An-Najah National University
Faculty of Graduate Studies

E-banking Adoption Model in Palestine

By
Ahmed Hatem Khrewesh

Supervisor
Dr. Baker Abdalhaq

This Thesis is Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Engineering Management, at Faculty of Graduate Studies, at An-Najah National University, Nablus, Palestine
2011

E-banking Adoption Model in Palestine

By
Ahmed H. Khrewesh

This thesis was defended successfully on 05 /7 /2011 and approved by:

Defense Committee Members	Signature
Dr. Baker Abdalhaq (Supervisor).	....
Dr. Mustafa Abusalah (External Examiner).	....
Dr. Majeed Mansour (Internal Examiner).	....

Acknowledgement

Special and sincere respect, gratitude and appreciation are expressed to my supervisor Dr. Baker Abdalhaq for his invaluable supervision, great efforts in guidance, encouragement throughout the research work.

Appreciation and thanks are also extended to committee members, Dr. Majeed Mansour and Dr. Mustafa Abusalah for their time and effort in reviewing this work.

I am forever indebted to my family for their encouragement and support throughout my entire life.

Special thanks are expressed to my dearest friends for their help and encouragement.

Finally, I thank the staff of Engineering Management program.

Thank you all,

<div dir="rtl">

الإقرار

أنا الموقع أدناه مقدم الرسالة التي تحمل العنوان:

</div>

E-banking Adoption Model in Palestine

<div dir="rtl">

نموذج تبني الخدمات المصرفية الالكترونية في فلسطين

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

</div>

Declaration

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

Student's name:	………………….......………………	:اسم الطالب
Signature:	…………………..……………….....	:التوقيع
Date:	……………………………………	:التاريخ

LIST OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Figure No.	Title	Page
Figure 1-1	Structure of the Thesis	12
Figure 2-1	E-banking Types	18
Figure 2-2	Technology Acceptance Model	44
Figure 2-3	Theory of Planned behavior	45
Figure 2-4	TOE Framework	47
Figure 2-5	General Model for E-banking Adoption	61
Figure 2-6	Research Model	62
Figure 5-1	E-banking Adoption Model in Palestine	123

ABBREVIATIONS

E-banking	Electronic Banking
ICT	Information and Communication Technology
IT	Information Technology
TAM	Technology Acceptance Model
TPB	Theory of Planned Behavior
PU	Perceived Usefulness
PEOU	Perceived Ease of Use
ATT	Attitude
PBC	Perceived Behavioral Control
SN	Subjective Norms
BR	Bank's Role
INT	Intention
PER RISK	Performance Risk
FIN RISK	Financial Risk
SOC RISK	Social Risk
SEC RISK	Security Risk
PR	Perceived Risk
TOE	Technology-Organization-Environment

DEFINITION OF TERMS

E-banking: "The use of Computer, Telephones, Internet, Mobiles, and ATMs to retrieve and process banking data (statements, transaction details, etc.) and to initiate transactions (payments, transfers, requests for services, etc.) directly with a bank or other financial services provider remotely via a telecommunications network" (Yang ,1997, Daniel, 1999).

Technology Acceptance Model (TAM): TAM is a model to predict user acceptance for technologies. According to TAM, attitude is influencing the intention to use new technologies, attitude also influenced by perceived usefulness and perceived ease of use (Davis *et al.*, 1989).

Theory of Planned Behavior (TPB): TPB is a model that explains the factors influencing the intention to use technologies. According to theory of planned behavior, attitude, subjective norms and perceived behavioral control are directly influencing the intention to use new technology (Ajzen, 1989).

Perceived Usefulness: "The degree to which a user believes that using the system will enhance his or her performance" (Dillon and Morris, 1996).

Perceived Ease of Use:" The degree to which a person believes that using a particular system would be free from effort" (Davis, 1989).

Perceived Behavioral Control: Availability of skills and resources, as well as the perceived importance of those skills and resources (Baraghani, 2007).

Attitude: Positive or negative evaluation on specific thing or person. Attitude is influenced by beliefs about the consequences (Tan and Teo, 2000, Liao et al., 1999).

Subjective Norms: People are influenced by important persons to perform specific behavior (Green, 2005)

Perceived Risk: "Commonly thought of as felt uncertainty regarding possible negative consequences of using a product or service" (Natarajan et al., 2010).

Technology-Organization-Environment Framework (TOE): TOE determines the factors that influence the adoption of technology and innovations. According to TOE, technological innovations are influenced by three categories; technological factors, organizational factors, and environmental factors (Tornatzky and Fleischer, 1990).

SPSS: Statistical Package for the Social Sciences software. SPSS is a computer program used for statistical analysis. SPSS can provide several statistics and empower researchers to achieve their purposes (DeCoster, 2004).

E-banking Adoption Model in Palestine
BY
Ahmed Hatem Khrewesh
Supervisor
Dr. Baker Abdalhaq

Abstract

This research aims at investigating Factors Influencing Customers' Adoption of E-banking Technology in Palestine. Also, the research aims to introduce E-banking adoption model which can help the banking sector in Palestine. This model could help in spreading E-banking technology among Palestinian society. Literature was reviewed to define Research Framework which is based on the extension of Technology Acceptance Model (TAM) with Theory of Planned Behavior (TPB), Perceived Risk, Technology Usage, and Bank's Role.

The research utilized both qualitative and quantitative research methodology. Qualitative data were collected via interviews with IT bankers and specific banks' customers. In addition, the quantitative data were gathered from a random sample of one thousand and ten (n=1010) Palestinian banks' customers via a survey that was developed for this purpose. We retrieved seven hundred and thirty nine (n=739) questionnaires with a response rate of seventy three percent (73%).

