study of Luarn and Huang (2009).

2.4 Technology Acceptance Model (TAM)

It is obvious that user acceptance of new information system have a critical impact on successful information system adoption. The goal of most organizational information systems is to improve performance on the job. Performance impacts are lost whenever systems are rejected by users (Davis, 1993). Therefore, information system will not bring full benefits to the organization if users are not willing to accept it (Davis, 1993; Pikkarainen et al., 2004). Moreover, the lack of user acceptance and ineffective system use are believed to account for many of IS failures.

Therefore, a better understanding of the various factors that influence users' acceptance and use of IT is very important. This objective has created a need for studies focusing on theory-based discovery and assessment of causal relationships among user perceptual, attitudinal, and behavioral factors (Sun & Zhang, 2006). The Technology Acceptance Model (TAM) is one of the frequently adopted models to evaluate IT innovations and to study software utilization choices of end users **Figure (2.4**) (Compeau & Higgins, 1995; D'Ambra et al., 2013).

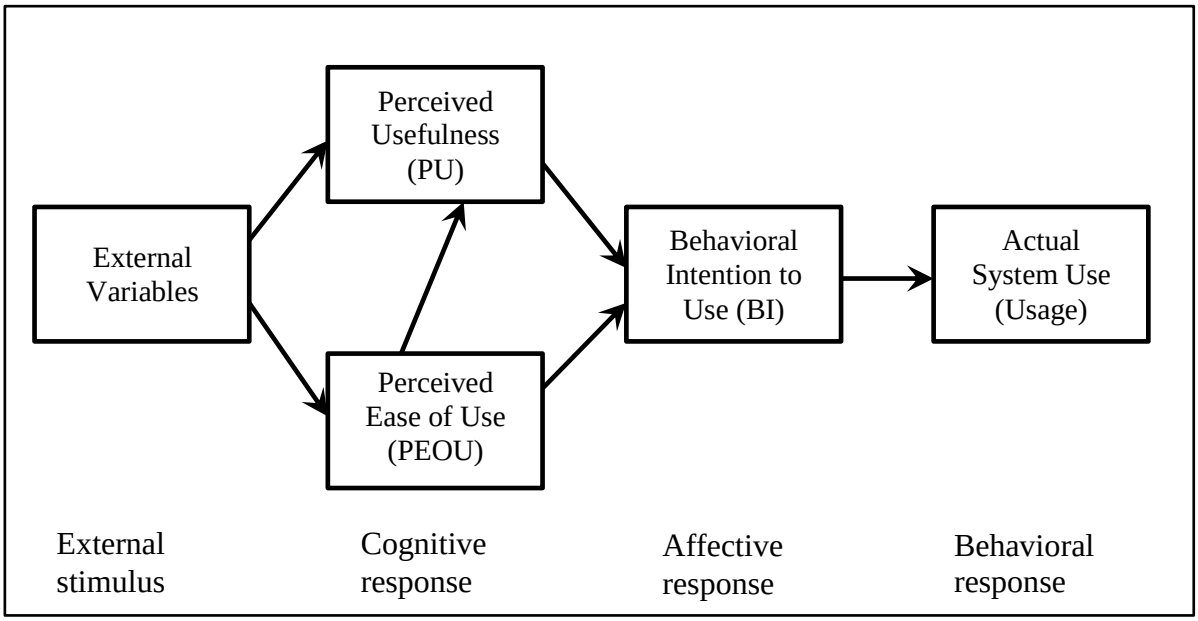


Figure (2.4): Technology Acceptance Model (TAM)
Source: (Davis, 1993, p. 476)

TAM is well known and widely accepted in the MIS literature (Dishaw & Strong, 1999, p. 9). TAM was developed and designed by Davis (1986) specifically to explain computer usage behaviour. This model is an adaptation of Fishbein and Azjen's (1975) Theory of Reasoned Action (TRA) (Godoe & Johansen, 2012; Schrier et al., 2010). TRA stated that beliefs influence attitudes, which lead to intentions, and finally to behaviors (Klopping & McKinney, 2004). The TAM

specifies the casual relationships between systems design features, perceived usefulness, perceived ease of use, attitude toward using, and actual usage behavior (Davis, 1993). Davis (1986) hypothesized the primary determinant of technology usage to be the user's behavior intentions to use a technology. It has been noted that users' attitudes toward technology and the Perceived Usefulness (PU) of a particular technology determine behavioral intentions (Schrier et al., 2010).

TAM has been widely studied in a number of contexts using different information systems (Garrity, Glassberg, Kim, Sanders, & Shin, 2005). Hence, TAM has been supported by IS previous research over the years. TAM has been validated over a wide range of systems, and perceived usefulness and perceived ease of use have proven to be reliable and valid cognitive dimensions. Generally, the model explains between 30% and 40% of system usage. In addition, perceived usefulness is often found to be the strongest determinant in the model. Furthermore, The model has undergone numerous adjustments since the original TAM was introduced. Some versions of TAM simply include perceived usefulness, perceived ease of use, and actual use of a particular system (Godoe & Johansen, 2012).

The principal determinants of TAM are *Perceived usefulness* (PU), and *perceived ease of use* (PEOU) (Schrier et al., 2010). In previous research, the two specific beliefs, perceived usefulness and perceived ease of use, have been identified as important user acceptance criteria (Davis, 1993). *Perceived usefulness* refers to "the degree to which a person believes that using a particular system would enhance his or her job performance"; On the other hand, *perceived ease of use*, is defined as "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, p. 320; Sun & Zhang, 2006, p. 619).

TAM utilizes EU and PU as external variables, which have influence over users' attitudes, intentions to use, and actual usage (Schrier et al., 2010, p. 204). Based on the theoretical basis of TRA, the PU and PEOU are expected to influence intensions to use a system, which in turn influence actual system usage. On other hand, perceived ease of use is hypothesized to influence perceived usefulness. This hypothesis follows from the logic that improvements in ease of use of a system contribute to increased usefulness due to saved effort (Davis, 1989; Godoe & Johansen, 2012).

The current study is particularly interested in two factors of the TAM model: *Perceived Usefulness* (PU), and *Perceived Ease of Use* (PEOU). To measure *Perceived usefulness* and *perceived ease of use*, the measurement scales were derived from the scales that had been developed by Davis (1989), and which also had been recommended and used by Davis (1993). The questions composing the measurement scales of PU and PEOU are included in the study questionnaire appended in ***Appendix A*** (English) and ***Appendix C*** (Arabic).

2.5 Technology to Performance Chain Model (TPC)

Researches that link technology to performance are classified into two major streams. The first is the utilization model which is based on theories of user attitudes, beliefs, and behaviors (Irick, 2008). Due to the utilization focused studies, the utilization of a technology is the result of a user's belief about and affect toward a technology (Davis, 1989). Furthermore, increased utilization will lead to positive performance impacts (Irick, 2008). An example is the Technology Acceptance Model (TAM) (Davis, 1989). According to TAM, the two beliefs of a technology: person's perceived usefulness and perceived ease of use predict one's behavioral intention to use the technology. Also, the intention to use has shown to predict actual usage (Davis, 1993). The second stream of researches that link technology to performance is the task-technology fit (TTF) model. Based on the TTF model, when a technology provides features that fit the requirements of the task, performance will be increased (Irick, 2008).

According to Goodhue and Thompson (1995), using either of these models alone will have many limitations. For example, considering only the utilization model will be suitable only if the utilization was voluntary. Many users may use the system just because they have no choice but to use it. Therefore, in this situation performance impacts will depend upon task-technology fit rather than utilization. Also, sometimes the increased utilization may not lead to improved performance. Likewise, relying strictly on the TTF model may have many limitations. Focusing on fit alone will ignore the fact that systems must be utilized before they positively impact performance (Goodhue & Thompson, 1995; Irick, 2008). Thus, in order for technology to positively impact performance it must be utilized as well as fit the needs of the individual. The likelihood of an individual utilizing a technology increments when there is a good fit (Schrier et al., 2010).

Because of the limitations of using either of these models alone, Goodhue and Thompson (1995) suggested a comprehensive theoretical model that joins both utilization and task-technology fit that is called technology-to-performance chain (TPC) model. The proposed model (TPC) consolidates the concepts of the two streams of research: the task-technology fit (TTF), and the utilization. According to TPC, the technologies must be utilized and fit the task to positively impact the performance. TPC model gives an accurate picture of how technologies, users' tasks, and utilization can impact performance (Goodhue & Thompson, 1995; Irick, 2008; Luarn & Huang, 2009). Therefore, in TPC model, performance is determined mutually by utilization and TTF as shown in **Figure (2.5).**

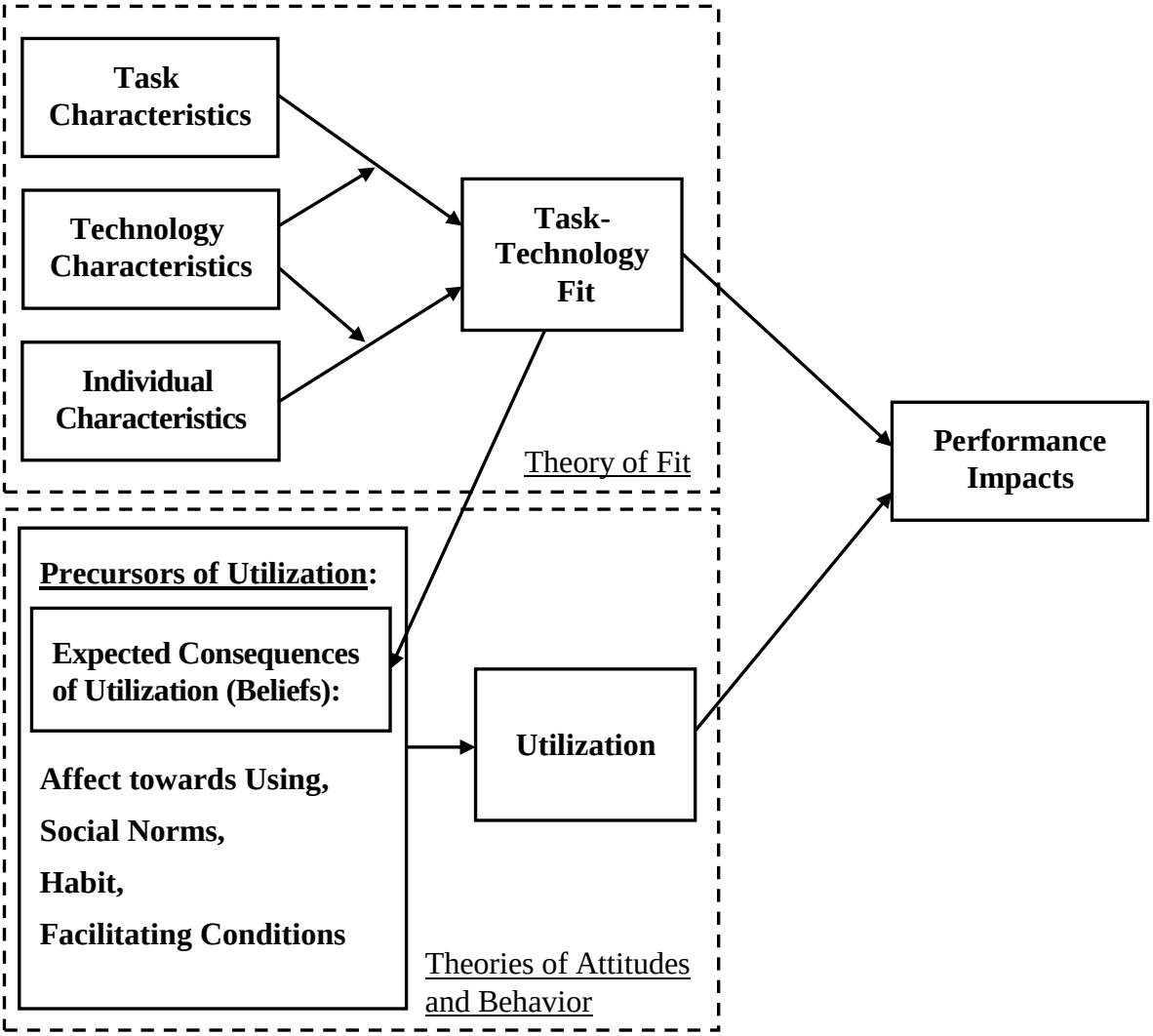


Figure (2.5): The Technology to Performance Chain (TPC)
Source: (Goodhue & Thompson, 1995, p. 217)

Based on TPC model, TTF will impact the utilization of IS, and TTF will be influenced by both task characteristics (TC) and technology characteristics (TNC). However, individual characteristics are not tested under the TPC model. As Goodhue and Thompson (1995) stated, individual characteristics consist of training, computer experience, and motivation. In other TPC- related researches, TPC model was extended to include individual characteristics - computer self-efficacy (CSE). Adding the individual characteristics construct to TTF model could enhance the explanatory power of original model (Dishaw et al., 2002; Luarn & Huang, 2009). Task characteristics, individual characteristics, and technology all combine to lead to a task-technology fit (Goodhue, 1997).

2.6 Combining TTF and TAM Models

MIS literature is rich with Information technology (IT) utilization studies. However, early studies lacked a strong theoretical foundation. Two significant models have appeared which provide a strong theoretical base for studies of IT utilization behavior, the technology acceptance model (TAM), and the task-technology fit model (TTF) (Dishaw & Strong, 1999). For decades, TAM and TTF have been used to predict and to explain the acceptance and utilization of information technology (Usoro et al., 2010). Both models were developed to understand users' choices and evaluations of IT. While TAM was developed and used to explain and predict computer-usage behavior, TTF model addresses utilization from a different perspective (Dishaw & Strong, 1999; Klopping & McKinney, 2004). Applications of TAM usually focus on intention to use or actual use, whereas TTF applications focus on actual use or individual performance attributable to actual use (Dishaw & Strong, 1999).

TAM and TTF models by themselves are good predictors of technology adoption and, if integrated, could provide an even stronger model than either standing alone. Therefore, It has been suggested that a combination of the two models would be a better indicator of technology acceptance. Nevertheless, TAM and TTF capture two different aspects of users' choices to utilize IT. TAM, and the attitude/behavior models on which it is based, assume that users' beliefs and attitudes toward a particular IT largely determine whether users exhibit the behavior of utilizing the IT. However, this perspective is criticized by many researchers because it is noted that users regularly utilize IT that they do not like if it improves their job performance. On the other hand, TTF models assume that users choose to use IT that provides benefits, such as improved job performance, regardless of their attitude toward the IT. Hence, combining the two models is likely to provide a better explanation of IT utilization than either an attitude or a fit model could provide separately (Dishaw & Strong, 1999).

The adoption of a hybrid TAM/TTF model is logical as both individual models examine various portions of technology acceptance which will eventually lead to an accept or reject decision by the user. The construct of external factors , in the Davis (1993) TAM model, is used to account for a wide range of variables that may have indirect influence on system usage. In contrast, TTF (Goodhue, 1995) model examines specific constructs which lead to user’s technology utilization intention. Thus, a refined hybrid TAM/TTF model is revealed by substituting the specific TTF constructs of task, technology, and individual characteristics for the construct of external factors in TAM (Schrier et al., 2010).

2.7 User Satisfaction

User satisfaction is considered one of the most important measures of information systems (IS) success. It is defined as "the affective attitude towards a specific computer application by someone who interacts with the application directly" (Doll & Torkzadeh, 1988). In previous research studies, the structure and the dimensions of the user satisfaction construct have received considerable attention as important theoretical issues. These issues have not been fully resolved (Doll, Xia, & Torkzadeh, 1994). It is difficult to isolate the factors that influence user satisfaction due to their complex interrelationships, and the fundamental similarity of user satisfaction and user attitude (Karimi et al., 2004).

Most of previous research studies focused on explaining what user satisfaction is by identifying its components. It was usually suggested that user satisfaction may be a single construct. Other research studies have developed multi-attribute satisfaction measures rather than relying on a single overall satisfaction rating (DeLone & McLean, 1992; Doll et al., 1994). Researchers have proposed several constructs for measuring user satisfaction (Karimi et al., 2004).

For assessing user satisfaction, prior research identified the key factors which include user involvement, belief, attitude, the quality of information received from the IS, IS features, and IS support and services (Karimi et al., 2004). Also, researchers have employed user information satisfaction (UIS), end-user computing satisfaction (EUCS), and task-technology fit (TTF) to measure user satisfaction. UIS measures the extent to which users believe that the IS available to them meets their information requirements. EUCS measures focus on individual end user computing applications, while both UIS and TTF are intended to assess all systems and services in an IS department (Karimi et al., 2004).

Otherwise, user satisfaction is one of six interrelated dimensions of IS success that were identified in the IS success model proposed by DeLone and McLean (1992). DeLone and McLean (1992) sought to define the dependent variable "IS success" by identifying six interrelated dimensions of IS success: System Quality, Information Quality, Use, User Satisfaction, Individual Impact and Organizational Impact. This model has been updated as the D&M IS success model (2002) to include the variables service quality and net benefits (Sharkey et al., 2006).

The current study adopts the definition of DeLone and McLean (2002) for *User Satisfaction.* DeLone and McLean (2002) defined user satisfaction as: "Recipient response to the use of the output of an information system". Depending on the previous studies that have applied D&M IS success model, the researcher used a measurement scale to measure user satisfaction which is derived from the DeLone and McLean (1992) study, and depending on the study of Zaied (2012). The questions used to measure user satisfaction (USAT) are included in the study questionnaire which is appended in ***Appendix A*** (English) and ***Appendix C*** (Arabic).

2.8 Relief and Social Services Programme (RSSP)

The current study will focus on studying the management information systems used in area offices of Relive and Social Services Programme (RSSP) in Gaza Strip, which belongs to the United Nations Relief and Works Agency (UNRWA).

2.8.1 UNRWA

UNRWA was established on 8 December 1949 by United Nations General Assembly resolution, after the 1948 Arab-Israeli conflict, to carry out direct relief and works programmes for Palestine refugees. The Agency began its operations on 1 May 1950, responding to the needs of about 750,000 Palestine refugees. In the absence of a solution to the Palestine refugee problem, the General Assembly has repeatedly renewed UNRWA's mandate. Today, more than 5 million Palestine refugees are eligible for UNRWA services.

UNRWA is unique in terms of its long-standing commitment to one group of refugees. Through its programmes, UNRWA has contributed to the welfare and human development of four generations of Palestine refugees. Palestine refugees defined as "persons whose normal place of residence was Palestine during the period 1 June 1946 to 15 May 1948, and who lost both home and means of livelihood as a result of the 1948 conflict". UNRWA services are available to all those living in its areas of operations who meet this definition, who are registered with the Agency and who need assistance. Furthermore, the descendants of Palestine refugee males are also eligible for registration.

UNRWA is funded by receiving voluntary contributions from United Nations (UN) Member States. Also, to cover international staffing costs, UNRWA receives some funding from the regular budget of the UN. The Agency's services involve primary and vocational education, primary health care, relief and social services, infrastructure and camp improvement, microfinance and emergency response, and including in situations of armed conflict. UNRWA provides its services assistance and protection to Palestine refugees in Jordan, Lebanon, Syria, the Gaza Strip and the West Bank, including East Jerusalem ("UNRWA Website," 2016).

2.8.2 UNRWA - Gaza Strip

For more than 65 years, the role of UNRWA appeared significantly in the life of Palestinian refugees in the Gaza Strip ("UNRWA Gaza Field Portal Website," 2016). For the last decade, UNRWA is facing a special situation in Gaza due to the tightened blockade, imposed by Israeli occupation government since June

2007. In this period, the social and economic circumstances in Gaza Strip have been in steady decline. A long time of conflict and siege have left more than 80% of the population dependent on international assistance. Also, the tightened blockade broke down life and livelihoods. This difficult situation led to the impoverishment and de-development of a highly skilled and well-educated society. In June 2010, it was announced that adjustments would be made to the blockade by the government of Israeli occupation. However, restrictions on imports and exports continue to severely hamper recovery and reconstruction ("UNRWA Website," 2016).

A large percentage of Palestine refugees in Gaza live in the eight recognized Palestine refugee camps. These camps have one of the highest population densities in the world. The blockade has had a subversive impact on Palestine refugees, including those living in Palestine refugee camps. Unemployment rates increased continuously and reached unprecedented levels, particularly among young people.

UNRWA delivers education, health care, relief and social services, microcredit and emergency assistance to registered Palestine refugees through more than 11,000 staff in over 200 installations across the Gaza Strip. UNRWA has made important improvements to its services in Gaza in recent years. These improvements include schools of excellence and excellent health services initiatives. Also, it enhanced its assistance to the poorest of the poor through the implementation of a proxy-means tested poverty survey. Furthermore, UNRWA continued to:

- Improve the academic achievement, behaviour and values of school students.
- Construct desperately needed infrastructure, including schools and shelters.
- Improve the quality and targeting of its food and cash assistance to the poorest of the poor.
- Promote gender equality and human rights for all.
- Nurture entrepreneurship by supporting the private sector.

2.8.3 RSSP

Relief And Social Services Programme (RSSP) is one of three major programmes of UNRWA. Through RSSP, UNRWA achieves its main goal in helping Palestinian refugees to employ their potentials in human development to deal with difficult situation they live. RSSP is transformed from being just a basic feeding programme in the past, to be a development programme that aims to meet the

social and economic needs of Palestine refugees. RSSP's importance stems from its continuous effect on the life of refugees who are in need for basic humanitarian aids ("UNRWA Gaza Field Portal Website," 2016).

Based on the statistics of 31 December 2014, more than 310,159 families, consisted of about 1,349,473 of individuals, depend on the services provided by UNRWA in the Gaza Strip. Furthermore, about 142,123 families, represent about 774,419 of individuals, receive urgent food assistance according to the results of the poverty survey conducted by poverty programme in UNRWA ("UNRWA Gaza Field Portal Website," 2016).

Relief and Social Services Programme (RSSP) plays a critical role in responding to the basic needs of Palestine refugees. It provides relief and social services directly to the most economically disadvantaged families. Also, RSSP is responsible for managing and updating the registration information system of refugees. Furthermore, RSSP supports social and economic development for people with special needs, especially women, people with disabilities, youth, children, the elderly, and orphans. Moreover, RSSP works to build the capabilities of community-based institutions that belongs to UNRWA to become self-sufficient ("UNRWA Gaza Field Portal Website" 2016).

RSSP in Gaza Strip offers its relief and social services to the Palestinian refugees through 16 area offices distributed across the Gaza Strip. This study aims firstly, to apply the task-technology fit on MIS used in RSSP's area offices. Then, it will examine the impact of Task-Technology fit on dimensions of MIS success and acceptance namely: Perceived Usefulness, Perceived Ease of Use, and User Satisfaction.

2.9 Chapter Summery

Chapter 2 presented the review for the literature which is related to the field of the current research. The chapter was divided into seven sections. The first section included a brief introduction. The second section addressed the principles and definitions of the Management Information System. Then, Task-Technology Fit model was defined, and its principles and variables are described in detail. Main notions of Technology Acceptance Model were clarified in the following section. The next section addressed the idea of combining the TTF and TAM models. Then, User Satisfaction is introduced as an IS success dimension. Last section presented a brief introduction for the RSSP, where this study was applied.

Chapter 3 will contain descriptions of the previous studies which are related to the current study.

Chapter 3

Previous Studies

3.1 Studies adopting TTF model

1. (El Said, 2015) "*Understanding Knowledge Management System Antecedents of Performance Impact: Extending the Task-Technology Fit Model with Intention to Share Knowledge Construct*"

The study aimed to investigate KMS's performance impact on individuals in organizations, and to suggest a KMS utilization and performance impact model through integration of the individuals' knowledge sharing intention construct with the TTF constructs. The study starts with exploratory study, where interviews were conducted with a sample of Knowledge Management **(**KM) users. To validate the model, a survey was then conducted with 95 administration and technical staff of different managerial levels, for two different Knowledge Management Systems in two organizations. The study employed Structural Equation Modelling (SEM) technique to validate the TTF Model. Partial least squares (PLS) was used for model analysis.

The research concluded that the task characteristics and technology characteristics significantly affect the user perception of Task-Technology Fit construct. Also, the effect of task and technology characteristics on utilization was supported through the qualitative analysis of the interviews, this was not the case in quantitative analysis of the survey. Also, it was concluded that a good fit between KMS characteristics and the tasks, they support, increases the impact of the system on users' performance.

The research recommended that organizations establishing KMS, have to ensure the good fit between task and technology. Also, organizations have to institutionalize knowledge sharing culture within work contexts. Finally, future studies are recommended to extend the model suggested by this research to examine KMS usage and impact beyond the boundaries of single organizations and across different knowledge assets and cultures.

2. (Luarn & Huang, 2009) "*Factors Influencing Government Employee Performance via Information Systems Use: an Empirical Study*"

The study seeks to investigate the implications and consequences of government employee performance via information systems based on the task-to-performance chain. Data was collected from 847 employees of the Taipei City government through the stratified proportion sampling method. In addition, the multiple regression method is used to investigate factors that influence employee performance.

The results indicate that three factors affect performance: task-technology fit, computer self-efficacy, and utilization. The study found a negative relationship

between TC and TTF, and a positive relationship between TNC and TTF. Also, Computer self-efficacy (CSE) is found to play the dual antecedents of performance and TTF. Also, employee performance is significantly affected by the TTF, CSE, and utilization. Finally, the study found that Utilization has a greater effect on performance than TTF and CSE. Therefore, increasing utilization is believed to have a more direct effect on performance.

The research recommended the government to consider the CSE and computer skills of the job applicant, when recruiting new employees. Also, The government should also enhance the computer ability of present employees when it administers on-the-job training.

3. (Gu & Wang, 2009) "*A study of exploring the "Big Five" and task technology fit in web-based decision support systems*"

The study aimed to examine the task technology fit theory by considering the impact of individual characteristics. Task technology fit theory was applied to explore how Individual characteristics affect task technology fit and how task technology mediate between personal characteristics and decision-making. The individual characteristic studied in the study is the "Big Five" Model. The "Big Five" Model contains five individual personality traits such as extraversion, agreeableness, conscientiousness, neuroticism. Data was gathered via a survey after an experiment of web-based decision making using Google Earth, which was completed by 192 undergraduate college students, and analysis was conducted utilizing structural equation modeling.

The research concluded that openness and agreeableness affect significantly the perceived task technology fit. Also. perceived task technology fit was proved to mediate between openness and perceived decision quality. However, no significant relationship were found between extraversion and perceived task technology fit, between neuroticism and perceived task technology fit, between conscientiousness and perceived task technology fit, and between perceived task technology fit and perceived decision quality.

The research recommended the designers of web-based decision support systems, to understand the effects of personal traits well to provide more personalized designs for these systems. Also, it is recommended to confirm the findings with a more representative sample of subjects because the findings are subject to a number of limitations. First of all, all of the survey questions are perception questions. Also, the subjects are all undergraduate students which may affect the external validity of the study.

4. (Lin & Huang, 2008) "*Understanding knowledge management system usage antecedents: An integration of social cognitive theory and task technology fit*"

The study aimed to empirically investigate the determinants of Knowledge Management System (KMS) usage, from the perspectives of information technology, organizational task, and personal cognitions, by extending the task technology fit with social cognitive theory (SCT). The unit of analysis for the research model was individual employees from all kinds of organizations. Therefore, data was collected from cross industries totaled 192 respondents. The sample included 500 people who are randomly selected from a list of 2,000 part-time alumni MBA students in a university and whose work location, international or local companies, ranging everywhere in Taiwan. Overall, of the 500 participants, 192 usable data were used for analysis giving a response rate of 38.4 percent. Partial least squares (PLS) was used to analyze our samples and the results support the propositions of TTF and SCT.

The research concluded that task interdependence, perceived task-technology fit, KMS self-efficacy and personal outcome expectation all showed significant relationships with KMS usage. However, the relationship between performance-related outcome expectation and KMS usage did not show significant relationship. Also, personal outcome expectations and performance-related outcome expectations were significantly influenced by KMS self-efficacy. The predeterminants of perceived task-technology fit, KMS characteristic and KMS self-efficacy showed significantly positive relationship with perceived task-technology fit. Task tacitness, as hypothesized, showed significantly negative relationship with perceived task-technology fit. Hence, The results supported the theory of task technology fit.

The research recommended organizational managers to focus on how to build social capital between employees to transfer tacit knowledge and they should not depend only on IT, because the study indicated that employees perceive KMS capabilities are less important when using tacit knowledge. Also, future research is suggested to use a larger sample that brings more statistical power and allows more sophisticated statistical analysis.

5. (Kositanurit et al., 2006) "*An exploration of factors that impact individual performance in an ERP environment: an analysis using multiple analytical techniques*"

The study aimed to test the research model of task–technology fit, user satisfaction, and individual performance in enterprise resource planning (ERP) environments to explore the factors that can impact individual performance when using ERP systems. The Six factors were identified as having an impact on individual performance: System Quality, Documentation, Ease of use, Reliability, Authorization, and Utilization. A survey instrument was developed and responses were gathered by way of an on-line survey and 349 respondents from U.S.

organizations, which were 78.96% of the users who visited the website. Factor analysis was conducted (separately) for the independent and dependent variables to identify interpretable groupings of questionnaire items. After validating the questionnaire items, stepwise regression analyses were conducted (separately) on Individual Performance and Utilization as dependent variables and the mediation of Utilization was tested. Two analytical techniques Regression and Multivariate Adaptive Regression Splines (MARS), are used to test the model.

The study concluded that System Quality, Ease of Use, and Utilization are positive predictors of Individual Performance. Also, System Quality and Ease of Use have both direct and indirect impacts on Individual Performance. The results confirmed that Utilization is the mediator between the two independent variables: System Quality and Ease of Use and the dependent variable: Individual Performance. Also, Utilization, Authorization, and Documentation each have their statistically significant impact on Performance, but only through interactions. Finally, while System Quality has a direct statistically significant impact on Utilization, Ease of Use, Reliability, Authorization, and Documentation, each have their statistically significant impact on Utilization only through interactions.

The study recommended ERP implementation managers to spend time and effort to make sure that users are satisfied with system quality and ease of use, as these two are identified as the most important factors that contribute to individual performance when using ERP systems. Also, to be useful to organizations, ERP systems must provide data and information that is accurate, current, and sufficient to meet users' needs. Information should provide the right level of detail and be presented in a useful format. In addition, the ERP system should be easy to use for users.

6. (D'Ambra & Wilson, 2004b) "*Use of the World Wide Web for international travel: Integrating the construct of uncertainty in information seeking and the task-technology fit (TTF) model*"

The study aimed to evaluate the performance of the World Wide Web as an information resource in the domain of international travel using an integrated model of the construct of uncertainty in information seeking and TTF model. To test the integrated model, 217 travelers participated in a questionnaire-based empirical study. Multiple regression was undertaken to test the overall model.

The research concluded that the uncertainty is a dimension of TTF. The finding showed that utilization of the web was positively related to performance impact. Also, TTF was positively related to performance impact. The finding is significant in confirming the role of use in information systems models, like TAM and TTF, to measure success.

The study recommended future research to use the same approach and the same metrics.

3.2 Studies adopting TAM model

1. (Godoe & Johansen, 2012) "*Understanding adoption of new technologies: Technology readiness and technology acceptance as an integrated concept*"

This study investigated the relationship between the personality dimensions of Technology Readiness Index (TRI) and the system specific dimensions of Technology Acceptance Model (TAM). Data was collected from 186 employees in various Norwegian organizations. Structural equation modelling (SEM) was conducted in Amos 6.0 to test the relationship between dimensions of TRI and TAM.

The research results showed that optimism and innovativeness significantly influences perceived usefulness and perceived ease of use. Also, the analysis revealed that actual use was directly affected by perceived usefulness, but not by perceived ease of use. In addition, it was implied that both personality dimensions and system specific dimensions are of major importance when adopting new technology.

The study recommended to apply research results. Also, using a combination of the two models in TRAM (Technology Readiness and Acceptance Model) comprises a holistic view.

2. (Yen & Chen, 2008) "*Perspectives from the TRAM (Technology Readiness and Acceptance Model) on Adopting E-Learning: An Analysis of the Chain and Franchise Industry in Taiwan*"

The study aimed to examine data collected from 24 companies in the chain and franchise industry (CFI) in Taiwan using the TRI and TAM models and it was focusing on manager and workers' response in adopting e-Learning technology. Data was gathered through written questionnaires and Internet questionnaire. A total of 250 questionnaires were sent out to 30 companies and 222 responses were received from 24 companies in Taiwan of CFI. There were a total of 217 valid questionnaires with a valid return ratio of 86.8 %. Researchers used confirmatory factor analyses (CFA) for each factor individually using LISREL 8.54.

The research concluded that both the impact of manager and workers' technological readiness show a direct effect related to their perceived usefulness (PU) and perceived ease of use (PEOU). Managers' tendency for technology readiness, as opposed to workers, has a greater effect on perceived usefulness (PU) than perceived ease of use (PEOU). Also, for both managers and workers, perceived usefulness (PU) has no affect toward attitude toward using and use

intention. In addition, both technology readiness and use intention is positively and significantly mediated by perceptions of ease of use (PEOU).

The research recommended future research to address other locations within and outside Taiwan. The attitude toward using should also be researched to find further conclusions on comparison in different fields such as comparison between working environment and academic fields. Finally, the size and category of the company may be critical factors in adopting e-Learning.

3. (Wu, Shen, Lin, Greenes, & Bates, 2007) "*Testing the technology acceptance model for evaluating healthcare professionals' intention to use an adverse event reporting system*"

The study aimed to investigate what determines acceptance of adverse event reporting systems by healthcare professionals using an integrated model of TAM with trust and management support variables. This study presents an extended technology acceptance model that integrates variables trust and management support into the model. The proposed model was empirically tested using data collected from a survey in the hospital environment. The structural equation modeling (SEM) technique was used for data analysis.

The research results indicated that perceived usefulness, perceived ease of use, subjective norm, and trust had a significant effect on a professional's intention to use an adverse event reporting system. Also, perceived ease of use and subjective norm also had a direct effect on perceived usefulness and trust, respectively. In addition, management support had a direct effect on perceived usefulness, perceived ease of use, and subjective norm.

The research recommended to understand the factors contributing to behavioral intent to be used in system development to predict reporting systems acceptance. Also, reporting should feel comfortable and assured to be free of negative consequences. Finally, managers should support and motivate reporting publicly.

4. (Ma & Liu, 2004) "*The technology acceptance model: A meta-analysis of empirical findings*"

The goal of this study was to understand to what extent the existent body of literature reflects substantial and cumulative validity of TAM. The study reviewed the literature on TAM and conducted a meta-analysis based on 26 selected empirical studies in order to synthesize and analyze the existing empirical findings on the TAM. Based on the 26 selected studies, 102 correlations were obtained.

The research results in general confirm Davis' original findings. Based on the results, it was concluded that both the correlation between usefulness (PU) and acceptance (TA), and that between usefulness (PU) and ease of use (PEOU) are somewhat strong. However, it was concluded that the relationship between ease of use (PEOU) and acceptance (TA) was weak.

The research recommended future research to include individual and task characteristics in order to understand the weak PEOU-TA contingency. Also, more future studies are needed to resolve uncertainty of the relationship between PEOU and TA.

5. (Yi & Hwang, 2003) "*Predicting the use of web-based information systems: self-efficacy, enjoyment, learning goal orientation, and the technology acceptance model*"

The study aimed to predict the use of Web-based information systems through extending the technology acceptance model (TAM) by the motivation variables of self-efficacy, enjoyment, and learning goal orientation. One hundred nine subjects participated in the study, which was conducted in a field setting with the Blackboard system, a Web-based class management system. A survey was administered after a 2-week trial period and the actual use of the system was recorded by the Blackboard system over 8 weeks. Based on a sample size of 109 students, PLS approach was used for data analysis.

The research results largely support the proposed model, highlighting the important roles of self-efficacy, enjoyment, and learning goal orientation in determining the actual use of the system. In this study, enjoyment was a significant determinant of usefulness whereas ease of use was a non-significant determinant. In the presence of enjoyment, ease of use no longer had a significant effect on usefulness

The study recommended that application-specific self-efficacy is one of the other variables that should be considered with behavioral intention. Further research is needed to identify the conditions under which TAM does not fully mediate the effect of self-efficacy on system use, and under which self-efficacy becomes more powerful than behavioral intention in predicting system use. Also, future research is recommended to include other motivational variables to further extend the proposed model.

3.3 Studies integrating TTF and TAM models

1. (Ali & Younes, 2013) "*The Impact of Information Systems on User Performance: An Exploratory Study*"

This study was developed to answer the question related to the impact of information systems on user performance in Tunisian companies. The study proposed a model combining the Task Technology Fit (TTF), the Technology Acceptance Model (TAM) and Delone & McLean model to evaluate the performance of users in the Tunisian organizations. The model was tested using survey data collected from 314 users of the information system. AMOS structural equation 18 were used to test the relationships between variables in the model. Also, the exploratory analysis was conducted in SPSS 17.

The research results show that TTF, system quality and information quality directly influences the performance of users and indirectly through perceived usefulness and perceived ease of use. In addition, the TTF and the system quality play an important role in improving the performance quality and increase the volume of users work. This study provided further evidence of the appropriateness of extending the models of TTF, TAM and Delone & McLean as a useful means to provide an overview on the most important aspects of the IS impact on user performance.

The research recommended researchers and practitioners in IS to maximize IS impacts by improving training and organizational support. Also, careful consideration of user needs and requirements of working in a particular industry will help IS designers to design and implement information systems in the light of the diversity of suppliers, designers, functionality of IS and industries. In addition, the study recommended the future research to improve some measurement scales of variables, including scales measuring perceived usefulness and perceived ease of use.

2. (Ma, Chao, & Cheng, 2013) "*Integrating Technology Acceptance Model and Task-Technology Fit into Blended E-Learning System*"

The study proposed a research framework to examine the determinants of nurse's learning satisfaction in a Blended E-Learning System (BELS) environment based on task-technology fit and the technology acceptance model. The study integrated Task-Technology Fit (TTF), computer self-efficacy, the Technology Acceptance Model (TAM) and user satisfaction to hypothesize a theoretical model to explain and predict user's behavioral intention to use a BELS. Questionnaires were distributed to local community hospitals, regional hospitals and medical centers in central Taiwan. From the 900 distributed questionnaires, 650 completed

questionnaires were collected. Structural Equation Modeling (SEM) was used for PLS data analysis.

The research results showed that perceived usefulness is an important factor affecting the behavioral intention to use a BELS. The findings provided support for the hypothesized positive effect of task characteristics and technology characteristics on TTF. In addition, the empirical results indicated that TTF and perceived ease of use have high prediction rates in explaining the perceived usefulness of a BELS. Also, the results proved the hypothesized effect of perceived usefulness on user satisfaction.

The research recommended researchers to include other types of hospitals as samples in future research to confirm and refine the study findings. Also, the futures studies are recommended to address the factors contributing to cultural differences Future research should also try to uncover additional determinants of nurses' behavioral intention or learning performance using a BELS.

3. (Dishaw, Eierman, Iversen, & Philip, 2013) "*An Examination of the Characteristics Impacting Collaborative Tool Efficacy: The Uncanny Valley of Collaborative Tools*"

This study employs a combination of the Technology Acceptance Model (TAM) and the Task-Technology Fit (TTF) model to compare four different technologies (Ms. Word/email, Twiki, Google Docs and Office Live) that used to support the task of collaboratively creating and editing a report. Four variables from the research model (Task-Technology Fit, Perceived Ease of Use, Perceived Usefulness, and Perceived Effort of Collaboration) are measured and statistically analyzed to understand this impact. The study is based on teaching the course "Essentials of IS," which is required for all business majors in the College of Business where the study took place. Data was collected in the Fall 2007, Fall 2008, Spring 2009, Fall 2009, Spring 2010, Fall 2010, Spring 2011, Fall 2011, and Spring 2012 semesters, with a total of 1002 students participating in the study. Hypothesis testing was performed via one-way ANOVA to test for significant differences in the variable means.

Based on research findings, Task-technology fit was determined to be essentially the same for Word/email and Google Docs. Also, Task-technology fit of Word/email and Google Docs was determined to be significantly higher than for either Twiki or Office Live. In addition, the study suggested that Word/email and Google Docs outperform Twiki and Office Live due to tool experience and superior Task-Technology Fit that may be due to the sophistication of the writing and editing tool, support for collaboration, and the clarity of the collaboration process.

Based on research recommendations, adequate training on the use of unfamiliar tools is important for effective use by students because student experience and familiarity with the tool plays a significant role in their perception of the tool. The study recommended future studies to develop an ability to predict the choice of technology based on technology characteristics and user attributes. Also, research findings and others' experience are valuable resources and should be used in making the decision.

4. (Lin, 2012) "*Perceived fit and satisfaction on web learning performance: IS continuance intention and task-technology fit perspectives*"

This study aimed to integrate information system (IS) continuance theory with task-technology fit (TTF) to extend the understandings of the precedents of the intention to continue (VLS) and their impacts on learning. Factors of technology-acceptance-to-performance, based on TAM and TTF, and post-technology-acceptance, based on expectation–confirmation theory, models were included to test in one study. The participants of this study were students at a major university in the south of Taiwan. The perceptions of 165 respondents were collected and analyzed using PLS technique.

The research results revealed that perceived fit and satisfaction were important precedents of the intention to continue VLS and individual performance. Also, the results revealed that perceived fit was related to perceived satisfaction. The findings proved that VLS continuance intention was related to positive impacts perceived by learners. Finally, results revealed there were direct effect between Perceived Fit (PF) to impacts on learning (PIL) and Satisfaction (SA) to PIL.

Based on research recommendations, the results highlighted the importance of the perceived fit of and satisfaction with a VLS, in the case of the adoption of an web-based learning system. For future research, an organized interview with more participants should be conducted to collect more insights. Also, caution must be taken when adapting the study findings and discussions to other cases of information systems.

5. (Misron, Shaffiei, & Hamidi, 2011) "*Measurement of User's Acceptance and Perceptions towards Campus Management System (CMS) Using Technology Acceptance Model (TAM)*"

This study use TAM and TTF Model in order to measure the degree to which an organization's information systems and services meet the information needs of its users. The study focused on the users' acceptance and perceptions of using Campus Management System (CMS) mainly for academic module which was specially developed for an educational institution which is International Education Centre (INTEC). The interview session had been running

among Information Technology Unit (IITU) staff who were responsible for the CMS execution. Also, data was gathered from the distribution of the questionnaire. The respondents are consisting of all lecturers, head of programs and executive officers. The analysis of the collected data has been done by using SPSS Version 17.0.