The research questionnaire was collected, coded, and entered in to SPSS v 17 in order to examine factors influencing Customers' Adoption of E-banking Technology in Palestine. Various statistical processes were employed such as frequency, means, percentages, in order to answer and test the research questions and hypotheses.

Results indicate that Perceived usefulness, perceived ease of use, attitude, and technology (Computer and Internet) usage are the most significant factors influencing E-banking adoption in Palestine. Whereas subjective norms, bank's role, perceived behavioral control, and perceived risk are influencing E-banking adoption in Palestine in less degree.

Based on the research findings, Palestinian banks should work on formulating new strategies, developing their operational process, introducing services with high quality, and coordinating with other entities such as PMA, government, ICT companies that would be helpful in achieving customers' trust and spreading E-banking technology among Palestinian society.

Chapter One

Introduction

Chapter One

Introduction

1. Introduction:

This chapter aims to introduce an overview of the research title, research approach, and background. Moreover, this chapter clearly shows the problem statement, research questions, research objectives, and the structure of the thesis.

1.1 Overview:

Information Technology (IT) is an important factor for success; decision makers often consider Information Technology as a main strategic tool in work development and to achieve competitive advantages over other competitors (Jesu´ S Marti´Nez-Fri´ Centre for Astrobiology, 2003).

Information Technology is a continuous process. Every day has iterations as well as it introduces new innovations in many life aspects. The technological revolution undergone in Developed countries, in fact have changed many aspects of life (Mattila et al., 2003).

Many Technological innovations were faced by a spectrum of reactions, for instance some people see these technological innovations as a mean to make life easy and interesting, while others see them as a source of risk and fear (Dillon and Morris, 1996).

E-banking is one of the outcomes of the technological revolution. It introduces many opportunities for both banks and customers (Jayawardhena and Foley, 2000).

Recently, the E-banking technology started to find its way in the Palestinian society (IT bankers, 2011). Several Palestinian banks offer E-banking services (IT bankers, 2011). This research aims to study factors influencing E-banking adoption in Palestine, moreover, to help in developing a Model which can help to adopt E-banking technology in Palestine.

1.2 Research Approach:

We seek to introduce E-banking Adoption Model by integrating Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), Perceived Risk, Bank's Role, and Technology (Internet, and Computers) Usage.

Lallmahamood (2007) emphasized that TAM is applied in various contexts in order to investigate and determine the acceptance of various Information Systems and technology. TAM highlights technological features and system facilities. TAM consists of three main elements: perceived usefulness, perceived ease of use, and attitude which are influencing the adoption of technological solutions.

Green (2005) mentioned another user's acceptance model which is Theory of Planed Behavior (TPB). This model consists of main three variables: attitude, subjective norms, and perceived behavioral control. It worth mentioning that TPB model depends mainly on social systems and behavior rather than technological features (Green, 2005).

Tan & Teo (2000); kuisma, et al., (2007) indicated that other variables such as: perceived risk, actual use of technology (Computer and

Internet), and bank's role play a significant role in adoption process of technology (Tan and Teo, 2000, kuisma et al., 2007).

Decision makers, as leaders of society, are interested in developing their societies by implementing information and communication technology (ICT) in all life aspects (Akinyele and Olorunleke, 2010).

On the other hand, there should be acceptance of technological solutions by people; otherwise implementation process will not lead to the development. Therefore, researchers focus attention on user's acceptance models in order to understand people needs and the way that lead to adopt technological solutions (Pikkarainen et al., 2004)

In this research, we aim to introduce a complete customer's acceptance model for E-banking technology. a model that focuses on technological features, people behaviors, perceived risk of the use of E-banking technology, familiarity with technology, and banks' role in the adoption of E-banking. This research model contains several factors that are influencing E-banking adoption in Palestine.

1.3 Background:

Banking sector is an important sector which supports economic development in countries. Banks function as a main support for many investments and projects.

Information and communication Technology are gaining grounds all over the world. Organizations are depending on Technology and Internet to save money, time, and meet customers' expectations. Further, Banks seek

to adopt new technologies and innovations in order to compete and expand their market shares (Khan, 2009).

Banks use E-banking technology because it enables them to achieve competitive advantage and services with high quality (Jayawardhena and Foley, 2000).

Jesu´ S Marti´Nez-Fri´ Centre for Astrobiology (2003) defines E-banking technology by which means that banking services are introduced among telecommunication channels far away from traditional banking work (Jesu´ S Marti´Nez-Fri´ Centre for Astrobiology, 2003).

Internet and other communication channels empower banks to use E-banking technology in order to introduce the best services for customers everywhere and anytime (Brogdon, 1999).

E-banking services originated in developed countries since 1980's. This appearance started with Automated teller Machine (ATM). By 1990s telephone banking enabled customers to perform financial transactions via telephone lines. By the beginning of 1995, Internet banking services appeared in the United Sates (USA) (Sohail and Shanmugham, 2003).

By the time, several international banks adopted online banking e.g. Citibank. Furthermore, in the beginning of 2000, 40% of financial transactions in Finland were made by Internet banking. By the end of 2004, it was estimated that there are 35 million customers in USA using E-banking technology such as Internet banking (Mattila et al., 2003).

Although E-banking technology introduces many benefits for banks and customers (Jayawardhena and Foley, 2000), customers still fear from

the risk of E-banking technology. Some Customers feel that E-banking services could make them lose their money (Natarajan et al., 2010).

In Palestine, customers do not use technological solutions like developed countries which could be interpreted that E-banking Technology has low acceptance in Palestine (IT bankers, 2011).