Based on study findings, TAM's factors Perceived Ease Of Use (PEOU), Perceived Usefulness (PU), Behavioral Intention (BI) and Actual Use (AU) did not have significant different with Gender. Also, working Status showed significant different towards satisfaction level on CMS. Teaching programme showed significant different towards satisfaction level on CMS. In addition, there is a significant relationship between TTF and PU with moderate positive correlation. Also, there is a significant relationship between TTF and PEOU with moderate positive correlation. Finally, there is also moderate positive significant correlation between PU and PEOU, and a positive moderate correlation between PU and BI.

Based on research recommendations, rather just focusing on the academic module of the CMS, the future research is suggested to broad up the scope to the rest of the modules left in the system which are General, Administration, Finance, and Student Affair. Research on Business Process Reengineering (BPR) regarding to CMS also can be suggested as the scope for the future research.

6. (Schrier et al., 2010) "*Merging Task-Technology Fit and Technology Acceptance Models to Assess Guest Empowerment Technology (GET) Usage in Hotels*"

The study aimed to examine the factors that affect the usage of guest empowerment technologies (GET) in hotels and to assess the technology usage through examining the constructs of a hybrid task-technology fit (TTF)/technology acceptance model (TAM). Data were collected via a nation-wide online survey. An invitation to take the survey was sent via e-mail to a panel of 25,000 potential participants. The survey questions were designed to measure elements of the TTF model: task characteristics, technology characteristics, experiential characteristics, and fit. In addition, several of the questions were designed to measure factors related to the TAM. Those factors are Perceived Ease of Use, Perceived Usefulness, and Intention to Use. Structural equation modeling (SEM) was used to examine the proposed model. This analysis was conducted with the use of the EQS statistical software program.

The research concluded that a user's individual experiential characteristics had a significant negative relationship with fit of GET. Also, the technology and task characteristics had a significant positive relationship with fit of GET. An

examination of the research model revealed that task characteristics and technology characteristics were good predictors of fit. The results also show that fit (TTF) has a significant positive relationship with perceived ease of use (PEU). The analysis also revealed that there is a significant positive relationship between fit (TTF) and perceived usefulness (PU).

The study recommended to replicate this study in the future because the products and services are constantly changing due to the rapid evolving in the technology industry field.

7. (Usoro et al., 2010) "*Task-Technology Fit and Technology Acceptance Models Applicability to E-Tourism*"

This study aimed to use the superior explanatory power of the combined TAM/TTF model to explore the user acceptance and utilization of the tourism e-commerce websites. Data collection for the study was done both online and physically. 159 valid responses were returned out of the 250 questionnaires distributed to different individuals, representing a response rate of 63.6%. In testing the hypotheses, Pearson bivariate correlations and multiple regression analysis in SPSS were used for data analysis.

The research concluded that perceived ease of use, and perceived usefulness were positively related to intention to use tourism websites. Also, perceived usefulness, and intention to use were positively related to actual use of tourism website. Task-technology fit was positively related to perceived usefulness of tourism web sites. Also, task-technology fit was positively related to perceived ease of use of tourism web sites. Task-technology fit was positively related to the intention to use tourism web sites. The study also found support for a model that extends TAM with TTF in the prediction of user's utilization or adoption of tourism websites.

The research recommended tourism operators and Web developers to note that making the tourism websites with functionalities that meet the tasks of the user, and that the user find useful means that the user will use the websites and that the businesses will acquire and maintain customers. To ensure task-technology fit, developers should try to uncover the needs and the tasks that their customers intend to realize with the use of the websites before embarking on the actual application development.

8. (Strong, Dishaw, & Bandy, 2006) "*Extending task technology fit with computer self-efficacy*"

This study aimed to investigate the relationship between Computer Self-efficacy (CSE) and the combined Technology Acceptance and the Task-Technology Fit Model. This study proposed a model that extends the Task-Technology Fit (TTF) model with the Computer Self-Efficacy (CSE) construct. The domain of this study was the utilization of modeling tools by business students. The TTF models are estimated using PLS.

The study revealed that computer self-efficacy (CSE) in a TTF model increases the explanatory power of the model over one with only task characteristics, technology functionality, and the fit. Also, CSE has a direct effect on tool utilization. In addition, CSE has no significant interaction, i.e., fit, effects.

9. (Klopping & McKinney, 2004) "*Extending the Technology Acceptance Model and the Task-Technology Fit Model to Consumer E-Commerce*"

The key purpose of this study was to determine the features of workplace technology adoption models in modeling consumer e-commerce. The researchers first reviewed the TAM and its use in online shopping studies, followed by the combined model with hypotheses. The study treated consumer e-commerce as a technology adoption process and evaluated the suitability of two popular adoption models to predict consumer online shopping. Specifically, the study examined the technology acceptance model (TAM) and a model that combined TAM with the task-technology fit (TTF) model. A web-based survey of 263 undergraduates was used. To test the hypotheses, confirmatory factor analysis using the CALIS procedure in SAS was used.

In TAM model, it was concluded that TAM predicts the intention to use and actual use. The study also found support for a model that includes TTF and the TAM to predict consumer intentions. In workplace technology adoption, a combined TTF/TAM is superior to the TAM only. The study support the expected strong association between TTF and Perceived usefulness. It was found that TTF also affects perceptions of ease of use. The study suggested perceptions of usefulness are more related to use than perceptions of ease of use.

The study recommended developers of the website to address usefulness to the user, rather than focusing on how easy the site is to use. For each of potential tasks that a website may serve, the developer should assess how well the site fits these needs. Clearer identification and specification of the task may improve the predictive power of the models. Also, the researchers suggested further study.

10. (Dishaw & Strong, 1999) "*Extending the Technology Acceptance Model with Task–technology Fit Constructs*"

The study aimed to propose an integrated model that extend TAM to include TTF constructs. Researchers examined the theory underlying TAM and TTF and assessed their similarities and differences, which provides the theoretical foundation for our integrated TAM/TTF model. Data was collected using questionnaires administered to maintenance programmers from 60 maintenance projects in three organizations. The integrated IT utilization model was analyzed using path analysis, specifically the AMOS package in SPSS for Windows.

The research concluded the integrated model provides more explanatory power than either model alone. An unexpected result is the lack of a direct path between TTF and perceived usefulness. In addition to the strong effect of tool experience on perceived ease of use, tool experience is also associated with perceived usefulness. Perceived ease of use is also affected by TTF, that is, when fit between the task and the tool is higher, users perceive the tool to be easier to use for that task. Results showed a negative relationship between task characteristics and TTF, and showed a positive relationship between tool functionality and TTF.

Based on research recommendations, using the integrated model should lead to a better understanding of choices about using IT. Also, the lack of a direct path between TTF and perceived usefulness, deserves further study.

3.4 Studies related to IS Success and User Satisfaction

1. (Al-Mamary, Shamsuddin, & Aziati, 2015) "*The Pilot Test Study of Relationship Between Management Information Systems Success Factors and organizational performance at Sabafon Company in Yemen*"

This paper investigates the relationship between technological factors (system quality, information quality, and service quality), organizational factors (top management support, and user training), and people factors (computer self-efficacy, and user experience) with organizational performance, focusing on people who are always associated with MIS in their work. Data was collected using a survey questionnaire that sent to Sabafon company and 104 responses are gathered .The resultant responses were analyzed with Pearson correlation.

The study concluded a positive correlated relationship between system quality, information quality, service quality, top management support, user training, computer self-efficacy, and user experience with organizational performance at Sabafon Company in Yemen.

2. (Al-Mamary, Shamsuddin, & Aziati, 2014) "*Factors Affecting Successful Adoption of Management Information Systems in Organizations towards Enhancing Organizational Performance*"

This study aimed to propose a theoretical framework that takes into consideration the technological, organizational and people dimensions that might affect MIS adoption in organizations. This study focused deeply on the characteristics that lead to successful adoption of MIS in organizations, and to investigate the effect of MIS in organizational performance. The study examined empirically the impact of system quality, information quality, service quality, top management support, end-user training, technology self-efficacy, and user experience on perceived usefulness and user satisfaction toward impact on organizational performance. A theoretical framework is proposed based on the literature and interviews with some of the employees of telecommunications companies in Yemen. In the future, the authors intend to test empirically the research model as a subsequent phase of this study.

The study concluded that the main problem that hinder the successful adoption of MIS in telecommunication companies, are system quality, information quality, service quality, top management support, end-user training, technology self-efficacy, and user experience. Also, the study proposed a theoretical framework that takes into consideration the technological, organizational and people dimensions that might affect MIS adoption in organizations based on the literature and interviews with some of the employees of telecommunications companies in Yemen.

The study recommended organizations to understand the factors that affect successful adoption of MIS toward enhancing the organizational performance. A subsequent phase of this study should be the empirical testing of the research model.

3. (Hussein, 2009) "*An empirical investigation of information systems success: an analysis of the factors affecting banking information systems success in Egypt*"

This study aimed to propose a model which investigates the success of information systems in the banking industry in order to help bank managers to evaluate the success of their IS, to be able to develop these systems and to improve the performance of bank managers and employees. The study proposed a research model consisting of a number of key potential demographic and situational variables, in addition to the DeLone and McLean (D&M) updated model. The proposed research model was classified into three research models of bank managers differentiated by age groups. This study has chosen the quantitative (deductive) approach to answer the research questions and test the

research hypotheses. The research methodology of this study involved interviews with Banking Information System (BIS) practitioners and professionals to shape and refine the research model. Also, questionnaire survey was employed to collect data from bank managers in Egyptian banks. The number of distributed questionnaires was 580 in 25 banks and 257 responses were collected. Structural Equation Modelling (SEM) using Partial Least Square (PLS) was used to test the research model.

Initial findings of this study reported different results in each research mode of the three models which are classified based on age groups. For the young age group of bank managers, results showed that system quality, age and length of system use influence user satisfaction. Also, for the young age group, findings did not support the relationship between information quality, service quality and user satisfaction. Also, the level of training had a direct relationship with system quality, service quality and user satisfaction. For the middle age group of managers, results indicated that information quality, service quality, age and length of system use had an effect on user satisfaction. Also, findings revealed that level of training had a direct relationship with system, information and service quality. Regarding the older age group, information quality, service quality, user involvement, top management support, age and length of system use had a direct effect on user satisfaction.

The research recommended bank management to benefit from the mutual relationship of User satisfaction with individual impacts by developing banking decision systems, using expert systems and computer networks for electronic information exchange, to increase BIS satisfaction and consequently increase managers' job performance. Also, flexibility in designing and implementing BISs is important to continually evaluate the IS satisfaction and have the flexibility of changing BISs when required.

4. (Karimi et al., 2004) "*Impact of Environmental Uncertainty and Task Characteristics on User Satisfaction with Data*"

The study focused on using IS and organizational theories to investigate the impact of environmental uncertainty and task characteristics on user satisfaction with data by using IS and organizational theories. Responses were matched from 77 CEOs and 166 senior managers, who were end users of IS from profit-oriented organizations. The Partial Least Squares technique was used for data analysis.

The research results indicated that environmental uncertainty has a positive impact on task characteristics. Also, "Task Characteristics" has a direct and mediating impact on user satisfaction with data.

The research recommended future research to examine other potentially mediating factors that affect the association between environmental uncertainty. Also, future research should include time-critical tasks, decision-making speed, and decision making in high-velocity environments, in the measures of task characteristics.

5. (Aiesh, 2014) "*The factors affecting the students' acceptance of the wireless network services, case study of Islamic University of Gaza*"

This study aimed to address the factors affecting students' acceptance towards using the wireless network at the Islamic University of Gaza. The research framework model was derived from the TAM model that explains the relation among perceived usefulness, usage intentions and ease of use and the DeLone & McLean model for the success of Information Systems that explains the relation among information quality, quality of the information system, service quality, usage intentions and ease of use with the overall benefits of information systems. Questionnaires were distributed to 410 students at The Islamic University of Gaza (IUG), and 379 questionnaires were returned. A descriptive approach was used as an analysis methodology.

The research concluded that a significant statistical relationship exists between Information Quality, Service quality, System Quality, and Technical Support with the Perceived Usefulness of wireless network system at IUG. A significant statistical relationship also exists between Information Quality, Service quality, System Quality, and Technical Support with the Perceived Ease of Use of wireless network system at IUG. In addition, a significant statistical relationship exists between the Perceived Usefulness and the Use of wireless network system at IUG. Finally, a significant statistical relationship exists between the Perceived Ease of Use and the Use of wireless network system at IUG.

The study recommended to raise awareness on the importance of wireless network's usage. Also, the university has to enhance the quality of the wireless services and to improve the technical support.

6. (Zaied, 2012) "*An Integrated Success Model for Evaluating Information System in Public Sectors*"

This study aimed to generate an integrated model for evaluating Information System (IS) success factors, affecting information systems in public sector in Egypt, through modifying the dimensions of the TAM and D&M IS Success Models and adding additional two success dimensions (Management support and Training). The proposed model has been validated by an empirical study based on a questionnaire and interview. The questionnaire consists of thirty four elements with 68 statements was used to collect data. A sample of 500 participants belonging to ten large organizations in Egypt was selected randomly.

Questionnaire distribution and returns were by Email. A total of 320 questionnaires were returned for participants who expressed their opinions regarding the proposed dimensions. Pearson correlation was used to examine the relation between the proposed model dimensions.

The research results indicated that information quality has a strong significant influence on IS success, Behavioral intention, Perceived usefulness, and user involvement. The findings also indicated that services quality can assist and enhance system usage and in turns IS success. In addition, the improvement of information quality; perceived usefulness; service quality and perceived ease of use will strengthen user involvement; behavioral intention and user satisfaction.

The research recommended system designers to make full use of the completeness; understandability; security; availability; and accuracy of information to increase behavioral intention and user satisfaction to use IS. Also, system designers should actively seek methods of improving system security; system availability; system compatibility; system privacy; and system maintainability since these elements significantly affect IS success.

3.5 General Commentary on Reviewed Studies

Many studies addressed the field of IS assessment. Some of the studies aimed to test previously studied models as D&M success, TAM, and TTF models through applying these models in new situations. Other studies proposed some modifications on these models to present new interpretation for the characteristics of successful Information Systems. Based on reviewing the previous studies, some notes can be highlighted in this section.

3.5.1 Aspects of the agreement

1. **Environment of the Study**

   The current study agrees with the most of the previous studies, in that they addressed similar environments. These studies targeted the work environment of employees, who use management information systems in their work, in various organizations. For example, the study of (Godoe & Johansen, 2012) targeted the work environment of employees who work for Norwegian organizations. Also, the study of (Luarn & Huang, 2009) was applied on the work environment of government employees in Taipei City. The study of (Hussein, 2009) studied banking information systems in Egypt, and the study of (Wu et al., 2007) was applied on the employees who worked in a hospital environment. In addition, the following studies were applied in similar environments: (El Said, 2015), (Al-Mamary et al., 2015), (Ma et al., 2013), (Ali & Younes, 2013), (Godoe & Johansen, 2012), (Zaied, 2012), (Misron et al., 2011), (Yen & Chen, 2008), (Lin & Huang, 2008), (Yen & Chen, 2008), (Wu et al., 2007), (Kositanurit et al., 2006), and (Karimi et al., 2004).

2. Models and Variables

The current study agrees with most of the previous studies regarding combining two or more of theoretical models to study information systems. For example, the study of (Ali & Younes, 2013) is similar to the current study, as it proposed a model combining the TTF, TAM and Delone & McLean IS success model to evaluate the performance of users in the Tunisian organizations. Also, the study of (Ma et al., 2013) integrated TTF, computer self-efficacy, TAM and user satisfaction to hypothesize a theoretical model to explain and predict user's behavioral intention to use an information system. Other studies used models that integrate TTF and TAM to study information systems, e.g.; the studies of (Dishaw et al., 2013), (Lin, 2012), (Misron et al., 2011), (Schrier et al., 2010), (Usoro et al., 2010), (Klopping & McKinney, 2004), and (Dishaw & Strong, 1999).

Some studies had examined the relationships of Task Characteristics, Technology Characteristics, and Individual Characteristics (Computer Self-Efficacy), with Task-Technology Fit; as the studies of (El Said, 2015), (Ma et al., 2013), (Schrier et al., 2010), (Luarn & Huang, 2009), (Lin & Huang, 2008), (Strong et al., 2006), and (Dishaw & Strong, 1999). In addition, some studies had examined the impact of Task-Technology Fit, on Perceived Usefulness and Perceived Ease of Use; as the studies of (Misron et al., 2011), (Schrier et al., 2010), (Usoro et al., 2010), and (Dishaw & Strong, 1999).

3. Methodology and Study Tools

Most of previous studies had adopted methodologies which are similar to the methodology which has been adopted by the current study. The current study agrees with most of previous studies in using the questionnaire as a research tool to collect primary data. Example of the studies that had gathered data using a survey; (Al-Mamary et al., 2015), (Ali & Younes, 2013), (Misron et al., 2011), (Schrier et al., 2010), (Usoro et al., 2010), (Hussein, 2009), (Gu & Wang, 2009), (Wu et al., 2007), (Kositanurit et al., 2006), (Karimi et al., 2004), and (Dishaw & Strong, 1999).

4. Analysis Methods

The current study agrees with most of previous studies in using the Structured Equation Modelling (SEM) techniques were used for data analysis, but using various software programs. For example, Partial Least Squares (PLS) was used for model analysis in the studies of (El Said, 2015), (Ma et al., 2013), (Lin, 2012), (Hussein, 2009), (Lin & Huang, 2008), (Strong et al., 2006), (Karimi et al., 2004), and (Yi & Hwang, 2003). Also, the following studies had adopted SEM for data analysis using different software tools; (Godoe & Johansen, 2012), (Gu & Wang, 2009),(Yen & Chen, 2008), (Wu et al., 2007), (Ali & Younes, 2013), (Schrier et al., 2010), and (Dishaw & Strong, 1999).

3.5.2 Aspects of the disagreement

1. **Environment of the Study**

   Some of these previous studies had addressed environments which were different of the environment that the current study addresses. For example, the study of (Lin, 2012) was applied on students at a major university in the south of Taiwan. Also, the study of (Schrier et al., 2010) was applied on systems used at hotels. The study of (Gu & Wang, 2009) targeted undergraduate college students. In addition, the following studies were applied in different environments; (Aiesh, 2014), (Dishaw et al., 2013), (Usoro et al., 2010), (Strong et al., 2006), (Klopping & McKinney, 2004), (D'Ambra & Wilson, 2004b), (Ma & Liu, 2004), (Yi & Hwang, 2003), and (Dishaw & Strong, 1999).

2. **Models and Variables**

   To study information systems, some of the previous studies had used TTF, TAM, or Delone & McLean model individually. For example, the studies which used the TTF model alone includes the studies of (El Said, 2015), (Gu & Wang, 2009), (Luarn & Huang, 2009), (Lin & Huang, 2008), (Kositanurit et al., 2006), and (D'Ambra & Wilson, 2004b). On the other hand, some studies adopted the TAM model alone, as the studies of (Godoe & Johansen, 2012), (Yen & Chen, 2008), (Wu et al., 2007), (Ma & Liu, 2004), and (Yi & Hwang, 2003). Furthermore, some studies adopted the Delone & McLean IS success model, as the studies of (Al-Mamary et al., 2015), (Hussein, 2009), and (Karimi et al., 2004).

   Moreover, the current study is different of the previous studies in that it included a new variable, User Satisfaction, to the research model to examine its relationship with Task-Technology Fit.

3. **Methodology and Study Tools**

   The current study disagrees with some of previous studies because the questionnaire was not the only tool that had been used to collect primary data. For example, the study of (El Said, 2015) started with exploratory study, where interviews were conducted, then a survey was conducted. In addition, the current study has surveyed all the subjects of the population which the current study targets, whereas most of the previous studies had used sampling. For example, the study of (Luarn & Huang, 2009) had used stratified proportion sampling method. Examples of studies that also used sampling; (Aiesh, 2014), (Ma et al., 2013), (Lin, 2012), (Godoe & Johansen, 2012), (Yen & Chen, 2008), (Lin & Huang, 2008), (D'Ambra & Wilson, 2004b), (Klopping & McKinney, 2004),and (Yi & Hwang, 2003).

4. **Analysis Methods**

   The current study disagrees with some of previous studies because the Structured Equation Modelling (SEM) techniques were not used for data analysis. For example, in the studies of (Luarn & Huang, 2009), (D'Ambra & Wilson, 2004b), the multiple regression method was used. Also, the following studies had used statistical techniques other than SEM; (Al-Mamary et al., 2015), (Aiesh, 2014), (Dishaw et al., 2013), (Misron et al., 2011), (Usoro et al., 2010), (Kositanurit et al., 2006), (Ma & Liu, 2004), and (Klopping & McKinney, 2004).