IT bankers indicate that the total percentage of Palestinian customers using primary E-banking in Palestine is around 23% (IT bankers, 2010, Banks' customers, 2011).

This research seeks to understand the real factors that influence E-banking adoption in Palestine; also the research seeks to measure Palestinian customers' perceptions toward E-banking technology.

1.4 Motivation to Conduct the Research:

Electronic Commerce is becoming a dominant trading channel. Developed countries are using E-commerce in their markets. Palestine is working its way steadily toward development (Ministry of Telecom & Information Technology, 2011). In studding E-banking technology and its acceptance could help in achieve the Palestinian development goals.

Other motivations encourage studying this topic like:

1- The use of E-banking Technology in Palestine is not mature yet; it still suffers from lack of popularity (IT Bankers, 2011). So it deserves to be studied to introduce clear understanding of this technology as well as customer's acceptance model.

2- E-banking technology deals with financial transactions and money, so it is not easy to be accepted by people. It deserves to be studied to help banks to understand people thoughts and perception toward E-banking.

3- Palestinian economy needs strong banking sector to support it. E-banking technology is an important factor for banks' development towards improving the economy.

4- This research is the first research in Palestine which studies the factors influencing E-banking adoption by Palestinian customers.

1.5 Problem Statement:

E-banking Technology is new in Palestine. Palestinian banks still working on developing such technologies. The Palestinian banking sector offers several E-banking services such as ATM, SMS banking, and online banking (IT bankers, 2011).

On the other hand, customers, organizations, and firms still refrain from adopting such services. A recent report indicates that around 23% of Palestinian customers use primary E-banking services (IT bankers, 2011). In fact, these estimates are approximation to the reality, the actual use of this technology is highly less than these percentages (IT Bankers, 2011).

We discovered that there is a gap between development wheel and people; Palestine nowadays seeks to develop its infrastructure (Ministry of Telecom & Information Technology, 2011). While the adoption process by customers is not mature yet (IT Bankers, 2011).

The Development process needs a strong banking sector that could support and protect emerging Palestinian economy from collapse. As a result, banks seek to upgrade their banking services by introducing E-banking services. This direction is hindered due to the fact the Palestinian customers' usage of E-banking services is quiet recent and low (IT Bankers, 2011).

As a result, we did not find other studies identify the factors that influence E-banking technology by customers. Furthermore, banks lack any strategic plans that aim at spreading E-banking technology among their customers (IT bankers, 2010).

Hence, in order to aid banks to increase E-banking adoption by customers; it is important to identify factors that influence E-banking adoption in Palestine. Therefore we aim in this research to introduce a Model that could help banks spreading E-banking services acceptance in Palestine.

1.6 Research Questions:

This research aims at answering the following questions:

1. What are the factors influencing adoption of E-banking by Palestinian banks customers?

2- What are the Role of Perceived Risk, Technology (Computers, and Internet) Usage, and Palestinian Banks in E-banking adoption?

1.7 Research Objectives:

The research aims to achieve the following objectives:

- Identify the factors that influence adoption of E-banking.

- Identify the perceptions and attitudes toward E-banking technology in Palestine.

Specifically, the main objectives of this research are:

1. Assessing E-banking Technology in Palestine.

2. Document current usage and knowledge of E-banking by customers in Palestine.

3. Introduce a quantify assessment for people perceptions and believes toward E-banking technology.

4. Find the correlations between factors that influencing E-banking adoption in Palestine.

5. Illustrate risk associated with E-banking activities.

6. Introduce E-banking Adoption Model in Palestine.

7. Help researchers and bankers to know the most important factors influencing E-banking technology in Palestine.

1.8 Research Hypotheses:

The research aims to test the following hypotheses:

- H1: Perceived usefulness has positive influence on attitude to use E-banking services.

- H2: Perceived usefulness has positive influence on intention to use E-banking Services.

- H3: Perceived ease of use has positive influence on perceived usefulness to use E-banking Services.

- H4: Perceived ease of use has positive influence on attitude to use E-banking Services.

- H5: Perceived ease of use has negative influence on perceived risk to use E-banking Services.

- H6: Attitude has positive influence on intention to use E-banking Services.

- H7: Perceived behavior control has positive influence on intention to use E-banking Services.

- H8: Subjective norms has positive influence on intention to use E-banking Services.

- H9: Bank's Role has positive influence on attitude to use E-banking services.

- H10: Bank's Role has positive influence on intention to use E-banking services.

- H11: Perceived Risk has negative influence on attitude to use E-banking Services.

- H12: Security Risk has negative influence on intention to use E-banking Services.

- H13: Perceived Risk has negative influence on perceived usefulness to use E-banking Services.

- H14: Social Risk has positive influence on Subjective Norms.

- H15: Technology (Computer and Internet) usage has a positive influence on perceived usefulness.

- H16: Technology (Computer and Internet) usage has a positive influence on perceived ease of use.

- H17: Technology (Computer and Internet) usage has a positive influence on attitude.

- H18: Technology (Computer and Internet) usage has a positive influence on perceived behavior control.

- H19: Technology (Computer and Internet) usage has a positive influence on intention.

- H20: Technology (Computer and Internet) usage has a negative influence on perceived risk.