3.5.3 Drawn Benefits from Previous Studies

1. Task-Technology Fit model can be useful in IS assessment process.
2. Many studies proposed integrated models through merging models including TTF, TAM, and D&M models to present new description for the factors IS success.
3. It is obvious that the researchers in the field of IS evaluation continuously try to determine more factors that may influence IS success through proposing new modification for the models that previously studied by other researchers.
4. It is recommended to replicate the studies in the field of IS assessment in the future because the products and services are constantly changing due to the rapid evolving in the technology industry field.
5. Previous studies had used various methodologies and techniques for collecting and analyzing information in the empirical parts of the studies.
6. Many studies agree in using the structural equation modeling (SEM) approach in statistical analysis for integrated models, and used various software as AMOS an PLS.
7. It can be inferred from the previous studies that it is important for organizations to understand the factors that affect successful adoption of MIS.
8. Previous studies confirmed the important role that Information Systems play toward enhancing the organizational performance.
9. A little number of local and Arabic studies were adopted TTF model to study MIS acceptance and success factors.
10. This study will attempt to build on the strengths of the previous studies and to overcome their limitations.

3.5.4 Distinguishing Aspects of the Current Study

1. This is the first study that addresses the Management Information Systems used in RSSP of UNRWA in Gaza strip.
2. The current study attempts to add to the research literature of this field, through including an important IS success dimension, User Satisfaction, beside TTF and TAM, to examine its relationship with Task-Technology Fit.
3. The current study creates and examines a research model, with variables derived from three models; TTF, TAM and D&M IS Success, to study the user acceptance and the IS success of the currently used MIS in RSSP.
4. In addition, a new analytical approach will be adopted for data analysis, via using Partial Least Squares Structural Equation Modeling (PLS-SEM), using SmartPLS software.

3.6 Chapter Summery

Chapter 3 presented previous studies which had addressed the same models and variables of the current study. These studies have been classified in four sections. The first section included the studies that adopted TTF model. The second section included the studies that adopted TAM model. The third section included the studies that integrated TTF and TAM models. The fourth section included the studies that were related to IS success and User Satisfaction. Finally, the researcher registered a general commentary on reviewed studies.

In Chapter 4, the researcher will explain the research design and methodology in detail.

Chapter 4

Research Design and Methodology

4.1 Introduction

This chapter discusses the research methodology adopted by the current study to achieve research objectives. It begins with the methodology that includes research design and procedure, and characteristics of the population. Then, it describes primary and secondary data collection sources, and questionnaire design. Also, it presents the statistical methods and tools used to carry out the research to answer the research questions and to examine the research hypotheses. Finally, it presents the pilot study, and the statistical analysis used to test the research questionnaire for validity and reliability.

4.2 Research Methodology

In the current study, descriptive analytical and quantitative (deductive) approaches have been followed in conducting the research, which are considered the most appropriate methods for this kind of research. A questionnaire was used to collect the primary data of the survey. For data analysis, many statistical analyses by SPSS and SmartPLS are applied.

4.3 Research Population and Sample

Current study is interested in studying of RSSP's area offices which are composed of 16 offices and include about 350 employees. The study regards the population as the employees, with long-term contracts, who work in the area offices and who deal with Management Information Systems. Therefore, 76 workers, who are not related to the study, were excluded. Therefore, the research population composed of 274 employees. **Table (4.1)** below shows the number and the percentage of employees composing the population distributed according to area offices:

Table (4.1): Research Population distribution according to RSSP's Area Offices

	Area Office	Number of Employees (Population)	Percent
1.	B/Hanoun Office	12	4.38%
2.	Bureij Office	16	5.84%
3.	D/ Balah Office	15	5.48%
4.	Gaza East Office	14	5.11%
5.	Gaza North Office	19	6.93%
6.	Gaza South Office	14	5.11%
7.	Gaza West Office	17	6.20%
8.	Jabalia North Office	15	5.48%
9.	Jabalia Office	19	6.93%
10.	K/Younis East Office	26	9.49%
11.	K/Younis West Office	20	7.30%
12.	Maghazi Office	17	6.20%
13.	Nuseirat North Office	15	5.48%
14.	Nuseirat South Office	16	5.84%
15.	Rafah East Office	19	6.93%
16.	Rafah West Office	20	7.30%
	Total	**274**	**100.00%**

Source: derived from RSSP's Attendance Information System as of 12th March 2016

A census of all members was used to collect data from the targeted research population. 217 responses were received out of 274 questionnaires were distributed. The response rate was 79.20% of the population, which is suitable for PLS analysis. The distribution of the respondents on the area offices is shown in **Table (4.2)**.

Table (4.2): Distribution of respondents according to RSSP's Area Offices

	Area Office	Number Of Respondents	Percent
1.	B/Hanoun Office	12	5.53%
2.	Bureij Office	13	5.99%
3.	D/ Balah Office	8	3.69%
4.	Gaza East Office	14	6.45%
5.	Gaza North Office	13	5.99%
6.	Gaza South Office	9	4.15%
7.	Gaza West Office	16	7.37%
8.	Jabalia North Office	14	6.45%
9.	Jabalia Office	19	8.76%
10.	K/Younis East Office	21	9.68%
11.	K/Younis West Office	11	5.07%
12.	Maghazi Office	11	5.07%
13.	Nuseirat North Office	15	6.91%
14.	Nuseirat South Office	11	5.07%
15.	Rafah East Office	11	5.07%
16.	Rafah West Office	19	8.75%
	Total	**217**	**100.00%**

4.4 Data collection

Different tools were utilized to collect primary and secondary data as follows:

4.4.1 Secondary data

To introduce the theoretical literature, the following data sources are used:

- Books and references.
- Published theses, papers, articles and similar previous studies.
- Reports and statistics published by RSSP of UNRWA.
- Web sites and electronic versions.
- Statistics published by Palestinian Central Bureau of Statistics (PCBS).

4.4.2 Primary Data

Primary data was collected by means of a questionnaire that was derived from previous research and was adapted to suit the case of the current research. The questionnaire was developed and piloted before distribution in order to validate the content of questionnaire in terms of logic, accuracy, validity, and reliability . The final version of the questionnaire was distributed to all subjects of research population, to collect the primary data regarding the factors of the research variables. In addition, RSSP reporting and information officer was communicated and UNRWA RSSP's portal website was used to gather information related to RSSP's activities which was very important to understand situation of the study.

4.4.3 Questionnaire Design

A questionnaire was designed and prepared for this study based on the proposed study model and it was derived from the measurement instruments used in the previous research and from the definitions provided in the literatures of MIS. These measurement scales were adapted to suit the situation of the current study. The original questionnaire was developed in English. Because Arabic is the native language for employees who work in RSSP's Area Offices in Gaza Strip, the questionnaire was translated into Arabic to avoid communication problems. The Arabic version of the questionnaire was validated by a group of academics from different universities. Then, the questionnaire was piloted before distribution in order to test it for reliability and validity.

The final version of the questionnaire consisted of two parts. The first part is designed to identify the demographic characteristics of the respondents such as gender, age, experience and occupation. In the second part, all research variables were measured using multi-item scales. Likert seven-point scale ranging from "strongly disagree" to "strongly agree" was used for all questions in the second part. This part consists of 7 measurement scales including a series of 52 questions regarding the *Task Characteristics, Technology Characteristics, Computer Self-Efficacy, Task-Technology Fit, Perceived Usefulness, Perceived Ease of Use,* and *User Satisfaction*. The final version of the questionnaire is included in ***Appendix A*** and ***Appendix C*** in English and Arabic.

4.4.4 Measures

Based on Goodhue (1995), the construct of task characteristics examines the aspects of a specific function that a user must accomplish in order to complete an intended goal. For technology characteristics, its construct measures the attributes of the specific technologies that are examined (Schrier et al., 2010). In this study, the construct of individual characteristics have been replaced with that of computer self-efficacy. The construct of computer self-efficacy examines the attributes inherent to each specific user (Dishaw & Strong, 1999, p. 10). Also based on Goodhue (1995), the construct of task-technology fit is used to measure the extent to which a specific technology matches a user's personal needs.

As defined by Davis (1993), perceived usefulness is related to a user's belief that a new technology will improve the user's performance while perceived ease of use investigates a user's belief that using or learning a new technology will be relatively effortless (Dishaw & Strong, 1999, p. 10). In addition, the current study adopts the definition of DeLone and McLean (2002) for user satisfaction who defined it as "Recipient response to the use of the output of an information system". The measurement scale used to measure user satisfaction is derived from the DeLone and McLean (1992) study, and depending on the study of Zaied (2012, p. 822).

4.5 Statistical Analysis Tools and Statistical Tests

The researcher has used both descriptive and quantities data analysis methods. To examine research hypotheses and to answer research questions, the researcher has applied the following statistical methods:

1. Pearson Correlation for Validity.
2. Cronbach's Coefficient Alpha for Reliability.
3. One-sample T-test Analysis.
4. SEM-PLS Analysis:
    a. Measurement Model Evaluation;
    b. Structural Model Evaluation.

In addition, the researcher has used the following statistical tools:

1. IBM SPSS statistics 20.
2. SmartPLS v3.2.3.

4.6 Testing the Research Instrument (Questionnaire)

Validity and reliability are two major components to test the quality or trustworthiness of the study tools. Consequently, the following describes the statistical techniques that were used to test validity and reliability of the research questionnaire.

4.6.1 External (Pre-Pilot) Validity of the Questionnaire

It is essential to pre-pilot the questionnaire to identify any ambiguities in the questions and to identify the potential problems for each question. In order to assure high level of external validity for the prepared questionnaire, the initial Arabic version of the questionnaire was reviewed several times by the supervisor. Then, it was presented to a group of eleven academics from different faculties and universities, and professionals who worked previously in RSSP to review the questionnaire to judge its validity. The evaluation of the questionnaire was according to its content, the clearness of its items' meaning, and its appropriateness for the research, to avoid any ambiguous items and to assure its linkage with the study objectives and hypothesis. A list of the evaluators' names is attached in ***Appendix D.***

4.6.2 Statistical Validity of the Questionnaire

Validity refers to the degree to which an instrument measures what it is supposed to be measuring. Validity has a number of different aspects and assessment approaches. To insure the validity of the questionnaire, two statistical tests were applied. The applied statistical validity tests include criterion-related validity and construct validity. The Criterion-related validity test (Pearson test) measures the correlation coefficient between each item in the field and the whole field. The structure validity test (Pearson test) measures the correlation coefficient between one field and all the fields of the questionnaire.

1. Criterion-related validity (Internal Validity)

Internal validity of the questionnaire was measured by a scouting sample, which is composed of fifty two questionnaires, through measuring the correlation coefficients between each paragraph in one field and the whole field.

The following **Table (4.3)** shows the correlation coefficient for each item of the field "*Task Characteristics*" and the total of the field. The p-values are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$. Therefore, it can be said that the paragraphs of this field are consistent and valid to measure what it was set for.

Table (4.3): Correlation coefficient of each paragraph of "Task Characteristics" and the total of this field

	Paragraph	**TC**	
TC1	I frequently deal with ill-defined business problems.	Pearson Correlation P-value (Sig.)	0.805* 0.000
TC2	I frequently deal with ad-hoc, non-routine business problems.	Pearson Correlation P-value (Sig.)	0.861* 0.000
TC3	Frequently the business problems I work on involve answering questions that have never been asked before.	Pearson Correlation P-value (Sig.)	0.740* 0.000
TC4	The business problems I deal with frequently involve more than one business function.	Pearson Correlation P-value (Sig.)	0.810* 0.000

* Correlation is significant at the 0.05 level (2-tailed)

As shown below in **Table (4.4)**, the correlation coefficient for each item of the field "*Technology Characteristics*" and the total of this field. The p-values are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$. Therefore, all the paragraphs of this field are consistent and are valid to measure what it was set for.

Table (4.4): Correlation coefficient of each paragraph of "Technology Characteristics" and the total of this field

	Paragraph	**TNC**	
TNC1	Management information systems offer me the data that I need for my work.	Pearson Correlation P-value (Sig.)	0.801* 0.000
TNC2	PCs or a Tablets are available for accessing the data that I need on management information systems.	Pearson Correlation P-value (Sig.)	0.829* 0.000
TNC3	Assisters are available when I need a quick help in management information systems problems.	Pearson Correlation P-value (Sig.)	0.788* 0.000
TNC4	Assisters in my office are available when I need a help.	Pearson Correlation P-value (Sig.)	0.776* 0.000

* Correlation is significant at the 0.05 level (2-tailed)

The following **Table (4.5)** presents the correlation coefficient for each item of the field "Computer Self-Efficacy" and the total of this field. All p-values are less than 0.05 except the p-value of the first paragraph, so all the correlation coefficients of this field are significant at $\alpha = 0.05$ except the correlation coefficient of the first paragraph **CSE1**. Therefore, the first paragraph was eliminated from the measurement scale of this field.

Table (4.5): Correlation coefficient of each paragraph of "Computer Self-Efficacy" and the total of this field

	Paragraph	**CSE**	
If new devices or software package is adopted at my office, I could complete the tasks using the software…			
CSE1	.. if I had only the device or software manuals for reference.	Pearson Correlation P-value (Sig.)	-0.116 0.477
CSE2	.. without calling someone for help.	Pearson Correlation P-value (Sig.)	0.764* 0.000
CSE3	.. without getting a help from someone else to get started.	Pearson Correlation P-value (Sig.)	0.899* 0.000
CSE4	.. without having a lot of time to complete the tasks.	Pearson Correlation P-value (Sig.)	0.691* 0.000
CSE5	.. without someone showing me how to do it first.	Pearson Correlation P-value (Sig.)	0.865* 0.000
CSE6	.. without using similar device software once before.	Pearson Correlation P-value (Sig.)	0.717* 0.000

* Correlation is significant at the 0.05 level (2-tailed).

Table (4.6) shows the correlation coefficient for each item of the field "Computer Self-Efficacy" after elimination of the first paragraph **CSE1**. It is obvious that p-values are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$. Therefore, all the remaining paragraphs of this field are consistent and are valid to measure what it was set for.

Table (4.6): Correlation coefficient of each paragraph of "Computer Self-Efficacy" and the total of this field after eliminating paragraph CSE1

	Paragraph	**CSE**	
If new devices or software package is adopted at my office, I could complete the tasks using the software…			
CSE2	.. without calling someone for help.	Pearson Correlation P-value (Sig.)	0.772* 0.000
CSE3	.. without getting a help from someone else to get started.	Pearson Correlation P-value (Sig.)	0.911* 0.000
CSE4	.. without having a lot of time to complete the tasks.	Pearson Correlation P-value (Sig.)	0.714* 0.000
CSE5	.. without someone showing me how to do it first.	Pearson Correlation P-value (Sig.)	0.883* 0.000
CSE6	.. without using similar device software once before.	Pearson Correlation P-value (Sig.)	0.765* 0.000

* Correlation is significant at the 0.05 level (2-tailed).

As shown below in **Table (4.7)**, the correlation coefficient for each item of the field "Task-Technology Fit" and the total of this field. The p-values are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$. Therefore, all the paragraphs of this field are consistent and are valid to measure what it was set for.

Table (4.7): Correlation coefficient of each paragraph of "Task-Technology Fit" and the total of this field

	Paragraph	**TTF**	
TTF1	The computerized management information systems available to me are having all critical data that would be very useful to me in my job.	Pearson Correlation P-value (Sig.)	0.646* 0.000
TTF2	I do my job effectively because all of the data I need is available.	Pearson Correlation P-value (Sig.)	0.748* 0.000
TTF3	The RSSP maintains data at an appropriate level of detail for my purposes.	Pearson Correlation P-value (Sig.)	0.742* 0.000
TTF4	It is easy to find out what data the RSSP maintains on a given subject.	Pearson Correlation P-value (Sig.)	0.648* 0.000
TTF5	On the reports or systems I deal with, the exact meaning of data elements is either obvious, or easy to find out.	Pearson Correlation P-value (Sig.)	0.800* 0.000
TTF6	Getting authorization to access data that would be useful in my job is time consuming and difficult.	Pearson Correlation P-value (Sig.)	0.712* 0.000
TTF7	The data is free of cases when supposedly equivalent data from two different sources is inconsistent.	Pearson Correlation P-value (Sig.)	0.536* 0.000
TTF8	Always it is easy to compare or aggregate data from two different sources because the data is defined similarly.	Pearson Correlation P-value (Sig.)	0.751* 0.000
TTF9	The data that I use or would like to use is accurate enough for my purposes.	Pearson Correlation P-value (Sig.)	0.739* 0.000
TTF10	I can get data quickly and easily when I need it.	Pearson Correlation P-value (Sig.)	0.811* 0.000
TTF11	Our computerized management information systems are too flexible to be able to respond to my changing needs for data.	Pearson Correlation P-value (Sig.)	0.805* 0.000
TTF12	I am getting as quick a turnaround as I need on requests for new reports or data.	Pearson Correlation P-value (Sig.)	0.639* 0.000
TTF13	I am getting the help I need in accessing and understanding the data.	Pearson Correlation P-value (Sig.)	0.809* 0.000
TTF14	The computerized information systems that give me access to data are convenient and easy to use.	Pearson Correlation P-value (Sig.)	0.810* 0.000
TTF15	The data is not subject to frequent problems and crashes.	Pearson Correlation P-value (Sig.)	0.660* 0.000
TTF16	I can count on the system to be "up" and available when I need it.	Pearson Correlation P-value (Sig.)	0.678* 0.000
TTF17	I can get data that is current enough to meet my needs.	Pearson Correlation P-value (Sig.)	0.789* 0.000
TTF18	I am getting the training I need to be able to use RSSP computerized information systems, procedures and data effectively.	Pearson Correlation P-value (Sig.)	0.594* 0.000
TTF19	The data that I need is displayed in a readable and understandable form.	Pearson Correlation P-value (Sig.)	0.750* 0.000
TTF20	The data is stored using methods and forms that let it easy to know how to use it effectively.	Pearson Correlation P-value (Sig.)	0.779* 0.000

* Correlation is significant at the 0.05 level (2-tailed).

Table (4.8) shows that the correlation coefficient for each item of the field "Perceived Usefulness" and the total of this field. The p-values are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$. Therefore, all the paragraphs of this field are consistent and are valid to measure what it was set for.

Table (4.8): Correlation coefficient of each paragraph of "Perceived Usefulness" and the total of this field

	Paragraph	**PU**	
Using the management information systems in my office…			
PU1	... enables me to accomplish my tasks more quickly.	Pearson Correlation P-value (Sig.)	0.901* 0.000
PU2	... improves my job performance.	Pearson Correlation P-value (Sig.)	0.930* 0.000
PU3	... increases my productivity.	Pearson Correlation P-value (Sig.)	0.936* 0.000
PU4	... enhances my effectiveness on the job.	Pearson Correlation P-value (Sig.)	0.978* 0.000
PU5	... makes it easier to do my job.	Pearson Correlation P-value (Sig.)	0.952* 0.000
PU6	... is useful in my job.	Pearson Correlation P-value (Sig.)	0.946* 0.000

* Correlation is significant at the 0.01 level (2-tailed).

As shown below in **Table (4.9)**, the correlation coefficient for each item of the field "Perceived Ease of Use" and the total of this field. The p-values are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$. Therefore, all the paragraphs of this field are consistent and are valid to measure what it was set for.

Table (4.9): Correlation coefficient of each paragraph of "Perceived Ease of Use" and the total of this field

	Paragraph	**PEOU**	
PEOU1	Learning to operate the management information systems in my office is easy for me.	Pearson Correlation P-value (Sig.)	0.902* 0.000
PEOU2	I find it easy to get the management information systems in my office to do what I want it to do.	Pearson Correlation P-value (Sig.)	0.888* 0.000
PEOU3	My interaction with the management information systems in my office is clear and understandable.	Pearson Correlation P-value (Sig.)	0.916* 0.000
PEOU4	I find the management information systems in my office flexible to interact with.	Pearson Correlation P-value (Sig.)	0.888* 0.000
PEOU5	It is easy for me to become skillful at using the management information systems in my office.	Pearson Correlation P-value (Sig.)	0.850* 0.000
PEOU6	I find the management information systems in my office easy to use.	Pearson Correlation P-value (Sig.)	0.780* 0.000

* Correlation is significant at the 0.05 level (2-tailed).

Table (4.10) shows that the correlation coefficient for each item of the field "User Satisfaction" and the total of this field. The p-values are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$. Therefore, all the paragraphs of this field are consistent and are valid to measure what it was set for.

Table (4.10): Correlation coefficient of each paragraph of "User Satisfaction" and the total of this field

	Paragraph	**USAT**	
USAT1	I am satisfied to continue using the management information systems in my office.	Pearson Correlation P-value (Sig.)	0.896* 0.000
USAT2	I am pleased with my previous experience of using the management information systems in my office.	Pearson Correlation P-value (Sig.)	0.890* 0.000
USAT3	I am satisfied that the management information systems at my office meet my information needs.	Pearson Correlation P-value (Sig.)	0.933* 0.000
USAT4	I am satisfied with the management information systems efficiency.	Pearson Correlation P-value (Sig.)	0.926* 0.000
USAT5	I think that the design of the information system take into account the desires and needs of its users.	Pearson Correlation P-value (Sig.)	0.869* 0.000
USAT6	Overall, I am satisfied with the management information systems at my office.	Pearson Correlation P-value (Sig.)	0.922* .000

* Correlation is significant at the 0.05 level (2-tailed).

2. Structure validity

Structure validity is another statistical test that was used to examine the questionnaire validity. Structure validity is evaluated by calculating the correlation coefficients of each field of the questionnaire and the whole of questionnaire.

Table (4.11) clarifies the correlation coefficient for each field and the whole of the questionnaire. The p-values are less than 0.05, so the correlation coefficients of all the fields are significant at $\alpha = 0.05$, so it is concluded that each field is valid to measure what it was set for.

Table (4.11): Correlation coefficients of each field and the whole of questionnaire

Field		
Task Characteristics (TC)	Pearson Correlation P-value (Sig.)	0.634* 0.000
Technology Characteristics (TNC)	Pearson Correlation P-value (Sig.)	0.738* 0.000
Computer Self-Efficacy (CSE)	Pearson Correlation P-value (Sig.)	0.343* 0.000
Task-Technology Fit (TTF)	Pearson Correlation P-value (Sig.)	0.820* 0.000
Perceived Usefulness (PU)	Pearson Correlation P-value (Sig.)	0.716* 0.000
Perceived Ease of Use (PEOU)	Pearson Correlation P-value (Sig.)	0.827* 0.000
User Satisfaction (USAT)	Pearson Correlation P-value (Sig.)	0.770* 0.000

* Correlation is significant at the 0.05 level (2-tailed).

3. Reliability of Questionnaire

Reliability of an questionnaire is the degree of consistency with which it measures the attribute it is supposed to be measuring. In this study, Cronbach's Coefficient Alpha was used to evaluate the reliability of the questionnaire.

- **Cronbach's Coefficient Alpha**

It is a statistical evaluation method which is used to assess the internal consistency of the questionnaire. It measures the reliability between each field and the mean of the whole fields of the questionnaire. Normal Cronbach's coefficient alpha values range between 0.0 and 1.0, and the higher values reflect a higher degree of internal consistency. **Table (4.12)** presents the values of Cronbach's coefficient alpha that were calculated for all fields.

Table (4.12): Cronbach's Alpha for each filed of the questionnaire and the entire questionnaire

Field	No. of Items	Cronbach's Alpha
Task Characteristics	4	0.806
Technology Characteristics	4	0.783
Computer Self-Efficacy	5	0.867
Task-Technology Fit	20	0.949
Perceived Usefulness	6	0.973
Perceived Ease of Use	6	0.933
User Satisfaction	6	0.955
All Paragraphs	**51**	**0.960**

As shown previously in **Table (4.12)**, The calculated Cronbach's Alpha values of all fields ranges between 0.783 and 0.973. These range is considered satisfactory and ensures the reliability of each field of the questionnaire. Furthermore, the Cronbach's Alpha value for the entire questionnaire equals 0.960, that reflects the reliability of the entire questionnaire.

As a conclusion, it is proven that the study questionnaire was valid, reliable and ready to be used for data collection.

4.7 Chapter Summery

Chapter 4 presented detailed explanation of the research design and methodology. Firstly, it introduced the methodology that the study adopted. Then, it specified the population and data collection methodology of primary and secondary data, including measurements and questionnaire design. Then, it presented the pre-pilot validation and the results of statistical validity of the questionnaire after piloting.

Chapter 5 presents the results of descriptive analysis of data collected and the results of Structural Equation Model (SEM) using PLS analysis.

Chapter 5

Data Analysis and Results

5.1 Introduction

This chapter explains the stages of the data analysis process of the collected responses and presents the analysis results with explanations of these results. Also, it provides a clear idea about the respondents' demographic data, and provides the variance explained with SEM-PLS analysis. In this chapter, the researcher uses two analytical tools: IBM SPSS statistics 20; SmartPLS v3.2.3, a PLS structural equation modeling tool, to assess the properties of the measurement model and to estimate the parameters of the structural model. SmartPLS was used to analyze the research model and to examine the relationships of the variables.

5.2 The characteristics of sample demographic

5.2.1 Gender

The following **Table (5.1)** shows that (53.5%) of the sample are "Male" , and (46.5%) of the sample are "Female". It can be concluded from the result that the percentage of male employees at RSSP's offices are slightly higher than the percentage of female employees. Nevertheless, the small difference between the percentages can be attributed to the UNRWA's policy in recruitment that gives the males and females equal opportunities in employment.

Table (5.1): Respondents' distribution according to gender

Gender	Frequency	Percentage
Male	116	53.5%
Female	101	46.5%
Total:	**217**	**100%**

Based on the census of the Palestinian Central Bureau of Statistics (PCBS) for 2016, the sex ratio of the population in Gaza Strip is (103.3) males per (100) females ("Statistics," 2016). This means that males represent about (50.81%), and females represent about (49.19%) of the population in Gaza Strip. Therefore, the researcher finds the distribution of respondents according to the gender in RSSP Area Offices, is consistent with the general distribution of the population in Gaza Strip.

5.2.2 Age

The following **Table (5.2**) illustrates the respondents' distribution based on their ages; the highest percentage (24.0%) was for employees whose ages (45 or more) years, followed by those whose ages range between (30 to less than 35) years who has (23.5%), and by those whose ages range between (35 to less than 40) years who has (21.7%), where the group of employees whose ages were (less than 25) years formed the smallest percentage (4.1%).

Table (5.2): Respondents' distribution according to age

Age	Frequency	Percentage
Less than 25	9	4.1%
25 to less than 30	27	12.4%
30 to less than 35	51	23.5%
35 to less than 40	47	21.7%
40 to less than 45	30	13.8%
45 or more	52	24.0%
Missing	1	0.5%
Total:	**217**	**100%**

It can be concluded from **Table (5.2**) that the respondents whose ages are (less than 35) represent about (40.0%), whereas the respondents whose ages are (35 or more) represent about (60.0%). From the researcher's point of view, the low percentage of respondents whose ages are (less than 35) can be attributed to the restricted employment policy adopted by UNRWA, in the past few years, that gives the priority to the internal recruitment for new positions. This leads to limited opportunities for young candidates, of fresh graduates, to have a job at UNRWA.

5.2.3 Academic degree

Table (5.3) presents the distribution of respondents according to their academic degree. Results showed that the Bachelor degree holders formed the highest rate (78.8%), while higher education holders were (10.6%), followed by Diploma holders with a rate of (8.3%).

Table (5.3): Respondents' distribution according to academic degree

Academic degree	Frequency	Percentage
Less than Diploma degree	2	0.9%
Diploma degree	18	8.3%
Bachelor's degree	171	78.8%
High Education	23	10.6%
Missing	3	1.4%
Total:	**217**	**100%**

From the researcher point of view, this distribution of education could be due to the requirements of the UNRWA's RSSP Area offices. Also, the researcher believes that the high percentages of the respondents whose academic degrees are (Bachelor's degree) and (High Education), indicate that RSSP is rich with qualified human resources.

5.2.4 Employee's field of work (Job Title)

The following **Table (5.4)** shows the distribution of the respondents based on their job titles. The highest percentages were (65.0%) for (Social workers), followed by (11.5%) for (Clerks), (6.5%) for (Area Relief and Social Services Officers), (5.1%) for (Registration Assistants), and (5.1%) for (Registration Clerks). Few percentages were for the respondents with the other job titles.

Table (5.4): Respondents' distribution according to job title

Job title	Frequency	Percentage
Area Relief and Social Services Officer	14	6.5%
Area Registration Officer	5	2.3%
Registration Assistant	11	5.0%
Social Worker	141	65%
Data Entry Clerk	2	0.9%
Registration Clerk	11	5.0%
Clerk	25	11.5%
Poverty Coordinator	1	0.5%
PAS Focal Point	2	0.9%
Professional Intervention Supervisor	1	0.5%
Security Officer	1	0.5%
Site Engineer	1	0.5%
Missing	2	0.9%
Total:	**217**	**100%**

From the researcher's point of view, the high percentage of respondents with the job title "Social Worker" reflects the nature of the work of the RSSP offices that focus on delivering relief and social services to Palestinian refugees in Gaza Strip.

5.2.5 Years of Experience

The following **Table (5.5)** illustrates the distribution of respondents according to years of experience in their jobs in RSSP offices. The results clarify that the highest level of respondents (34.1%) have (5 to less than 10) years of experience of work. Then, those respondents who have (Less than 5) years of experience represent (24.9%) of the responses, followed by those who have (10 to less than 15) years of experience. The most experienced employees, with more than 25 years of experience, represent (12.9%) of the responses.

Table (5.5): Respondents' distribution according to seniority

Seniority	Frequency	Percentage
Less than 5	54	24.9%
5 to less than 10	74	34.1%
10 to less than 15	42	19.4%
15 to less than 20	6	2.7%
20 to less than 25	12	5.5%
25 or more	28	12.9%
Missing	1	0.5%
Total:	**217**	**100%**

The researcher believes that these low percentages of experienced employees could be attributed to the employment policy adopted by UNRWA, in the past few years, that depends on limited durations contracts.

5.2.6 Voluntariness of use

Table (5.6) classifies the employees at RSSP offices based on the voluntariness of use of the management information systems (MIS). From the point of view of the respondents, (85.3%) of respondents consider the use of MIS at their offices as a mandatory, while (14.3%) of respondents consider the use as optional.

Table (5.6): Respondents' distribution according to voluntariness of use

Voluntariness of use	Frequency	Percentage
Mandatory	185	85.3%
Optional	31	14.2%
Missing	1	0.5%
Total:	**217**	**100%**

The researcher believes that the high rate of mandatory usage refers to the essential role that the management information systems play in the work of the most of the employees in RSSP Area Offices, which make the use of these systems are required to perform various jobs.

5.2.7 MIS Usage

Table (5.7) lists the RSSP management information systems that respondents use at their area offices sorted descending from the most to the least used systems. It is obvious that the most used system was the Poverty Assessment System that used by (71.9%) of respondents, followed by E-time System (59.4%), RSSP Attendance System (59.0%), UNRWA Employees Portal (58.1%), and ePer System (47.0%). The least used system by respondents was the Inventory System (11.1%).

Table (5.7): Respondents' usage of systems

The system	Frequency	Percentage
Poverty Assessment System (PAS)	156	71.9%
E-time System	129	59.4%
RSSP Attendance System	128	59.0%
UNRWA Employees Portal	126	58.1%
ePer System	102	47.0%
Registration Information System (RIS)	78	35.9%
Shelter System	65	30.0%
Inventory System	24	11.1%

The researcher believes that this high percentages of usage for most of the systems, reflect the essential role that various management information systems play in the work of the most of the employees in RSSP area offices.

5.3 Answering the Research Questions

5.3.1 Answering the First Research Question

RQ1: "How do respondents evaluate the characteristics of the tasks they perform at RSSP's area offices?"

To answer this question, the mean, relative mean and p-value are calculated for each paragraph of the field "Task Characteristics". The results are presented in **Table (5.8)** ranked.

Table (5.8): Means and Test Values for "Task Characteristics"

	Item	Mean	Relative Mean	P-value (Sig.)	Test Value	Rank
TC1	I frequently deal with ill-defined business problems.	4.44	63.43%	0.000	4.432	3
TC2	I frequently deal with ad-hoc, non-routine business problems.	4.74	67.71%	0.000	8.144	2
TC3	Frequently the business problems I work on involve answering questions that have never been asked before.	4.09	58.43%	0.338	0.961	4
TC4	The business problems I deal with frequently involve more than one business function.	5.02	71.71%	0.000	11.528	1
	All paragraphs of the field	**4.57**	**65.29%**	**0.000**	**8.145**	

Table (5.8) shows that the means of paragraphs TC1, TC2, TC4 equal 4.44 (63.43%), 4.74 (67.71%), 5.02 (71.71%), T-test values= 4.432, 8.144, 11.528 and P-values = 0.000, 0.000, 0.000, which are smaller than the level of significance $\alpha = 0.05$. The signs of all test values are positive, so the means of those paragraphs are significantly different from the hypothesized value (4). This means that the respondents agreed to those paragraphs.

On the other hand, the mean of paragraph TC3 equals 4.09 (58.43%), T-test value = 0.961, and P-value = 0.338 which is greater than the level of significance $\alpha = 0.05$. Then, the mean of the paragraph TC3 is insignificantly different from the hypothesized value (4), which means that the respondents are neutral to this paragraph.

However, the mean of the field *Task Characteristics* equals 4.57 (65.29%), T-test value = 8.145, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. Also, the sign of the test is positive, so the mean of the field is significantly greater than the hypothesized value (4). This means that the respondents agreed to the *Task Characteristics* field.

Thus, to answer the first research question, the results can interpreted as that most respondents rank the tasks, they deal with, as non-routine and interdependent tasks.

5.3.2 Answering the Second Research Question

RQ2: "How do respondents evaluate the characteristics of the technologies (tools) they use to perform the tasks at RSSP's area offices?"

To answer this question, the mean, relative mean and p-value are calculated for each paragraph of the field "Technology Characteristics". The results are presented in **Table (5.9)** ranked.

Table (5.9) : Means and Test Values for "Technology Characteristics"

	Item	Mean	Relative Mean	P-value (Sig.)	Test Value	Rank
TNC1	Management information systems offer me the data that I need for my work.	5.29	75.57%	0.000	16.050	1
TNC2	PCs or a Tablets are available for accessing the data that I need on management information systems.	5.25	75.00%	0.000	15.636	2
TNC3	Assisters are available when I need a quick help in management information systems problems.	4.88	69.71%	0.000	10.683	3
TNC4	Assisters in my office are available when I need a help.	3.79	54.14%	0.069	-1.824	4
	All paragraphs of the field	**4.82**	**68.86%**	**0.000**	**12.243**	

Table (5.9) shows that the means of paragraphs TNC1, TNC2, TNC3 equal 5.29 (75.57%), 5.25 (75.00%), 4.88 (69.71%), T-test values = 16.050, 15.636, 10.683, and P-values = 0.000, 0.000, 0.000, which are smaller than the level of significance $\alpha = 0.05$. The signs of all test values are positive, so the means of those paragraphs are significantly different from the hypothesized value (4). This means that the respondents agreed to those paragraphs.

On the other hand, the mean of paragraph TNC4 equals 3.79 (54.14%), T-test value = -1.824, and P-value = 0.069 which is slightly greater than the level of significance $\alpha = 0.05$. Then, the mean of the paragraph TNC4 is insignificantly different from the hypothesized value (4), which means that the respondents are neutral to this paragraph.

However, the mean of the field *Technology Characteristics* equals 4.82 (68.86%), T-test value = 12.243, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. Also, the sign of the test is positive, so the mean of the field is significantly greater than the hypothesized value (4). This means that the respondents agreed to the *Technology Characteristics* field.

It is notable that the respondents expressed the highest agreement for the paragraph TNC1 which states "*Management information systems offer me the data that I need for my work.*". On the other hand, the respondents expressed the lowest agreement for the paragraph TNC3 which states "*Assisters are available when I need a quick help in management information systems problems*".

Therefore, as an answer to the second research question, the respondents point to a good level of functionality for the MIS technology, which they use in RSSP's Area Offices.

5.3.3 Answering the Third Research Question

RQ3: "How do respondents evaluate their capabilities and efficacy of using new or existent technologies and computers?"

To answer this question, mean, relative mean and p-value are calculated for each paragraph of the field "Computer Self-Efficacy". The results are presented in **Table (5.10)** ranked.

Table (5.10): Means and Test Values for "Computer Self-Efficacy"

Item		Mean	Relative Mean	P-value (Sig.)	Test Value	Rank
If new devices or software package is adopted at my office, I could complete the tasks using the software…						
CSE2	.. without calling someone for help.	3.90	55.71%	0.294	-1.051	3
CSE3	.. without getting a help from someone else to get started.	3.86	55.14%	0.149	-1.447	5
CSE4	.. without having a lot of time to complete the tasks.	4.44	63.43%	0.000	4.676	1
CSE5	.. without someone showing me how to do it first.	3.92	56.00%	0.432	-0.787	2
CSE6	.. without using similar device software once before.	3.88	55.43%	0.229	-1.208	4
CSE	**All paragraphs of the field**	**3.9984**	**57.12%**	**0.984**	**-0.020**	

Table (5.10) shows that the mean of paragraph CSE4 equals 4.44 (63.43%), T-test value = 4.676, and P-value = 0.000 which is smaller than the level of significance α = 0.05. Also, the sign of the test is positive, so the mean of the this paragraph is significantly greater than the hypothesized value (4). This means that the respondents agreed to this paragraph.

The means of paragraphs CSE2, CSE3, CSE5, CSE6 equal 3.90 (55.71%), 3.86 (55.14%), 3.92 (56.00%), 3.88 (55.43%), T-test values = -1.051, -1.447, -0.787, -1.208 and P-values = 0.294, 0.149, 0.432, 0.229, which are greater than the level of significance α = 0.05. Thus, the means of the paragraphs CSE2, CSE3, CSE5, and CSE6 are insignificantly different from the hypothesized value (4), which means that the respondents are neutral to those paragraphs.

Moreover, the mean of the field *Computer Self-Efficacy* equals 3.9984 (57.12%), T-test value = -0.020, and P-value = 0.984 which is greater than the level of significance α = 0.05. This means that the respondents are neutral to the *Computer Self-Efficacy* field. Thus, the results can be attributed to the nature of this field which measures the individual *Computer Self-Efficacy* of respondents, which depend on different individual skills of using computer.

Therefore, there is no specific conclusion can be inferred to answer the third research question due to the nature of this field.

5.3.4 Answering the Forth Research Question

RQ4: "What is the degree of fit between tasks and the technology used to perform these tasks?"

To answer this question, mean, relative mean and p-value are calculated for each paragraph of the field "Task-Technology Fit". The results are presented in **Table (5.11)** ranked.

Table (5.11): Means and Test Values for "Task-Technology Fit"

	Item	Mean	Relative Mean	P-value (Sig.)	Test Value	Rank
TTF1	The computerized management information systems available to me are having all critical data that would be very useful to me in my job.	5.02	71.71%	0.000	12.310	1
TTF2	I do my job effectively because all of the data I need is available.	5.00	71.43%	0.000	12.884	2
TTF3	The RSSP maintains data at an appropriate level of detail for my purposes.	4.94	70.57%	0.000	13.113	7
TTF4	It is easy to find out what data the RSSP maintains on a given subject.	4.95	70.71%	0.000	12.487	5
TTF5	On the reports or systems I deal with, the exact meaning of data elements is either obvious, or easy to find out.	4.95	70.71%	0.000	13.752	4
TTF6	Getting authorization to access data that would be useful in my job is time consuming and difficult.	4.62	66.00%	0.000	7.368	16
TTF7	The data is free of cases when supposedly equivalent data from two different sources is inconsistent.	4.45	63.57%	0.000	6.563	17
TTF8	Always it is easy to compare or aggregate data from two different sources because the data is defined similarly.	4.41	63.00%	0.000	5.382	19
TTF9	The data that I use or would like to use is accurate enough for my purposes.	4.78	68.29%	0.000	10.469	11
TTF10	I can get data quickly and easily when I need it.	4.96	70.86%	0.000	12.114	3
TTF11	Our computerized management information systems are too flexible to be able to respond to my changing needs for data.	4.74	67.71%	0.000	10.115	14
TTF12	I am getting as quick a turnaround as I need on requests for new reports or data.	4.72	67.43%	0.000	10.071	15
TTF13	I am getting the help I need in accessing and understanding the data.	4.79	68.43%	0.000	11.277	10
TTF14	The computerized information systems that give me access to data are convenient and easy to use.	4.86	69.43%	0.000	12.263	9
TTF15	The data is not subject to frequent problems and crashes.	4.12	58.86%	0.218	1.235	20
TTF16	I can count on the system to be "up" and available when I need it.	4.45	63.57%	0.000	5.347	18
TTF17	I can get data that is current enough to meet my needs.	4.76	68.00%	0.000	9.641	12
TTF18	I am getting the training I need to be able to use RSSP computerized information systems, procedures and data effectively.	4.76	68.00%	0.000	8.730	13
TTF19	The data that I need is displayed in a readable and understandable form.	4.95	70.71%	0.000	12.437	6
TTF20	The data is stored using methods and forms that let it easy to know how to use it effectively.	4.94	70.57%	0.000	12.700	8
	All paragraphs of the field	**4.76**	**68.00%**	**0.000**	**14.062**	

Table (5.11) shows that the mean of paragraph TTF15 equals 4.12 (58.86%), T-test value = 1.235, and P-value = 0.218 which is greater than the level of significance α = 0.05. Then, the mean of the paragraph TTF15 is insignificantly different from the hypothesized value (4), which means that the respondents are neutral to this paragraph.

On the other hand, the P-values of all paragraphs of the field *Task-Technology Fit*, except TTF15, are smaller than the level of significance α = 0.05. Also, all T-test values of these paragraphs are positive. Hence, the means of these paragraphs are significantly different from the hypothesized value (4). This means that the respondents agreed to those paragraphs.

It is notable that the respondents expressed the highest agreement for the paragraph TTF1 which states "*The computerized management information systems available to me are having all critical data that would be very useful to me in my job*". On the other hand, the respondents expressed the lowest agreement for the paragraph TTF8 which states "*Always it is easy to compare or aggregate data from two different sources because the data is defined similarly*".

Moreover, the mean of the field *Task-Technology Fit* equals 4.76 (68.00%), T-test value = 14.062, and P-value = 0.000 which is smaller than the level of significance α = 0.05. Also, the sign of the test is positive, so the mean of the field is significantly greater than the hypothesized value (4). This means that the respondents agreed to the *Task-Technology Fit* field.