1.9 Structure of the Thesis:

The thesis is organized into six chapters as the following:

CH1: INTRODUCTION

CH2: LITRITURE REVIEW
Research Model & Hypotheses

CH3: RESEARCH METHODOLOGY

CH4: DATA COLLECTION

CH5: DATA ANALYSIS & RESULTS

CH6: DISSCUTION & RECOMENDATIONS

Figure 1-1: Structure of the thesis, Source: The Researcher

Chapter Two

Literature Review

Chapter two

Literature Review

2. Literature Review:

This Chapter aims to discuss the research conceptual framework and the previous literature concerning E-banking. This chapter is divided into two parts, the first one discuss E-banking and ICT terminologies. While the second part of this chapter discusses the scientific studies related to E-banking adoption, user acceptance models, perceived risk, technology usage, and bank's role. Moreover, this chapter involves some main ideas extracted from the interviews that we conducted with Palestinian IT banker's and specific Palestinian's Banks' Customers. In this chapter, we will introduce the Research Model and presenting the research hypotheses.

2.1 E-banking Discussion:

2.1.1 Introduction:

On the light of the current global markets, people have the ability to access all markets around the world. The direct results show that economy is becoming more and more a global issue that affects the international investments availability. In this global atmosphere, we can see that Products and services could be accessed from anywhere in the world. As results, E-commerce becomes a basic and strategic need for all organizations. This in turn helps in spreading products and services among the world (Akinyele and Olorunleke, 2010).

Moreover, ICT help in increasing productivity and customer's sharing with low cost. This integration requires new knowledge, information, ideas, and new strategies (khan, 2009).

2.1.2 Definition of E- banking Technology:

Many scholars' efforts were aiming at defining the concept of E-banking. For some researchers, regard E-banking as a form of online banking, others add extra banking services in order to meet the scope of become E-banking.

Daniel (1999) defined E-banking technology as banks introduction of services and information to its customers through Computers, Telephones, Internet, and Mobiles. By this definition, E-banking is considered as the means being used in establishing connection between banks and customers to perform different financial issues (Daniel, 1999).

While other studies such as CCANB (2002) considered E-banking as a form of online banking where banks use Internet and websites to introduce different banking services.

Yang (1997) gave E-banking another definition with a another dimension that include the "the use of a computer to retrieve and process banking data (statements, transaction details, etc.) and to initiate transactions (payments, transfers, requests for services, etc.) directly with a bank or other financial services provider remotely via a telecommunications network".

In his definition of E-banking Daniel (1999) concludes that E-banking includes systems that enable financial institutions, customers,

individuals or businesses to access their accounts, their transactions, or obtain information about their financial services through a public or private network. He adds that Customers can access E-banking services by using intelligent electronic devices such as personal computers (PCs), personal digital assistant (PDA), automated teller machine (ATM), or Touch Tone telephone.

2.1.3 E-banking Types:

From the previous definitions of E-banking, we can conclude that E-banking technology consists of several types. These types may be considered on the light of E-banking as a set of tools that customers use such as:

Internet Banking (Online Banking): Internet banking is the most common and prevalent type of E-banking. In this type, Customers can perform their financial transactions via Internet anytime and anywhere. Customers can access their accounts, transfer money, and buy products or services online (Sathye, 1999, Kalakota and Whinston 1996).

This form of E-banking can be seen in two popular methods: in the first form, customers access their accounts and perform their financial transactions by banks' websites. While in the other form, banks establish virtual branches available via Internet by which they introduce Internet banking services (CCANB, 2002). For example, Arab bank has many branches which are providing all traditional services for customers. In addition it deals with E-banking services like Internet banking. In contrast,

some banks do not have physical branches (customers cannot visit banks' branches); all customers' transactions should occur electronically.

TV-Base Banking: Karjaluoto (2001) explain another type of E-banking by the use of satellite or cables to deliver account information to customers TV's. In this type there could be a connection to Internet infrastructure (karjaluoto, 2001).

Mobile Banking: Mobile banking is considered to be the latest E-banking services technology by which customers access their accounts and perform their financial transactions using Mobile Devices. Customers can communicate with banks' servers through Short message service (SMS), Internet connections (WAP), or high speed 3rd generation mobile connection which is also Internet based (Bank Negara Malaysia, 2011).

PC Banking: in this type of E-banking, Customers use their personal computers to connect with their bank's accounts. PC banking requires special software to be installed on the customer's computer which interacts with bank's servers. This type of E-banking differs from Internet banking in that customers need special software to access their accounts. While in Internet banking, customers access their accounts without prerequisites (The Huntington National Bank, 2011).

Telephone Banking: This technology helps customers to access their accounts any time by calling specific number, and then enter their usernames and passwords to perform their financial transactions. Customers can listen to the answer machine and follow orders to access and perform their financial transactions (Andam, 2003).

Automated Teller Machine (ATM): ATM enables customers to withdraw, deposit, enquiry accounts, etc. without needing to interact with banks' employees. ATM is usually found near branches or in malls. ATM is connected with banks' servers by several networks like VPN, leased line, etc. Customers can access ATM anytime by having special cards and passwords (Olatokun et al., 2009).

Smart Cards: Smart cards are plastic cards contains microchips which enable data to be saved on them. Smart cards are used for several activates such as purchase through the Internet, purchase products and services from markets, withdraw or deposit cash money, etc. There are several types of smart cards like visa, visa electron, master card, union cards, etc. (IT bankers, 2011).

The following figure summaries E-banking tools that mentioned above:
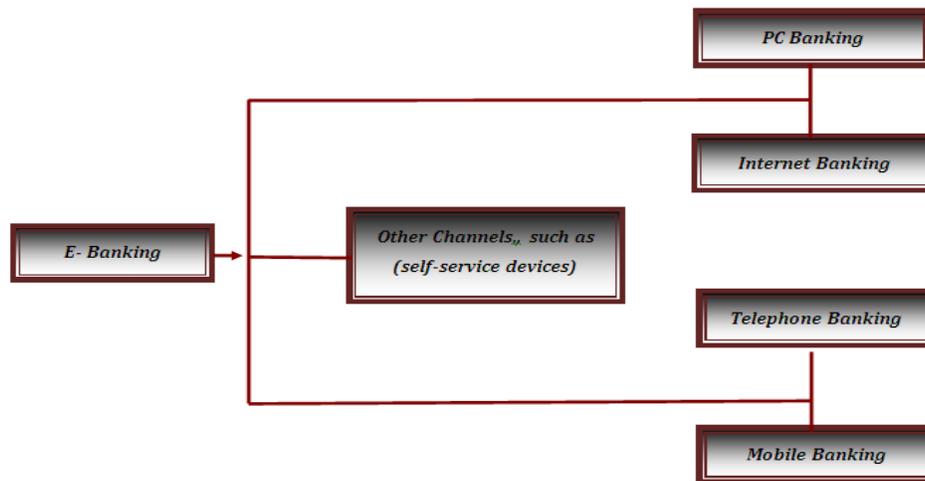
Figure 2-1: E-banking Types, Source: conducted by researcher

Each type of E-banking performs specific transactions, which varies from balance enquiries to transfer funds, withdraw, and deposit (FNB

Brochure, 2001). The following table shows the several types of E-banking and the functions of each type.

Table 2-1: Features and Function of E-banking Tools

Features	Telephone banking	Self Service terminal	ATMs	Internet banking
Withdrawals			✓	
Deposits			✓	
Balance enquires	✓	✓	✓	✓
Interim Statement	✓	✓		✓
Transfer funds	✓	✓	✓	✓
Cheque book orders	✓			✓
Change ATM card PIN		✓	✓	✓
Stop payment of cheques	✓	✓		✓
Rates	✓	✓		✓
Stop orders	✓			✓

Source: FNB Brochure, 2001

E-banking technology can be divided into other types according to the financial transactions that can be performed among E-banking services (Federal deposit insurance corporation, 1998). Federal deposit Insurance Corporation (1998) divided E-banking into three parts:

Informational: E-banking can be considered as Information Services like advertisements. This type is used to announce for banks' services without any access between banks' customers and banks' servers. Therefore, the risk is relatively low. Informational type is considered as marketing oriented. This type is the basic level of E-banking.

Communicative: This type of E-banking allows some interactions between bank's systems and customers. Therefore, the risk in using it is higher than

informational systems. These interactions are limited like send Emails, inquiry balances, apply for loans, or update files. For example, customers can apply for loans by using online applications.

Transactional: This type allows customers to perform financial transactions. Path exists between customers and banks' network. This type has the highest risk, so it must have controls and high security issues to protect E-banking servers from hackers and viruses.

2.1.4 Benefits of E-banking:

E-banking Technology is intended to develop banking sector, as well as to meet customers' needs. E-banking technology has a lot of benefits related to society, banks, and customers. Therefore, E-banking has spread rapidly in all over the world (Mattila et al., 2003).

E-banking technology is appropriate solution for quality problems in banking services. Service Quality is defined as the difference between customers' needs and expectations about specific service and the actual features of this service that was introduced to customers (Akinyele and Olorunleke, 2010).

E-banking has benefits for both banks and customers:

Benefits for Banks:

Banks are adopting E-banking technology to achieve strategic goals like competitive advantage, increasing their market share, get super position in the market, and increase their profits. Furthermore, banks receive daily benefits of E-banking technology such as saving time; banks'

employees do not waste their time in performing financial transactions for customers (Jayawardhena and Foley, 2000).

Using E-banking technology can save the cost of resources (checks, papers, ink, human recourses, etc.) which are needed for traditional banking services. Furthermore, E-banking technology enables people from all over the world to access banks' services, so banks can have new customers (Green, 2005).

E-banking technology improves the image and reputation of banks, because E-banking has excellent services. By E-banking technology, banks can satisfy all customers and meet their needs in rapid and convenient manner (Aladwani, 2001).

Banks can control their overheads and expenses. Repetitive tasks become fully automated. E-banking empower banking sector to enlarge their customers base, and then increase their volume of credit creation as well as achieve better economic conditions (khan, 2009).

Benefits for Customers:

Customers save their time when they use E-banking services, because they do not need to visit banks' branches. In addition, customers can perform their transactions at any time outside official working hours. Customers can access their accounts and perform their financial transactions from anywhere. Customers can access several services concurrently, as well as they can access services which are not found in the banks' branches (Baraghani, 2007).

Customers do not need to carry cash money which may be lost. All services can be done virtually; nothing appears on the ground. In addition, Customers will get quick response to their complaints; their complaints reach directly to bankers via E-banking channels without passing through intermediate processes. Therefore, customers will be satisfied and meet their requirements (Brogdon, 1999).

2.1.5 E-banking Challenges:

E-banking technology faces challenges and difficulties influence the adoption of this technology.

Yang et al (2007) explain the most important challenges that impeding the spread of E-banking technology among banks' customers:

➢ Security concern is the most important challenge which influences E-banking technology. Customers have concerns about accessing their accounts online or paying an invoice through the Internet. Banks should protect their channels and servers from unauthorized access, as well as they should create accurate procedures to be sure of customers' identity.

➢ E-banking requires new technological tools like computers, software, cards, etc.; these technological tools may cost customers a lot. Customers are not interested in paying a lot of money to access E-banking technology. In addition, customers have concerns about E-banking fees which may be more than traditional services fees.

➢ E-banking technology has difficulties with delivery speed and delivery reliability which cause many interruptions. For example, if

the Internet connection has slow speed then customers cannot perform financial transactions correctly and rapidly (interruptions will occur) and then E-banking systems will become impractical.