Thus, the results can interpreted as that most respondents point to a high degree of fit between the technology of the MIS and the tasks they perform. This conclusion gives a clear answer to the fourth research question.

5.3.5 Answering the Fifth Research Question

RQ5: *"How do respondents evaluate the usefulness of the MIS at RSSP's area offices?"*

To answer this question, mean, relative mean and p-value are calculated for each paragraph of the field "Perceived Usefulness". The results are presented in **Table (5.12)** ranked.

Table (5.12): Means and Test Values for "Perceived Usefulness"

	Item	Mean	Relative Mean	P-value (Sig.)	Test Value	Rank
	Using the management information systems in my office…					
PU1	... enables me to accomplish my tasks more quickly.	5.40	77.14%	0.000	18.767	6
PU2	... improves my job performance.	5.51	78.71%	0.000	23.187	4
PU3	... increases my productivity.	5.52	78.86%	0.000	23.205	3
PU4	... enhances my effectiveness on the job.	5.55	79.29%	0.000	23.473	1
PU5	... makes it easier to do my job.	5.48	78.29%	0.000	20.304	5
PU6	... is useful in my job.	5.53	79.00%	0.000	21.908	2
	All paragraphs of the field	**5.50**	**78.57%**	**0.000**	**23.821**	

Table (5.12) shows that the P-values of all paragraphs of the field *Perceived Usefulness* are smaller than the level of significance $\alpha = 0.05$. The signs of all test values are positive, so the means of all paragraphs are significantly different from the hypothesized value (4). This means that the respondents agreed to all paragraphs.

It is notable that the respondents expressed the highest agreement for the paragraph PU4 which states "*Using the management information systems in my office enhances my effectiveness on the job*". On the other hand, the respondents expressed the lowest agreement for the paragraph PU1 which states "*Using the management information systems in my office enables me to accomplish my tasks more quickly*".

Moreover, the mean of the field *Perceived Usefulness* equals 5.50 (78.57%), T-test value = 23.821, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. Also, the sign of the test is positive, so the mean of the field is significantly greater than the hypothesized value (4). This means that the respondents agreed to the *Perceived Usefulness* field.

To answer the fifth research question, based on the responses to this field, the MIS, used in RSSP's area offices, has a high degree of usefulness.

5.3.6 Answering the Sixth Research Question

RQ6: "How do respondents evaluate the ease of using the MIS at RSSP's area offices?"

To answer this question, mean, relative mean and p-value are calculated for each paragraph of the field "Perceived Ease of Use". The results are presented in **Table (5.13)** ranked.

Table (5.13): Means and Test Values for "Perceived Ease of Use"

	Item	Mean	Relative Mean	P-value (Sig.)	Test Value	Rank
PEOU1	Learning to operate the management information systems in my office is easy for me.	5.20	74.29%	0.000	16.117	2
PEOU2	I find it easy to get the management information systems in my office to do what I want it to do.	5.11	73.00%	0.000	15.917	4
PEOU3	My interaction with the management information systems in my office is clear and understandable.	5.06	72.29%	0.000	13.676	5
PEOU4	I find the management information systems in my office flexible to interact with.	5.05	72.14%	0.000	14.692	6
PEOU5	It is easy for me to become skillful at using the management information systems in my office.	5.24	74.86%	0.000	16.728	1
PEOU6	I find the management information systems in my office easy to use.	5.17	73.86%	0.000	16.408	3
	All paragraphs of the field	**5.14**	**73.43%**	**0.000**	**18.324**	

Table (5.13) shows that the P-values of all paragraphs of the field *Perceived Ease of Use* are smaller than the level of significance $\alpha = 0.05$. The signs of all test values are positive, so the means of all paragraphs are significantly different from the hypothesized value (4). This means that the respondents agreed to all paragraphs.

It is notable that the respondents expressed the highest agreement for the paragraph PEOU5 which states "*It is easy for me to become skillful at using the management information systems in my office*". On the other hand, the respondents expressed the lowest agreement for the paragraph PEOU4 which states "*I find the management information systems in my office flexible to interact with*".

Moreover, the mean of the field *Perceived Ease of Use* equals 5.14 (73.43%), T-test value = 18.324, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. Also, the sign of the test is positive, so the mean of the field is significantly greater than the hypothesized value (4). This means that the respondents agreed to the *Perceived Usefulness* field.

As an answer to the sixth research question, it can be concluded that most respondents rate the MIS, they use, as easy to use.

5.3.7 Answering the Seventh Research Question

RQ7: *"To what extent are respondents satisfied with MIS use at RSSP's area offices?"*

To answer this question, mean, relative mean and p-value are calculated for each paragraph of the field "User Satisfaction". The ranked results are presented in **Table (5.14)**.

Table (5.14): Means and Test Values for "User Satisfaction"

	Item	Mean	Relative Mean	Sig. (2-tailed)	Test Value	Rank
USAT1	I am satisfied to continue using the management information systems in my office.	5.16	73.71%	0.000	13.939	2
USAT2	I am pleased with my previous experience of using the management information systems in my office.	5.29	75.57%	0.000	16.282	1
USAT3	I am satisfied that the management information systems at my office meet my information needs.	5.07	72.43%	0.000	13.359	4
USAT4	I am satisfied with the management information systems efficiency.	5.00	71.43%	0.000	12.299	5
USAT5	I think that the design of the information system take into account the desires and needs of its users.	4.68	66.86%	0.000	7.858	6
USAT6	Overall, I am satisfied with the management information systems at my office.	5.11	73.00%	0.000	14.028	3
	All paragraphs of the field	**5.05**	**72.14%**	**0.000**	**14.890**	

Table (5.14) shows that the P-values of all paragraphs of the field *User Satisfaction* are smaller than the level of significance $\alpha = 0.05$. The signs of all test values are positive, so the means of all paragraphs are significantly different from the hypothesized value (4). This means that the respondents agreed to all paragraphs.

It is notable that the respondents expressed the highest agreement for the paragraph USAT2 which states "*I am pleased with my previous experience of using the management information systems in my office*". On the other hand, the respondents expressed the lowest agreement for the paragraph USAT5 which states "*I think that the design of the information system take into account the desires and needs of its users*".

Moreover, the mean of the field *User Satisfaction* equals 5.05 (72.14%), T-test value = 14.890, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. Also, the sign of the test is positive, so the mean of the field is significantly greater than the hypothesized value (4). This means that the respondents agreed to the *User Satisfaction* field.

Thus, to answer the seventh research question, the results indicate that most respondents are satisfied with the performance of the MIS they use at their work.

5.4 Testing Hypotheses using PLS

The analysis was started depending on the theoretically-based conceptual model of the current study, shown in **Figure (1.1**), which had been formed by the researcher based on the literature review. SmartPLS (v3.2.3) was used to test the research model and hypotheses. SmartPLS is a specialized software package for partial least square structural equation modeling (PLS-SEM).

Structural equation modeling (SEM) is " a family of statistical models that seek to explain the relationships among multiple variables". SEM examines the structure of interrelationships expressed in a series of equations, similar to a series of multiple regression equations. These equations describe the relationships among all dependent (endogenous) and independent (exogenous) variables involved in the analysis (Hair, Black, Babin, & Anderson, 2009, p. 634). Compared to other statistical techniques, SEM is the superior especially when multiple dependent variables are utilized (Schrier et al., 2010, p. 10). SEM is known by many names: covariance structure analysis, latent variable analysis, and sometimes it is even referred to by the name of the specialized software package used (e.g., a LISREL, or AMOS model) (Hair et al., 2009, p. 634).

PLS is a regression-based technique which can estimate and test the relationships among constructs through path analysis (Hussein, 2009, pp. 220–221). PLS path model consists of three components: the structural model, the measurement model and the weighting scheme (Monecke & Leisch, 2012, p. 4). PLS specifies relationships in terms of measurement and structural models, which are termed outer and inner models, respectively (Hair et al., 2009, p. 776). In PLS models, weights and loadings of manifest variables indicate the strength of the measures, while the estimated path coefficients indicate the strength and the sign of the theoretical relationships of the latent variables (Hussein, 2009, p. 222).

Therefore, in this study the analysis process, using PLS, has run through two stages: Measurement Model Evaluation, and Structural Model Evaluation. In the first stage, Indicator Reliability, Construct Reliability, Convergent Validity, and Discriminant Validity have been tested. In the next stage, Coefficient of Determination (R^2), Path coefficients (β), and Effect size (f^2) have been calculated.

5.4.1 Measurement Model Evaluation

The first step in the PLS analysis is the construction of the measurement model. The measurement model or outer model relates observed variables to their latent variables. Observed variables are referred to as manifest variables or indicators, latent variables as factors (Monecke & Leisch, 2012, p. 7).

The main purpose of the measurement model evaluation is to evaluate the reliability and validity of the indicators associated with the model constructs. This test includes the evaluation of item reliability, internal consistency (construct reliability), convergent validity, and discriminant validity (Hussein, 2009, pp. 220–221)

1. Indicator Reliability

The Indicator reliability is assessed by calculating standardized outer loading of the indicator. Indicator reliability explains the variance of individual indicator relative to the latent variable (Memon & Rahman, 2014). The reliability of each indicator should be assessed. Researchers postulate that a latent variable should explain at least 50% of each indicator's variance, which means that the absolute standardized outer loadings should be higher than 0.7 (Henseler, Ringle, & Sinkovics, 2009, p. 299).

Therefore, the manifest variables (indicators) with outer loading 0.7 or higher are considered highly satisfactory. However, the outer loading value of 0.5 is regarded as acceptable, and the manifest variables with loading value of less than 0.5 should be dropped. Moreover, some researchers argued that 0.4 should be the acceptable loading value where others suggested that manifest variable with loading values between 0.4 and 0.7 should be reviewed before elimination. (Memon and Rahman 2014).

Hence, it is recommended to eliminate the indicator only if an indicator's reliability is low and eliminating this indicator would increase composite reliability. Sometimes, indicators with weaker outer loadings are retained on the basis of their contribution to content validity. However, indicators with very low outer loadings (below 0.40) should always be eliminated (Hair, Hult, Ringle, & Sarstedt, 2013, p. 103; Henseler et al., 2009, p. 299)..

Hence, in PLS analysis for the current study all indicators with outer loadings below the minimum accepted loading value were not included in the PLS model. **Table (5.15**) shows the remaining 36 indicators that achieved indicator reliability requirements through having acceptable outer loading values that range between 0.682 and 0.938.

Table (5.15): Individual reliability indicator loadings

Latent Variable	Indicators	Indicators' Outer Loadings
TC	TC1	0.898
	TC2	0.764
	TC4	0.682
TNC	TNC1	0.834
	TNC2	0.817
	TNC3	0.833
CSE	CSE3	0.738
	CSE4	0.914
	CSE5	0.855
TTF	TTF2	0.805
	TTF3	0.815
	TTF5	0.796
	TTF9	0.778
	TTF11	0.752
	TTF14	0.771
	TTF17	0.761
	TTF19	0.785
	TTF20	0.786
PU	PU1	0.865
	PU2	0.911
	PU3	0.922
	PU4	0.938
	PU5	0.935
	PU6	0.875
PEOU	PEOU1	0.848
	PEOU2	0.858
	PEOU3	0.896
	PEOU4	0.836
	PEOU5	0.831
	PEOU6	0.834
USAT	USAT1	0.854
	USAT2	0.852
	USAT3	0.918
	USAT4	0.888
	USAT5	0.782
	USAT6	0.885

TC = Task Characteristics TNC = Technology Characteristic
CSE = Computer self-efficacy TTF = Task-Technology Fit
PU = Perceived Usefulness PEOU = Perceived Ease of Use
USAT = User Satisfaction

Table (5.16) presents the initial numbers of indicators for each construct, and the final numbers after assessment process of the indicator reliability.

Table (5.16): Initial and final number of items

The construct	Initial number of items	Final number of items
Task Characteristics	4	3
Technology Characteristics	4	3
Computer self-efficacy	6	3
Task-Technology Fit	20	9
Perceived Usefulness	6	6
Perceived Ease of Use	6	6
User Satisfaction	6	6
Total	**52**	**36**

2. Internal Consistency (Construct Reliability)

Second parameter for reliability evaluations is the internal consistency (construct reliability). Construct reliability measures the internal consistency of the manifest variables (indicators) associated with a latent construct, which means the degree to which the indicators are measuring the same concept (Hussein, 2009, p. 224).

Internal consistency is evaluated by two measures, that are, Composite Reliability (CR) and Cronbach's alpha. CR and Cronbach's alpha indicate how well a set of manifest variables appraises a single latent construct. However, compared to Cronbach alpha, composite reliability is considered a better measure of internal consistency because it employs the standardized loadings of the manifest variables. Nevertheless, the interpretation of composite reliability score and Cronbach's Alpha is the similar. It is suggested that the value of Cronbach alpha should be higher than 0.7 and also for Composite reliability the value should be 0.7 or higher (Memon and Rahman 2014).

In the current study all constructs met the minimum requirements; hence, no constructs were dropped. Internal consistency was assessed using the composite reliability and using Cronbach's alpha. **Table (5.17**) shows that composite reliability values of all variables are acceptable because all exceed the minimum requirement of 0.7.

Table (5.17): Internal consistency evaluation (Composite Reliability and Cronbach's Alpha)

The construct	Composite Reliability	Cronbach's Alpha
TC	0.827	0.721
TNC	0.868	0.773
CSE	0.876	0.825
TTF	0.935	0.921
PU	0.966	0.957
PEOU	0.940	0.924
USAT	0.946	0.932

Furthermore, it is obvious from the Cronbach's alpha values presented in **Table (5.17**) that all variables are also acceptable because all exceed the minimum requirement of 0.7.

3. Convergent Validity

Convergent validity is the degree to which multiple items to measure the same concept are in agreement. As suggested by Hair et al. (2014), support is provided for convergent validity when each item has outer loadings above 0.70 and when each construct's average variance extracted (AVE) is 0.50 or higher. (Abdi & Amat Senin, 2015, p. 119; Hair, Sarstedt, Hopkins, & G. Kuppelwieser, 2014, p. 111) Average variance extracted (AVE) measures the overall amount of variance in the indicators accounted for by the latent variable. Higher variances occur when the indicators are truly representative of the latent construct (Hussein, 2009, p. 224).

In the current study, AVE values of all constructs are higher than 0.5, which is the minimum accepted AVE value. **Table (5.18)** shows that the AVE values of all constructs range between 0.614 and 0.824. Furthermore, as it was demonstrated in **Table (5.15**), the reliability of all items are above the recommendations.

Table (5.18): Convergent Validity - Average Variance Extracted (AVE)

The construct	AVE
TC	0.618
TNC	0.686
CSE	0.704
TTF	0.614
PU	0.824
PEOU	0.724
USAT	0.747

4. Discriminant Validity

Discriminant validity represents the extent to which the construct measures what it is intended to measure. A construct is considered to be discriminant valid if it shares more variance with its indicators than with any other construct. To test this requirement, the AVE of each construct should be higher than the highest squared correlation with any other construct (Hair, Sarstedt, et al., 2014, p. 112). If the AVE for a given latent variable exceeds the squared correlation with the other latent variables, then the variable can be said to display discriminant validity. Also, to measure the discriminant validity, the AVE square root could be used and should be greater than the correlations among the latent variables. The criterion used to assess this is by comparing

the AVE with the squared correlations or the square root of the AVE with correlations (Abdi & Amat Senin, 2015, p. 9).

As shown in **Table (5.19**), the study uses second method which is to compare the square root of the AVE with the correlations. Therefore, the validity shown in diagonal was examined and the variables satisfied the necessary conditions and all constructs exhibit the discriminant validity.

Table (5.19): Discriminant Validity

	CSE	PEOU	PU	TC	TNC	TTF	USAT
CSE	**0.839***						
PEOU	0.309	**0.851***					
PU	0.149	0.625	**0.908***				
TC	0.215	0.160	0.204	**0.786***			
TNC	0.097	0.499	0.512	0.306	**0.828***		
TTF	0.198	0.712	0.656	0.069	0.587	**0.783***	
USAT	0.200	0.729	0.708	0.146	0.549	0.779	**0.864***

* Note: Diagonal elements represent the square root of the AVE values while the off-diagonal elements represent the correlations.

5.4.2 Structural Model Evaluation

The second step in the SEM analysis is to evaluate the structural model. Structural model is used to assess the relationships between exogenous and endogenous latent variables. To evaluate these relationships, two basic indices are used: the coefficient of determination (R^2), and the standardized coefficient path (β) (Karimi et al., 2004).

1. Coefficient of Determination (R^2)

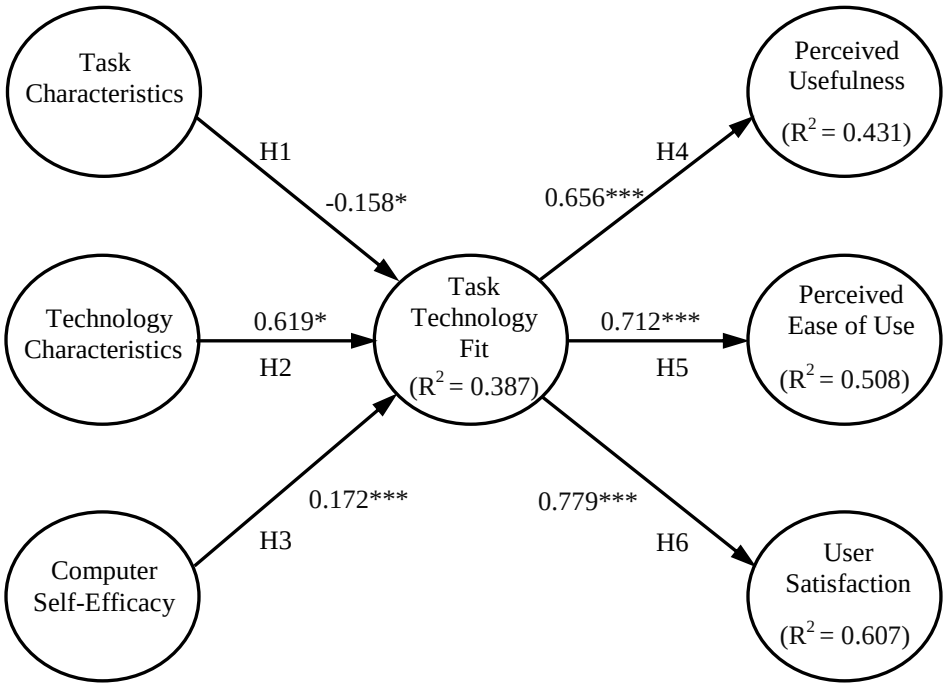
The R square (R^2) is a measure of the model's predictive accuracy. It represents the exogenous (independent) variables' combined effect on the endogenous (dependent) variable (s). This effect ranges from 0 to 1 with 1 representing complete predictive accuracy. R^2 with 0.75, 0.50, 0.25, respectively, describing substantial, moderate, and weak levels of predictive accuracy (Hair, Sarstedt, et al., 2014, p. 113). For a good model, the R^2 value of each endogenous latent variable in the model should be more than 0.26 (Memon & Rahman, 2014).

The predictive power of the model is summarized by R^2 values on the endogenous variables in **Figure (5.1**). R^2 values are between 0.387 and 0.607 which are higher than the suggested value. It can be concluded from the R^2 values that the model predicts 38.7% of Task-Technology Fit, 43.1% of Perceived Usefulness, 50.8% of Perceived Ease of Use, and 60.7% of User Satisfaction construct.

The values of R^2 represent the percentages with which the independent variables explain the variation in the dependent variable. According to PLS

analysis, the value of R^2 is highest in USAT followed by PEOU, PU, and finally by TTF. This suggests that the model mainly provides explanation of the variation of *User Satisfaction* on the largest degree, followed by explanation of the variation of *perceived ease of use*, on a less degree, then explanation of the variation of *perceived usefulness*, and finally explanation of the variation of the *Task-Technology Fit* of MIS on the lowest degree.

In addition to R^2, the research model was evaluated by looking at path coefficients (β) which indicate the strength of the relationships between the independent and dependent variables. Thus, research hypotheses are tested based on the values of path coefficients (β), and coefficients of determination (R^2) as will be mentioned in the next section.



- * p < 0.05; *** p < 0.001 (*2 tailed test*)
- *T-statistics were calculated using bootstrapping, (5000).*

Figure (5.1): Research Model Analysis Results

2. Path coefficients (β)

After running a PLS model, estimates are provided for the path coefficients, which represent the hypothesized relationships linking the latent variables. Path coefficient values are standardized on a range from -1 to +1, with coefficients closer to +1 representing strong positive relationships and coefficients closer to -1 indicating strong negative relationships. A standard error must be obtained using bootstrapping to test path coefficient values for significance (Hair, Sarstedt, et al., 2014, p. 114). Bootstrapping is used to test

the significance levels of β values through t-value test. As it is suggested, the acceptable t-values for a two-tailed test are 1.65 (significance level = 10 percent), 1.96 (significance level = 5 percent), and 2.58 (significance level = 1 percent) (Memon & Rahman, 2014).