➢ In general, customers are not familiar with technological solutions; it is not easy to accept new technologies without having success stories about them. Furthermore, people resist any change in their lifestyles.

2.2 Information and Communication Technology in Banking Sector:

Information and Communication Technology (ICT) canceled the constraints of time and distances. Communication networks made the world a small village. The Financial sector is not an exception; ICT encourage banks to evaluate their technology and assess their electronic commerce and E- banking strategies (Andam, 2003).

Banking sector in the 21st century operates in a complex and competitive environment characterized by changing conditions and highly unpredictable economic climate. ICT is the core of global change. (Jesu´ S Marti´Nez-Fri´ Centre for Astrobiology, 2003)

Information Systems have critical role in contemporary organizations. Therefore, financial services should be modified to remain viable in time of changes.

The most significant trend in banks is grasping the importance of technology, as well as integrating technology with their strategic plans. Banks apply ICT to their operations to survive and prosper in the new world. Therefore, banks should re-examine their services and their delivery

systems in order to properly position them within ICT (Laudon and Laudon, 1991).

Information and Communication Technology must have strong infrastructure to serve banking sector. ICT infrastructure should have these primary issues:

- **Appropriate Networks**

To achieve the goals of technology usage; it is important to find a strong communication network that integrates all areas with each others, and empower all people to access the network easily and quickly (World Bank, D.C, 2001).

- **Security**

ICT should have security systems to protect people from any transactions loss. TCT should be protected from hackers, viruses, and wastage by using specific techniques like encryption, Authentication, Integrity (it is impossible to change transactions during transmission process), repudiation (transactions cannot be rejected during transmission process), and confidentially (transactions cannot be accessed by unauthorized people) (Chellappa and Pavlou, 2002).

- **Privacy**

Customers' information should be protected from unauthorized people. Banks should get customers' permission to access their data. In this way, customers will trust ICT and E-banking technology (Federal Reserve Bank of New York, 1999).

2.2.1 Palestinian's ICT Background:

Palestine uses ICT to improve its infrastructure in several ways. Palestinian government is working to support ICT sector by finance several projects in this field. As well as, it is working to develop laws to protect and explain the methodology of ICT sector. Currently, Palestinian government is working on E-government project which aims to connect all ministries with each other, and facilitate their work (Ministry of Telecom & Information Technology, 2011).

Palestine has a large Palestine Telecommunications Company (Paltel) which operates all communications and electronic movements in Palestine. Paltel works in many fields like fixed telephones, leased lines, and VPNs. Recently, Paltel provides Internet services with high speeds by using fiber optics technology (Paltel Corporation, 2011).

Palestine has seen an increase in Information Technology companies which introduce software and hardware solutions for Palestinian society. In addition, there are several Information Technology companies which are working with global IT companies like Dell, HP, and Cisco (outsourcing companies) (Ministry of Telecom & Information Technology, 2011, ASAL Technologies, 2011).

Several companies in Palestine offer broadband solutions like ADSL, Voice over IP (VOIP), Internet via microwave, etc. (Ministry of Telecom & Information Technology,2011).

Palestine has seen rapid improvements in mobile technology. Palestine has two mobile operators (Jawwal and Wataneya), which

introduce advanced solutions and services for Palestinian people like local and international calling, SMS, MMS, Internet via mobile devices, and other services which introduce benefits for people. The number of Palestinians who are using mobile technology ranges from 2 to 2.5 million users (Jawwal, 2011, Wataniya Mobile, 2011).

In line with technological development in Palestine, the usage of technology (computers, Internet, and mobiles) is rising. Palestinian Central Bureau of Statistics publications show that the use of mobiles, computers and Internet is increasing every year more than previous years (Palestinian Central Bureau of Statistics, 2010).

Statistics show that:

- Percentage of families where one of its members owns mobile phone was 43.7% in 2000. In 2009, the percentage became 92.4%

- Percentage of families which have personal computers was 18% in 2000. In 2009 became 49.2%

- Percentage of families which have Internet service was 1.9% in 2000. In 2009 became 28.5%

It is obvious that Palestine started working on ICT sector, but ICT infrastructure needs a lot of work and developments. Besides, ICT sector need more fund to grow and achieve its goals (Ministry of Telecom & Information Technology, 2011).

In addition, ICT sector in Palestine is suffering from harassment by the Israeli Occupation, which impedes the growth of Information Technology (Ministry of Telecom & Information Technology, 2011).

2.3 Banking Sector in Palestine:

Banking sector in Palestine is managed by Palestinian Monetary Authority (PMA) which is "The emerging Central Bank of Palestine. Its overall purpose is to ensure the stability and effectiveness of the Palestinian financial system" (PMA, 2011).

"PMA Promote sustained economic and financial growth of the Palestinian economy through the following" (PMA, 2011):

- "Effective and transparent regulation and supervision of Banks operating in Palestinian territory".

- "Development and deployment of Monetary Policy designed to achieve price stability".

- "Overseeing the implementation and operation of modern, efficient payment systems".

"PMA was initially established in 1994 by presidential decree as an independent institution and later by an act of the Palestine Legislative Council PMA Law Number (2) of 1997 which outlined the full authority and autonomy of the PMA" (PMA, 2011).

"Currently, there are eighteen banks operating in Palestine through a network of more than two hundred branches and representative offices. Of this total, there are eight local banks that include two Islamic banks and ten

foreign banks that comprise of eight Jordanian banks, one Egyptian bank in addition to one branch for the HSBC. Two of the banks operating in Palestine are Islamic and the remaining are commercial non-Islamic banks" (PMA, 2011). Table 2-2(a), page 31 and Table 2-2(b), page 32 show all details about Palestinian banks.

The Palestinian banking sector is well-regulated and operates in an efficient and effective manner. "Banks are governed by and fully-adhered to the Banking Law No. (2) of 2002 and its explanatory instructions. In addition, banks comply with the best international banking practices, particularly, the Core Principles of Banking Supervision and its methodology, principles of good corporate governance, Basel I accord, and work is underway to apply the revised international capital framework or Basel II accord" (PMA, 2011).

Banking sector in Palestine is developing and growing in line with the growing of Palestinian economy and ICT sector. Palestinian banks have specialized Information Systems in financial transactions and accounting entries. The use of technological innovations is prerequisite for any Palestinian bank. On the other hand, Palestinian banks are using several E-banking services (IT bankers, 2011) as we will explain in the following section.

2.3.1 E-banking Technology in Palestine:

It is obvious that most Palestinian banks are suing E-banking services (IT bankers, 2011). E-banking services in Palestinian banks are divided into five types (IT bankers, 2011):

1. **Websites:** All Palestinian banks are using websites to introduce themselves and their services (IT bankers, 2011).

2. **ATM:** Most of Palestinian banks have this technology (IT bankers, 2011).

3. **Phone Banking:** This technology exists in Palestine, where Palestinian customers can perform their financial transactions among phone banking (IT bankers, 2011).

4. **Credit Cards:** Several banks in Palestine are using credit cards. Customers can get visa electron, master cards, etc. to perform their activates without needing cash money (IT bankers, 2011).

5. **Mobile Banking:** Palestinian customers can use their mobiles to access their accounts via Internet and deal with SMS banking to enquiry for balances (IT bankers, 2011).

6. **Internet Banking:** Some Palestinian banks are using this service. Internet banking still in its beginnings; Internet banking in Palestine just allow customers to perform their transactions inside their bank i.e. customers can not transfer money to accounts related to other banks. This situation is found in all Palestinian banks except Arab Bank which has full Internet banking service (IT bankers, 2011).

The usage of E-banking technology in Palestine is low (IT Bankers, 2011) around 23% of customers use primary E-banking services (IT Bankers, 2011). Meanwhile, the actual use of this technology is less than 23% (IT Bankers, 2011).

Al_Markaz for Development and Marketing Consultancies (2009) studied market demand assessment for E-banking services in Palestine. The study indicates that "current business model to deliver E-banking services in Palestine rests on "in-house" solutions provided individually mainly by large size banks. There is no national system linking all Palestinian banks within a unified network of inter-banking agreements, which will expedite the development of E-channels to include ATMs, commercial points of sale and utilities payments as such ultimately efficient and optimal E-banking services to the end user" (Al_Markaz for Development and Marketing Consultancies, 2009).

The following tables summarize E-banking services in Palestine.

Table 2-2(a): E-banking Services in Palestine

#	Bank' Name	E-banking Services							Percentage of using primary services	Percentage of using secondary services	Number of Bank's Branches
		Primary E-banking Services				Secondary E-banking Services					
		Mobile Banking	Internet Banking	Phone Banking	Credit Cards	ATM	SMS Banking	Website			
1.	**Bank of Palestine P.L.C**	NO	YES	YES	YES	YES	YES	YES	25-30 %	70-80%	40
2.	**Bank of Jordan**	NO	YES	NO	YES	YES	YES	YES	30%	30%	13
3.	**Arab Bank**	YES (Internet based)	YES	YES	YES	YES	YES	YES	25 -40%	75-80%	24
4.	**Cairo Amman Bank**	NO	YES	NO	YES	YES	YES	YES	10%	20%	19
5.	**Palestine Islamic Bank**	NO	YES	YES	NO	YES	YES	YES	15%	50%	15
6.	**Al Quads Bank**	NO	YES	YES	YES	YES	YES	YES	30%	75%	17
7.	**The Housing Bank for Trade & Finance**	NO	YES	NO	YES	YES	YES	YES	25%	25%	12
8.	**Palestine Investment Bank**	NO	NO	NO	NO	YES	NO	YES	----	40%	11
9.	**Arab Islamic Bank**	NO	NO	NO	NO	YES	YES	YES	---	40%	9

Source: (IT bankers, 2011), (websites of Palestinian's banks, 2011)

Table 2-2(b): E-banking Services in Palestine

#	Bank' Name	E-banking Services							Percentage of using primary services	Percentage of using secondary services	Number of Bank's Branches
		Primary E-banking Services				Secondary E-banking Services					
		Mobile Banking	Internet Banking	Phone Banking	Credit Cards	ATM	SMS Banking	Website			
10.	Palestine Commercial Bank	NO	NO	NO	YES	YES	NO	YES	5%	30%	6
11.	Al Rafah Microfinance Bank	NO	YES	NO	NO	YES	YES	YES	15%	15%	5
12.	Egyptian Arab Land Bank	NO	YES	NO	YES	YES	YES	YES	15%	15%	6
13.	Jordan Ahli Bank	NO	YES	NO	YES	YES	NO	YES	40%	40%	5
14.	Jordan Commercial Bank	NO	NO	NO	YES	NO	YES	NO	5%	30%	3
15.	Jordan Kuwait Bank	NO	YES	NO	YES	YES	NO	YES	70%	70%	2
16.	HSBC Bank Middle East Limited	NO	NO	NO	YES	YES	NO	NO	70%	70%	1
17.	Union Bank	NO	NO	NO	NO	YES	NO	NO	---	15%	1
18.	Arab Palestinian Investment Bank	THIS BANK JUST FOR FINANCE PROJECTS						YES	---	---	1

Source: (IT bankers, 2011), (websites of Palestinian's banks, 2011)

E-banking in Palestine is developing in line with ICT development. E-banking needs more effort to introduce full accessibility on Internet banking, as well as to introduce mobile banking technology (IT bankers, 2011).