In the current study, re-sampling (bootstrapping, 5000) was used to compute the t-statistic values. The results, presented in **Table (5.20**), show that all t-statistics exceed the minimum suggested values and, hence, all hypothesized relationships were significant.

Table (5.20): Summary of PLS graph results

Hypotheses	Path Coefficients	T-statistics	P Values	Remarks
H1: TC ➔ TTF	-0.158	2.342	0.019	Supported
H2: TNC ➔ TTF	0.619	8.932	0.000	Supported
H3: CSE ➔ TTF	0.172	2.049	0.041	Supported
H4: TTF ➔ PU	0.656	14.517	0.000	Supported
H5: TTF➔PEOU	0.712	16.87	0.000	Supported
H6: TTF ➔ USAT	0.779	25.502	0.000	Supported

The next step, path coefficients of all latent variables (paths) were evaluated by comparing β values among all the paths **Figure (5.1**)**.** The highest β value refers to the strongest effect of predictor (exogenous) latent variable towards the dependent (endogenous) latent variable.

3. Effect size (f^2)

The f^2 is computed by noting the change in R^2 when a specific construct is eliminated from the model. Based on the f^2 value, the effect size of the omitted construct for a particular endogenous construct can be determined such that 0.02, 0.15, and 0.35 represent small, medium, and large effects, respectively (Hair, Sarstedt, et al., 2014, p. 114).

Table (5.21): Effect size (f^2) of Hypotheses

Hypotheses	f^2	Effect size
H1: TC ➔ TTF	0.035	Small
H2: TNC ➔ TTF	0.566	Large
H3: CSE ➔ TTF	0.046	Small
H4: TTF ➔ PU	0.757	Large
H5: TTF➔PEOU	1.030	Large
H6: TTF ➔ USAT	1.547	Large

The computed effect size values (f^2), which are presented in **Table (5.21**), refer to large effect size for hypotheses H2, H4, H5, and H6. On the other hand, the effect size values of the hypotheses H1, H3 are small. Hence, it can be concluded from these values that the impact of Technology Characteristics on

Task-Technology Fit is strong. Moreover, the effect size results refer to a strong impact of Task-Technology Fit on each of Perceived Usefulness, Perceived Ease of Use, and User Satisfaction. Furthermore, the small effect size value of hypotheses H1, H3 refer to a week impact of Task Characteristics and Computer Self-Efficacy on Task-Technology Fit.

5.5 Results of Hypotheses Testing

As shown in **Figure (5.1), Table (5.20**) and **Table (5.21),** the results of PLS analysis present an empirical support for Hypotheses H2, H4, H5, and H6. In addition, the results present partial support for Hypotheses H1 and H3.

The path H1: TC → TTF (β= - 0.158, $p< 0.05$) refers to a partial negative relationship between *Task Characteristics* and *Task-Technology Fit.* Also, the two paths H2: TNC → TTF (β= 0.619, $p< 0.001$), and H3: CSE → TTF (β= 0.172, $p< 0.05$) indicate that *Technology Characteristics, and Computer Self-Efficacy* both have positive significant effect on *Task-Technology Fit.*

The three remaining paths H4: TTF → PU (β= 0.656, $p< 0.001$), H5: TTF → PEOU (β= 0.712, $p< 0.001$), and H6: TTF → USAT (β= 0.779, $p< 0.001$) indicate that *Task-Technology Fit* has a strong positive significant impact on each of *Perceived Usefulness*, *Perceived Ease of Use*, and *User Satisfaction*.

Therefore, the TTF → USAT path, is particularly valid, where it explains 60% of the variation in USAT. Followed by the TTF → PEOU path, where it explains 50% of the variation in PEOU. Then TTF → PU path, that explains 43% of the variation in PU. Finally, the TC → TTF, the TNC → TTF, and CSE → TTF paths are particularly valid, where they explain 39% of the variation in TTF.

This again suggests the strength of model in explaining mainly the variation of the USAT, PEOU, and PU constructs, more than the forth dependent construct, the TTF. It also highlights the effect of *Technology Characteristics* of explaining a relatively high percentage of the *Task-Technology Fit* variation. The effect of *Computer Self-Efficacy*, as well as *Task Characteristics*, also explains the variation of the *Task-Technology Fit* but with a smaller percentage. In addition, *Task-Technology Fit* has a strong significant effect on *User Satisfaction*, *Perceived Ease of Use*, and *Perceived Usefulness.*

5.6 Discussion of Hypotheses Testing Results

The study's main findings that are summarized in **Table (5.20**) will be discussed in detail in this section comparing with the findings of the similar previous studies.

1. Hypothesis 1: "Task Characteristics" has a significant impact on Task-Technology Fit.

The path H1: TC → TTF (β= - 0.158, $p< 0.05$) indicates a negative relationship between *Task Characteristics* and *Task-Technology Fit*. The negative relationship agrees with results of previous research (Goodhue, 1995; Goodhue & Thompson, 1995; Dishaw & Strong, 1999; Lin & Huang, 2008; Luarn & Huang, 2009).

(Goodhue, 1995, p. 1836) attributed this negative relationship to the lower evaluations that users, who engaged in more difficult and non-routine tasks, gave for task-technology fit. That is because users rate their systems and services as more confusing, providing less of the right level of details, and with harder to use hardware and software.

However, some studies e.g. (Schrier et al., 2010; Ma et al., 2013) referred to a positive relationship between task characteristics and task-technology fit. This could be due to the nature of the tasks where these studies were applied, or due to the degree of fit of used technologies. According to (Goodhue & Thompson, 1995, p. 230) and (Luarn & Huang, 2009, p. 235), the relationship between Task Characteristics and Task-Technology Fit should be positive if technology can truly support the task.

In this study, the answer to the first research question *(RQ1)* indicates that respondents rank the tasks, they deal with, as non-routine and interdependent tasks. Hence, due to the negative relationship between Task Characteristics and Task-Technology Fit, it is expected that Task-Technology Fit will decrease as a result of task requirements increase. However, the answer to the forth research question *(RQ4)* indicates that respondents point to a high degree of fit between the technology of the MIS and the tasks they perform. This can be attributed to the strong positive effect of Technology Characteristics on Task-Technology Fit, offset by a small negative effect of Task Characteristics on Task-Technology Fit.

Therefore, because of the negative relationship between *Task Characteristics* and *Task-Technology Fit*, according to the suggestions of (Goodhue & Thompson, 1995, p. 230) and (Luarn & Huang, 2009, p. 235), RSSP managers are recommended to take some actions to better utilize IT potential by conducting more training for employees, or by redesigning the tasks.

2. Hypothesis 2: "Technology Characteristics" has a significant impact on Task-Technology Fit.

The path H2: TNC → TTF (β= 0.619, p< 0.001) refers to a strong positive relationship between *Technology Characteristics* and *Task-Technology Fit*. This positive relationship result replicates and extends earlier findings from (Goodhue, 1995; Goodhue & Thompson, 1995; Dishaw & Strong, 1999; Lin & Huang, 2008; Luarn & Huang, 2009; Schrier et al., 2010;Ma et al., 2013) to a large extent. Hence, as expected, it can be concluded that *"Technology Characteristics" has* a strong significant impact on *Task-Technology Fit*.

This result is consistent with the answers of respondents to the second and the forth research questions *(RQ2)* and *(RQ4)*. The answer to the second research question *(RQ2)* indicates that the respondents point to a good level of functionality for the MIS technology. In parallel, the answer to the forth research question *(RQ4)* indicates that respondents point to a high degree of fit between the technology of the MIS and the tasks they perform.

3. Hypothesis 3: Computer self-Efficacy has a significant impact on Task-Technology Fit.

Based on the results of the path analysis, the path H3: CSE → TTF (β= 0.172, p< 0.05) indicates that *Computer Self-Efficacy* has a partial positive impact on *Task-Technology Fit*. This finding is consistent with previous research of (Lee, Cheng, & Cheng, 2007; Luarn & Huang, 2009).

The variable Individual Characteristics (Computer-Self Efficacy) where not exist in the original Task-Technology Fit model. Many researchers have tried to extend TTF model by including the variable Individual Characteristics using by different constructs. In this study, Computer-Self Efficacy has been used to represent Individual Characteristics. Future research is recommended to use other constructs that may better explain Individual Abilities.

In the current study, this result cannot be compared with the answer of the third research question *(RQ3)*. That is because the analysis of the responses to Computer-Self Efficacy field don't give a clear answer to the third research question *(RQ3)*.

4. Hypothesis 4: Task-Technology Fit has a significant impact on Perceived Usefulness.

The path H4: TTF → PU (β= 0.656, p< 0.001) of the PLS path analysis reveals that *Task-Technology Fit* has a strong positive significant effect *on Perceived Usefulness.* These findings are in accordance with the majority of previous research (Klopping & McKinney, 2004; Schrier et al., 2010; Usoro et al., 2010). Moreover, the study of (Misron et al., 2011) refers to a moderate significant positive relationship between TTF and PU. However, (Dishaw & Strong, 1999) refers to an unexpected result of lacking of a direct path between *Task-Technology Fit* and *Perceived Usefulness*.

One key difference between the present study and (Dishaw & Strong, 1999) is that, although they expected a strong association between *Task-Technology Fit* and *Perceived Usefulness*, their analysis indicated a non-significant relationship. In the current study this strong relationship is obtained, possibly due to the different domains of the two studies.

This result is consistent with the answers of respondents to the forth and the fifth research questions *(RQ4)* and *(RQ5)*. The answer to the forth research question *(RQ4)* indicates that respondents point to a high degree of fit between the technology of the MIS and the tasks they perform. In parallel, the answer of respondents to the fifth research question *(RQ5)* point to that the MIS, used in RSSP's area offices, has a high degree of usefulness.

5. Hypothesis 5: Task-Technology Fit has a significant impact on Perceived Ease of Use.

As expected, the path H5: TTF → PEOU (β= 0.712, p< 0.001) refers to a strong positive significant impact of *Task-Technology Fit* on *Perceived Ease of Use*. This result agrees with previous results of most of the previous studies as (Dishaw & Strong, 1999; Klopping & McKinney, 2004; Schrier et al., 2010; Usoro et al., 2010). Furthermore, the study of (Misron et al., 2011) refers to a moderate significant positive relationship between TTF and PEOU. This positive relationship can be interpreted as that when fit between the task and the tool is higher, users perceive the tool to be easier to use for that task (Dishaw & Strong, 1999).

This result is consistent with the answers of respondents to the forth and the sixth research questions *(RQ4)* and *(RQ6)*. The answer to the forth research question *(RQ4)* indicates that respondents point to a high degree of fit between the technology of the MIS and the tasks they perform. In parallel, the answer to the sixth research question *(RQ6)* indicates that most respondents rate the MIS, they use, as easy to use.

6. Hypothesis 6: Task-Technology Fit has a significant impact on User Satisfaction.

Finally, the path H6: TTF ➔ USAT (β= 0.779, p< 0.001) refers to a strong positive significant impact of *Task-Technology Fit* on *User Satisfaction*.

This relationship is also supported by previous research of (Lin, 2012).

Few studies have examined the impact of *Task-Technology Fit* on *User Satisfaction.* The strong relationship which has been revealed by the current study should encourage future studies to replicate studying this relationship.

This result is consistent with the answers of respondents to the forth and the seventh research questions *(RQ4)* and *(RQ7)*. The answer to the forth research question *(RQ4)* indicates that respondents point to a high degree of fit between the technology of the MIS and the tasks they perform. In parallel, the answer to the seventh research question *(RQ7)* indicates that most respondents are satisfied with the performance of the MIS they use at their work..

5.7 Chapter Summary

This chapter, Chapter 5, presented the results of the data analysis process of the collected responses of the study questionnaire that was filled by 217 employees, working in 16 RSSP Area offices which are distributed all-around of the Gaza Strip. The chapter presented a comprehensive descriptive analysis of the sample characteristics. Then, it presented the answering for the research questions. In addition, this chapter showed the hypotheses testing procedures which adopted by this study by using SEM-PLS statistical analysis method. The chapter presented the findings of the analysis and the logic behind using the statistical techniques. Finally, the findings and the significance results of the data analysis have been discussed in detail in the context of the research questions.

The next chapter, Chapter 6, will present the conclusions and the recommendations of the study.

Chapter 6

Conclusions and Recommendations

6.1 Introduction

This chapter carries forward the discussion from the previous chapter and summarizes the key findings and conclusions of the current study. In addition, it includes practical recommendations and theoretical suggestions for future research.

6.2 Conclusions

In light of the findings that presented in the previous chapter, the following important conclusions can be summarized:

6.2.1 Task Characteristics and its relationship with Task-Technology Fit

1. It is concluded that "Task Characteristics" has a partial negative relationship with task-technology fit, which may be interpreted as that the task-technology fit decreases as task requirements increase.
2. The employees' responses to the task characteristics field in the questionnaire can interpreted as that most employees perceive the tasks, they deal with in their area offices, as non-routine, interdependent, and hence, as complex tasks.
3. A relatively large percentage of respondents rank the business problems they deal with frequently involving more than one business function.

6.2.2 Technology Characteristics and its relationship with Task-Technology Fit

1. The employees' responses to the technology characteristics field in the questionnaire reveal that most employees evaluate the MIS technologies as having high level of functionality.
2. However, the employees' responses refer to that RSSP's Area Offices lacks adequate technical support and assistance.
3. The study findings refer to a strong significant impact of *Technology Characteristics* on *Task-Technology Fit.*

6.2.3 Computer Self-Efficacy and its relationship with Task-Technology Fit

1. Computer Self-Efficacy has a partial positive impact on Task-Technology Fit.
2. If new systems would be adopted at RSSP's Area Offices, it is critical to conduct training for employees regarding using these systems to ensure the proper utilization of systems' functionality.
3. A relatively small percentage of respondents could complete the tasks using the software without having a lot of time to complete the tasks if new devices or software package is adopted at their offices.

6.2.4 Task-Technology Fit

1. As expected, the analyzed study model reveals that "task characteristics" is negatively related to task-technology fit. Also, It is concluded that technology characteristics and computer self-efficacy are positively related to task-technology fit. However, it is found that the "Technology Characteristics" has the strongest effect on the fit.
2. The analysis of the Task-Technology Fit field, refer to a high degree of fit between the technology of the MIS and the tasks that employees perform at RSSP's Area Offices.
3. Also, this study highlighted the positive impact of Task-Technology fit on important acceptance and success dimensions of the MIS: Perceived Usefulness, Perceived Ease of Use, and User Satisfaction.

6.2.5 Perceived Usefulness and its relationship with Task-Technology Fit

1. It is concluded from the study findings that Task-Technology fit has a strong positive impact on Perceived Usefulness.
2. The management information systems, used at RSSP's area offices, have high degree of usefulness, from the point of view of employees.
3. A relatively small percentage of respondents think that using the management information systems in their offices enables them to accomplish their tasks more quickly.

6.2.6 Perceived Ease of Use and its relationship with Task-Technology Fit

1. It is concluded from the study findings that Task-Technology fit has a strong positive impact on Perceived Ease of Use.
2. The management information systems, used at RSSP's area offices, are easy to use, from the point of view of employees.
3. A relatively large percentage of respondents found it was easy for them to become skillful at using the management information systems in their area office.

6.2.7 User Satisfaction and its relationship with Task-Technology Fit

1. It is concluded from the study findings that Task-Technology fit has a strong positive impact on User Satisfaction.
2. The study results indicate that most respondents are satisfied with the performance of the MIS they use at their work.

3. A relatively small percentage of respondents think that the design of the management information system take into account the desires and needs of its users.

6.3 Recommendations

6.3.1 Practical Recommendations

1. Due to the negative relationship between Task Characteristics and Task-Technology Fit, the RSSP managers are recommended to take proper actions regarding employees training or tasks re-designing to better utilize IT potential.
2. To enhance technology functionality, RSSP management is recommended to improve the technical assistance and support to deal with the problems which arise during the work of employees at Area Offices.
3. It is clear that in order to enhance Usefulness, Ease of Use, and User Satisfaction of management information systems, RSSP should improve the fit between IT and Task requirements.
4. For future MIS evolution, to enhance the ease of using MIS, RSSP management should improve the flexibility of using MIS.
5. Also, RSSP is suggested to evolve the currently used MIS to take into account the individual desires and needs of MIS users, to improve User Satisfaction.

6.3.2 Theoretical Recommendations (Future researches)

1. The model presented by this study has a strong ability in explaining the variation of the USAT, PEOU, and PU constructs.
2. Few studies have examined the impact of Task-Technology Fit on User Satisfaction. The strong relationship which has been revealed by the current study should encourage future studies to replicate studying this relationship.
3. The study finds support for the idea of integrating TAM and TTF to study the prediction of MIS utilization, user acceptance, and user satisfaction.
4. Measurement scales of the variables could be improved, including scales measuring Task Characteristics and Individual Characteristics (Computer Self-Efficacy).
5. Future research is suggested to use other measurement scales instead of Computer Self-Efficacy, that could be more suitable to assess Individual Characteristics.
6. Future research is recommended to replicate this study in new situations to confirm and to generalize the findings of this study.
7. This study could also serve as the basis for a comparison of utilization, user acceptance and satisfaction with other UNRWA management information systems over time.

8. The R^2 value of Task-Technology Fit, (R^2 = 0.387), indicate that the study model predicts 38.7% of the Task-Technology Fit. Therefore, future studies are recommended to include and to study other important omitted factors that may affect the Task-Technology Fit.

6.4 Chapter Summery

This chapter presented the most important research conclusions classified in many sections based on the research variables. These sections focused on presenting the results of hypotheses testing and the answers of the research questions. Then, it listed the most important drawn recommendations classified to practical and theoretical.

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Appendices

Appendix A

Questionnaire (English version)

Questionnaire

Dear Sir/Madam..

This research studies the fit and the success of Management Information Systems in RSSP that work in the Gaza Strip, to fulfill the requirements of having the MBA degree at the Islamic University of Gaza.

I hope to receive your cooperation and answers that meet reality taking in consideration, that all data will be handled in top confidentiality and only for scientific research purposes.

With respect,

Khaled Al Gherbawi

MBA in Business Administration

Faculty of Commerce

Islamic University - Gaza

Section 1: General Information					
1) Gender:	☐ Male.	☐ Female.			
2) Marital Status:	☐ Married.	☐ Unmarried.			
3) Residential Address:	☐ North Gaza.	☐ Gaza.	☐ Middle.	☐ Khan Younis.	☐ Rafah.
4) Age:	☐ Less than 25 years.	☐ 25 to less than 30 years.			
	☐ 30 to less than 35 years.	☐ 35 to less than 40 years.			
	☐ 40 to less than 45 years.	☐ 45 years and more.			
5) Academic Degree:	☐ Less than Diploma.	☐ Diploma.			
	☐ Bachelor's Degree.	☐ Higher Education.			
6) Employee's field of work (job title):	☐ Area Relief and Social Services Officer.	☐ Area Registration Officer.			
	☐ Registration Assistant.	☐ Social Worker.			
	☐ Data Entry Clerk.	☐ Registration Clerk.			
	☐ Clerk.	☐ Other: _____.			
7) Work Address:	☐ North Gaza.	☐ Gaza.	☐ Middle.	☐ Khan Younis.	☐ Rafah.
8) Years of Experience in Current job:	☐ Less than 5 years.	☐ 5 to less than 10 years.			
	☐ 10 to less than 15 years.	☐ 15 to less than 20 years.			
	☐ 20 to less than 25 years.	☐ 25 years and more.			
9) Information Systems that I use: (Multiple choices may be apply)	☐ Poverty Assessment System (PAS).	☐ Registration Information System (RIS).			
	☐ Inventory System.	☐ Shelter System.			
	☐ Employees Portal.	☐ RSSP Attendance System.			
	☐ E-time System.	☐ ePer System.			
	☐ All above mentioned systems.				
10) Using Management Information Systems in your work including hardware and software is:	☐ Mandatory.	☐ Optional.			

Section 2: Questions: TASK-TECHNOLOGY FIT AND ITS IMPACT ON MIS SUCCESS DIMENSIONS

Please choose a score for each statement that you believe most relev

The Choice	Strongly disagree	Moderately disagree	Slightly disagree	Indifferent	Slightly agree	Moderately agree	Strongly agree
Level of agreement	1	2	3	4	5	6	7

1) Task Characteristics (TC)

	Statement							
1.	I frequently deal with ill-defined business problems.	1	2	3	4	5	6	7
2.	I frequently deal with ad-hoc, non-routine business problems.	1	2	3	4	5	6	7
3.	Frequently the business problems I work on involve answering questions that have never been asked before.	1	2	3	4	5	6	7
4.	The business problems I deal with frequently involve more than one business function.	1	2	3	4	5	6	7

2) Technology Characteristics (TNC)

	Statement							
1.	Management information systems offer me the data that I need for my work.	1	2	3	4	5	6	7
2.	PCs or a Tablets are available for accessing the data that I need on management information systems.	1	2	3	4	5	6	7
3.	Assisters are available when I need a quick help in management information systems problems.	1	2	3	4	5	6	7
4.	Assisters in my office are available when I need a help.	1	2	3	4	5	6	7

3) Computer self-efficacy (CSE)

	Statement							
	If new devices or software package is adopted at my office, I could complete the tasks using the software…							
1.	.. if I had only the device or software manuals for reference.	1	2	3	4	5	6	7
2.	.. without calling someone for help.	1	2	3	4	5	6	7
3.	.. without getting a help from someone else to get started.	1	2	3	4	5	6	7
4.	.. without having a lot of time to complete the tasks.	1	2	3	4	5	6	7
5.	.. without someone showing me how to do it first.	1	2	3	4	5	6	7
6.	.. without using similar device software once before.	1	2	3	4	5	6	7

4) Task-Technology Fit (TTF)

	Statement							
1.	The computerized management information systems available to me are having all critical data that would be very useful to me in my job.	1	2	3	4	5	6	7
2.	I do my job effectively because all of the data I need is available.	1	2	3	4	5	6	7
3.	The RSSP maintains data at an appropriate level of detail for my purposes.	1	2	3	4	5	6	7
4.	It is easy to find out what data the RSSP maintains on a given subject.	1	2	3	4	5	6	7
5.	On the reports or systems I deal with, the exact meaning of data elements is either obvious, or easy to find out.	1	2	3	4	5	6	7
6.	Getting authorization to access data that would be useful in my job is time consuming and difficult.	1	2	3	4	5	6	7
7.	The data is free of cases when supposedly equivalent data from two different sources is inconsistent.	1	2	3	4	5	6	7
8.	Always it is easy to compare or aggregate data from two different sources because the data is defined similarly.	1	2	3	4	5	6	7
9.	The data that I use or would like to use is accurate enough for my purposes.	1	2	3	4	5	6	7
10.	I can get data quickly and easily when I need it.	1	2	3	4	5	6	7
11.	Our computerized management information systems are too flexible to be able to respond to my changing needs for data.	1	2	3	4	5	6	7
12.	I am getting as quick a turnaround as I need on requests for new reports or data.	1	2	3	4	5	6	7
13.	I am getting the help I need in accessing and understanding the data.	1	2	3	4	5	6	7
14.	The computerized information systems that give me access to data are convenient and easy to use.	1	2	3	4	5	6	7
15.	The data is not subject to frequent problems and crashes.	1	2	3	4	5	6	7
16.	I can count on the system to be "up" and available when I need it.	1	2	3	4	5	6	7
17.	I can get data that is current enough to meet my needs.	1	2	3	4	5	6	7
18.	I am getting the training I need to be able to use RSSP computerized information systems, procedures and data effectively.	1	2	3	4	5	6	7
19.	The data that I need is displayed in a readable and understandable form.	1	2	3	4	5	6	7
20.	The data is stored using methods and forms that let it easy to know how to use it effectively.	1	2	3	4	5	6	7

5) Perceived Usefulness (PU)

	Statement							
	Using the management information systems in my office…							
1.	… enables me to accomplish my tasks more quickly.	1	2	3	4	5	6	7
2.	… improves my job performance.	1	2	3	4	5	6	7
3.	… increases my productivity.	1	2	3	4	5	6	7
4.	… enhances my effectiveness on the job.	1	2	3	4	5	6	7
5.	… makes it easier to do my job.	1	2	3	4	5	6	7
6.	… is useful in my job.	1	2	3	4	5	6	7

6) Perceived Ease of Use (PEOU)

	Statement							
1.	Learning to operate the management information systems in my office is easy for me.	1	2	3	4	5	6	7
2.	I find it easy to get the management information systems in my office to do what I want it to do.	1	2	3	4	5	6	7
3.	My interaction with the management information systems in my office is clear and understandable.	1	2	3	4	5	6	7
4.	I find the management information systems in my office flexible to interact with.	1	2	3	4	5	6	7
5.	It is easy for me to become skillful at using the management information systems in my office.	1	2	3	4	5	6	7
6.	I find the management information systems in my office easy to use.	1	2	3	4	5	6	7

7) User Satisfaction (USAT)

	Statement							
1.	I am satisfied to continue using the management information systems in my office.	1	2	3	4	5	6	7
2.	I am pleased with my previous experience of using the management information systems in my office.	1	2	3	4	5	6	7
3.	I am satisfied that the management information systems at my office meet my information needs.	1	2	3	4	5	6	7
4.	I am satisfied with the management information systems efficiency.	1	2	3	4	5	6	7
5.	I think that the design of the information system take into account the desires and needs of its users.	1	2	3	4	5	6	7
6.	Overall, I am satisfied with the management information systems at my office.	1	2	3	4	5	6	7

Appendix B

Request for Questionnaire Evaluation

طلب تحكيم استبانة

سعادة الدكتور/ المحترم،،

السلام عليكم و رحمة الله و بركاته ،،،

استناداً إلى تجربتكم الواسعة في مجال البحث العلمي، يتشرف الباحث بأن يضع بين أيديكم استبانة بعنوان: "**مدى ملاءمة التكنولوجيا المستخدمة وأثرها على نجاح نظم المعلومات الإدارية المحوسبة– دراسة حالة برنامج الإغاثة والخدمات الاجتماعية بوكالة الغوث بغزة**"، والتي قام الباحث بإعدادها ضمن دراسة يجريها لنيل درجة الماجستير في إدارة الأعمال.

لذا نرجو من سيادتكم التكرم بتحكيم الاستبانة المرفقة والتعليق عليها ، نظراً لخبرتكم المتراكمة في هذا المجال، ولما لرأيكم من أهمية واضحة في دعم وتنمية البحث العلمي..

أشكر لكم حسن تعاونكم،

وأقدر لكم جهدكم ووقتكم الثمين.

الباحث: خالد بسام الغرباوي

برنامج الماجستير في إدارة الأعمال – كلية التجارة

الجامعة الإسلامية – غزة

Appendix C

Questionnaire (Arabic version)

استـــبانـــة

عزيزي الموظف..

يقوم الباحث بدراسة مدى ملاءمة التكنولوجيا المستخدمة وأثرها على نجاح نظم المعلومات الإدارية المحوسبة المطبقة في مكاتب برنامج الإغاثة والخدمات الاجتماعية بوكالة الغوث الدولية (الأونروا) في جميع مناطق قطاع غزة، وذلك استكمالاً لمتطلبات الحصول على درجة الماجستير في إدارة الأعمال من الجامعة الإسلامية بغزة.

ومن منطلق إيماننا بأنكم كعاملين في مكاتب الخدمات والإغاثة الاجتماعية تمتلكون من الخبرة والتجربة التي تجعلكم المصدر الأمثل للحصول على المعلومات المطلوبة بدقة وأمانة، نأمل من حضرتكم التكرم بتعبئة الاستبانة المرفقة باختيار الإجابات التي تعكس واقع العمل في مكتبكم، مع التأكيد على أن المعلومات التي سيتم الحصول عليها من قبلكم ستستخدم فقط لأغراض البحث العلمي، وسيتم التعامل مع هذه المعلومات بسرية تامة.

أشكر لكم حسن تعاونكم،

وأقدر لكم جهدكم ووقتكم الثمين لتعبئة الاستبيان.

الباحث: خالد بسام الغرباوي

برنامج الماجستير في إدارة الأعمال – كلية التجارة

الجامعة الإسلامية – غزة

أولاً: بيانات عامة					
1. **الجنس:**	☐ ذكر.	☐ أنثى.			
2. **الحالة الاجتماعية:**	☐ متزوج.	☐ غير متزوج.			
3. **مكان السكن:**	☐ شمال غزة.	☐ غزة.	☐ الوسطى.	☐ خان يونس.	☐ رفح.
4. **العمر:**	☐ أقل من 25 عاماً. ☐ 30 إلى أقل من 35 عاماً. ☐ 40 إلى أقل من 45 عاماً.	☐ 25 إلى أقل من 30 عاماً. ☐ 35 إلى أقل من 40 عاماً. ☐ 45 فأكثر.			
5. **الدرجة العلمية:**	☐ أقل من دبلوم. ☐ بكالوريوس.	☐ دبلوم (شهادة متوسطة). ☐ دراسات عليا.			
6. **موقعك الوظيفي حالياً:**	☐ مدير مكتب منطقة. ☐ مساعد مسؤول التسجيلات. ☐ كاتب إدخال بيانات. ☐ كاتب.	☐ مسؤول تسجيلات منطقة. ☐ باحث اجتماعي. ☐ كاتب تسجيلات. ☐ غير ذلك: _____.			
7. **المنطقة الجغرافية لمكان عملك:**	☐ شمال غزة.	☐ غزة.	☐ الوسطى.	☐ خان يونس.	☐ رفح.
8. **سنوات الخبرة في الوظيفة الحالية:**	☐ أقل من 5 سنوات. ☐ 10 إلى أقل من 15 سنة. ☐ 20 إلى أقل من 25 سنة.	☐ 5 إلى أقل من 10 سنوات. ☐ 15 إلى أقل من 20 سنة. ☐ 25 سنة فأكثر.			
9. **نظم المعلومات التي تستخدمها:** **(يمكن اختيار أكثر من بند)**	☐ نظام مسح وتقييم الفقر (PAS). ☐ نظام تقييم الأضرار (Shelter System). ☐ نظام الحضور المحوسب (Attendance). ☐ نظام إدارة وتقييم الأداء (ePer System). ☐ جميع الأنظمة المذكورة.	☐ نظام معلومات التسجيلات (RIS). ☐ نظام إدارة الجرد (Inventory System). ☐ بوابة معلومات الموظفين (Emp. Portal). ☐ نظام الإجازات ولوائح الدوام (e-time).			
10. **استخدامك لنظم المعلومات الإدارية المحوسبة في مكتب الخدمات وما تشمله من معدات وبرمجيات لأداء عملك يتم بشكل:** ☐ إجباري. ☐ اختياري.					

ثانياً: أسئلة الاستبانة: مدى ملاءمة التكنولوجيا المستخدمة وأثرها على أبعاد نجاح نظم المعلومات الإدارية.

يرجى التكرم باختيار الإجابة بناءً على موافقتك على كل من العبارات الآتية:

الرأي	لا أوافق بشدة	لا أوافق جداً	لا أوافق	محايد	أوافق	أوافق جداً	أوافق بشدة
درجة الموافقة	1	2	3	4	5	6	7

1) خصائص المهام Task Characteristics (TC)

	البنود	لا أوافق بشدة	لا أوافق جداً	لا أوافق	محايد	أوافق	أوافق جداً	أوافق بشدة
.1	أتعامل كثيراً من الأحيان مع مشكلات عمل طبيعتها غير محددة مسبقاً.	1	2	3	4	5	6	7
.2	أتعامل كثيراً من الأحيان مع مشكلات عمل مستجدة وغير روتينية.	1	2	3	4	5	6	7
.3	تتضمن مشكلات العمل التي أتعامل معها غالباً الإجابة على أسئلة تطرح لأول مرة.	1	2	3	4	5	6	7
.4	تتضمن مشكلات العمل التي أتعامل معها غالباً أكثر من مهمة عمل واحدة.	1	2	3	4	5	6	7

2) خصائص التكنولوجيا Technology Characteristics (TNC)

	البنود	لا أوافق بشدة	لا أوافق جداً	لا أوافق	محايد	أوافق	أوافق جداً	أوافق بشدة
.1	تُقدِّم لي نظم المعلومات الإدارية المستخدمة البيانات التي أحتاج إليها في عملي.	1	2	3	4	5	6	7
.2	تتوفّر أجهزة حاسوب من أجل الوصول إلى البيانات التي أحتاجها عبر نظم المعلومات الإدارية.	1	2	3	4	5	6	7
.3	يتوفّر الدعم الفني عندما أحتاج إلى مساعدة سريعة في المشكلات المتعلقة بنظم المعلومات الإدارية.	1	2	3	4	5	6	7
.4	يتوفّر خبراء في نظم المعلومات الإدارية في نفس مكان عملي عندما أحتاج إلى المساعدة.	1	2	3	4	5	6	7

3) الكفاءة الذاتية في استخدام الحاسوب Computer Self-Efficacy (CSE)

	في حالة تبني استخدام أجهزة أو برامج حاسوبية جديدة في مكان عملي: **يمكنني إنجاز المهام باستخدام هذه الأجهزة أو البرامج ...**	لا أوافق بشدة	لا أوافق جداً	لا أوافق	محايد	أوافق	أوافق جداً	أوافق بشدة
.1	...إذا كان لديّ فقط دليل استخدام هذه الأجهزة أو البرامج كمرجع.	1	2	3	4	5	6	7
.2	...دون الحاجة للاتصال بشخص ما للمساعدة عندما تواجهني مشكلة.	1	2	3	4	5	6	7
.3	...دون الحاجة لمساعدة شخص مّا عند بداية الاستخدام.	1	2	3	4	5	6	7
.4	...دون الحاجة للكثير من الوقت لإنجاز المهام باستخدام هذه الأجهزة أو البرامج.	1	2	3	4	5	6	7
.5	...دون الحاجة إلى أن يرشدني شخص مّا إلى كيفية استخدام هذه الأجهزة أو البرامج أولاً.	1	2	3	4	5	6	7
.6	...دون الحاجة إلى تجربة سابقة في استخدام أجهزة أو برامج مشابهة قبل تنفيذ المهام.	1	2	3	4	5	6	7

4) ملاءمة التكنولوجيا للمهام Task-Technology Fit (TTF)

	البنود	لا أوافق بشدة	لا أوافق جداً	لا أوافق	محايد	أوافق	أوافق جداً	أوافق بشدة
.1	تمتلك نظم المعلومات الإدارية المحوسبة المتاحة لي جميع البيانات الضرورية والمفيدة في وظيفتي.	1	2	3	4	5	6	7
.2	أؤدي وظيفتي بفعالية بسبب أن جميع البيانات التي أحتاجها متوفرة.	1	2	3	4	5	6	7
.3	تحتفظ نظم المعلومات الإدارية المستخدمة بالبيانات عند مستوى مناسب من التفصيل من أجل أغراض عملي.	1	2	3	4	5	6	7
.4	يكون من السهل معرفة ما يحتفظ به برنامج (دائرة) الإغاثة والخدمات الاجتماعية من بيانات متعلقة بموضوع معين.	1	2	3	4	5	6	7
.5	أتعامل مع تقارير ونظم تتسم عناصر البيانات فيها بأن معناها الدقيق واضح أو يسهل استيضاحه.	1	2	3	4	5	6	7
.6	يمكنني الحصول بشكل سهل وسريع على التفويض اللازم من أجل الوصول إلى البيانات المفيدة لوظيفتي.	1	2	3	4	5	6	7
.7	تخلو البيانات التي يُفترض تكافؤها من مصدرين مختلفين من حالات تكون فيها متعارضة.	1	2	3	4	5	6	7
.8	يكون من السهل دائماً مقارنة أو تجميع البيانات من مصدرين مختلفين لأن البيانات معرّفة بصورة متطابقة.	1	2	3	4	5	6	7
.9	تتسم البيانات التي أستخدمها أو أود استخدامها بأنها بيانات دقيقة بشكل كاف لأغراض عملي.	1	2	3	4	5	6	7
.10	أستطيع الحصول على البيانات بسرعة وبسهولة عندما أحتاجها.	1	2	3	4	5	6	7
.11	تتميز نظم المعلومات الإدارية في عملي بمرونة تمكنها من الاستجابة لاحتياجاتي المتغيرة من البيانات.	1	2	3	4	5	6	7
.12	أحصل على احتياجاتي من البيانات والتقارير الجديدة بالسرعة المتوافقة مع سرعة التغيّرات في متطلبات عملي.	1	2	3	4	5	6	7
.13	أحصل على المساعدة التي أحتاجها فيما يخص آليات الوصول إلى البيانات وفهمها.	1	2	3	4	5	6	7
.14	تتسم نظم المعلومات الإدارية المحوسبة التي توصلني إلى البيانات بالملائمة وسهولة الاستخدام.	1	2	3	4	5	6	7
.15	تتسم نظم المعلومات الإدارية المحوسبة التي أستخدمها بالاستقرار وخلوها من الأعطال المتكررة.	1	2	3	4	5	6	7
.16	أثقُ بجهوزية نظم المعلومات التي أستخدمها فهي تكون دائماً جاهزة ومتاحة عندما أحتاجها.	1	2	3	4	5	6	7
.17	أستطيع الحصول على بيانات حديثة بالقدر الكافي الذي يلبي احتياجاتي في العمل.	1	2	3	4	5	6	7
.18	أتلقى التدريب الذي أحتاجه لأكون قادراً على استخدام نظم المعلومات، والإجراءات، والبيانات بصورة فاعلة.	1	2	3	4	5	6	7
.19	يتم عرض البيانات التي أحتاجها بشكل سهل القراءة والفهم.	1	2	3	4	5	6	7
.20	يتم تخزين البيانات بأشكال وطرق تجعل من السهل معرفة كيفية استخدامها بصورة فعّالة وخالية من اللبس.	1	2	3	4	5	6	7

5) المنفعة المدركة لنظم المعلومات (PU) Perceived Usefulness

	إنّ استخدامَ نظم المعلومات الإدارية المحوسبة في مكان عملي...	لا أوافق بشدة	لا أوافق جداً	لا أوافق	محايد	أوافق	أوافق جداً	أوافق بشدة
.1	...يُمكّنني من إنجاز مهامي بسرعة أكبر.	1	2	3	4	5	6	7
.2	...يُحسّن من أدائي الوظيفي.	1	2	3	4	5	6	7
.3	...يزيد من إنتاجيتي.	1	2	3	4	5	6	7
.4	...يُحسّن من فاعليتي في العمل.	1	2	3	4	5	6	7
.5	...يُسهّل من أدائي لوظيفتي.	1	2	3	4	5	6	7
.6	...يُفيدُني في أداء عملي.	1	2	3	4	5	6	7

6) سهولة استخدام نظم المعلومات المدركة (PEOU) Perceived Ease of Use

	البنود	لا أوافق بشدة	لا أوافق جداً	لا أوافق	محايد	أوافق	أوافق جداً	أوافق بشدة
.1	أجد أنّ تَعلُّم تشغيل نظم المعلومات الإدارية في مكان عملي سهلٌ بالنسبة لي.	1	2	3	4	5	6	7
.2	أجد أنّه من السهل أن أجعل نظم المعلومات الإدارية في عملي تؤدي ما أريده منها.	1	2	3	4	5	6	7
.3	أجد أنّ تفاعلي مع نظم المعلومات الإدارية في مكان عملي واضح ومفهوم.	1	2	3	4	5	6	7
.4	أجد نظم المعلومات الإدارية في المكتب الذي أعمل فيه مرنة في التفاعل معها.	1	2	3	4	5	6	7
.5	أجد أنّه من السهل بالنسبة لي أن أكون ماهراً في استخدام نظم المعلومات الإدارية في مكان عملي.	1	2	3	4	5	6	7
.6	أجد نظم المعلومات الإدارية في المكتب الذي أعمل فيه سهلة الاستخدام.	1	2	3	4	5	6	7

7) مدى رضا مستخدمي نظم المعلومات (USAT) User Satisfaction

	البنود	لا أوافق بشدة	لا أوافق جداً	لا أوافق	محايد	أوافق	أوافق جداً	أوافق بشدة
.1	أنا راضٍ عن استمراري في استخدام نظم المعلومات الإدارية في المكتب الذي أعمل فيه.	1	2	3	4	5	6	7
.2	أنا مسرور بتجربتي في استخدام نظم المعلومات الإدارية في المكتب الذي أعمل فيه.	1	2	3	4	5	6	7
.3	أنا راضٍ أنّ نظم المعلومات الإدارية في المكتب الذي أعمل فيه تلبي حاجتي من المعلومات.	1	2	3	4	5	6	7
.4	أنا راضٍ عن كفاءة نظم المعلومات الإدارية في المكتب الذي أعمل فيه.	1	2	3	4	5	6	7
.5	أنا أعتقد أن تصميم نظم المعلومات يأخذ بعين الاعتبار الرغبات والاحتياجات الفردية للمستخدمين.	1	2	3	4	5	6	7
.6	بصورة عامة، أنا راضٍ عن نظم المعلومات الإدارية المستخدمة في المكتب الذي أعمل فيه.	1	2	3	4	5	6	7

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Appendix D

Questionnaire Evaluation

Academic and professional referees' names and titles

	Name	Title
1.	Dr. Ashraf M. Alattar	Assistant Professor, Faculty of Information Technology, Islamic University of Gaza.
2.	Dr. Rebhi S. Baraka	Assistant Professor, Dean of Faculty of Information Technology, Islamic University of Gaza.
3.	Dr. Wasim I. Habil	Associate Professor, Faculty of Commerce, Islamic University of Gaza.
4.	Dr. Hatem A. Elaydi	Associate Professor, Faculty of Engineering, Islamic University Of Gaza.
5.	Dr. Sami S. Abu Naser	Professor, Faculty of Engineering and Information Technology, Al Azhar University - Gaza.
6.	Dr. Ahmed Y. Mahmoud	Assistant Professor, Faculty of Engineering and Information Technology, Al Azhar University - Gaza.
7.	Dr. Ihab S. Zaqout	Associate Professor, Faculty of Engineering and Information Technology, Al Azhar University - Gaza.
8.	Dr. Mansour M. Alayoubi	Assistant Professor, Business Administration, Palestine Technical College - Deir balah - Gaza.
9.	Dr. Nabeel A. Allouh	Human Development Consultant, General Personnel Council - Gaza
10.	Mr. Mohammad F. Farahat	Former Senior Admin Support Officer, RSSP-UNRWA- Gaza, MBA in Business Administration.