E-banking needs more technological issues like Security systems to reduce the perceived risk (IT bankers, 2011).

The usage of E-banking technology in Palestine is low; around 23% of Palestinian customers use the primary E-banking services (IT bankers, 2011).

2.4 Factors Influencing E-banking Adoption:

There are many International studies discussed E-banking technology, information and communication technology (ICT), and the factors that influence the adoption of E-banking. Those studies provide theoretical and empirical background about E-banking technology. Therefore, it is very important to explore those studies to understand, analyze, and highlight the factors that influence E-banking technology. In addition, those studies give a good chance to compare our findings with others.

Four main factors are influencing the acceptance and implementation of E-banking technology. These factors are customers' acceptance, organizational features, technological abilities, and environmental determinants (Sohail, and Shanmugham, 2003, Calisir and Gumussoy, 2008).

Customers are the most important factor for applying new service or product. Without customers' satisfaction, organizations cannot achieve any profits. Customer satisfaction is important to spread new technologies and innovations. Therefore, organizations should meet customers' needs and expectations (Akinyele and Olorunleke, 2010).

E-banking technology depend on transferring financial transactions via Internet and others techniques. Customers will think deeply to use it, because they will deal with new technology, with communication channels, and with their money. This feature distinguishes E-banking services from other E-commerce services; No one accept any risk toward his\her financial issues. From this point, we should study carefully and deeply how customers think toward E-banking, as well as, we should know the factors that influence customers to adopt E-banking technology (Yiu et al., 2007)

New technology needs special resources to be adopted, especially E-banking which should be implemented with zero errors. From this point, there are organizational factors influencing E-banking technology (Shah and Siddiqui, 2006).

Technological aspects are the significant factors that influence E-banking technology by customers and banks. E-banking needs specific technological solutions like software, hardware, networks, security …etc. Therefore, technology "plays" the main role in E-banking adoption (Aladwani, 2001).

Social systems, cultural values, norms and habits, beliefs, economic scale, legal regulations, political and governmental issues are influencing

the adoption of new services like E-banking (Haghighi et al., 2010). For example, what accepted in Palestine not always accepted in Europe and vice versa. It is important to study the environment issues that mentioned above and know their influence on E-banking technology.

2.4.1 Factors Influencing Customers to Adopt E-banking Technology:

Several studies like Khalfan et al. (2006), and Kuisma et al. (2007) focused on E-banking adoption by customers, and explored many factors that influence E-banking adoption by customers.

Security was the most significant factor influences customers' decisions to adopt E-banking technology (Tan and Teo, 2000)

Customers influence by information and communication security to ensure reliability of their transactions. Information and communication security includes authentication, encryption on circuits and servers, firewalls, call back modems, etc. These security techniques should be implemented to prevent any access on banks' networks. Customers also influence by legal support issues that save their rights when unexpected events happen by hackers or viruses (Khan, 2009).

Perceived ease of use is another important factor influences customer's adoption. Davis (1989) defined perceived ease of use as "the degree to which a person believes that using a particular system would be free from effort". Customers prefer simplicity in E-banking systems. Customers do not like complicated systems because they fear from mistakes (Calisir and Gumussoy, 2008).

Perceived usefulness is defined as "the degree to which a user believes that using the system will enhance his or her performance" (Dillon and Morris, 1996). Perceived benefits and perceived usefulness influence customers to adopt E-banking technology (Yiu et al., 2007). Perceived usefulness and perceived ease of use are the components of Technology Acceptance Model, which will be discussed later in this section.

Attitude, subjective norms and perceived behavioral control are the components of theory of planned behavior. These components influence customers to adopt E-banking technology. Attitude is Positive or negative evaluation on specific thing or person. Attitude is influenced by beliefs about the consequences. Customers should feel E-banking benefits to formulate positive attitude toward E-banking Technology (Liao et al., 1999).

Subjective norms defined as "the person's perception that most people who are important to him think he should or should not perform the behavior in question". Customers are influenced by opinions of people to adopt or not the new technology (Laukkanen et al., 2009).

Perceived behavioral control "is determined by the availability of skills, resources, and opportunities, as well as the perceived importance of those skills, resources, and opportunities to achieve outcomes". The skills and abilities to use new technology influence customers' adoption. Experience of using Internet and Computer will qualify customers to use E-banking in an effective manner. Educated customers have better skills to deal with E-banking technology. From this point, customers fear that the

use of E-banking will increase their requirements and responsibilities (Calisir and Gumussoy, 2008).

Reluctance and resistance to change also influence customers to adopt E-banking technology (Khalfan et al., 2006).

Trust in banks is an important factor influencing E-banking adoption. Trust not only connected with security issues, but also related to banks' image, banks' reputation, banks' employees, and all banks' services (Aladwani, 2001).

Accessibility and availability of E-banking services are important factors influencing the adoption of E-banking. The competitive advantage of E-banking services over traditional services that E-banking empowers customers to perform their transactions anytime from anywhere in efficient and effective manner (Tan and Teo, 2000).

Cost and financial expenses of E-banking services influence E-banking adoption. Banks should introduce incentives and promotions to encourage people to use E-banking services. In addition, the cost of computers and Internet connection influence customers to adopt E-banking technology (Yang et al., 2007).

Customer's adoption of Internet, computers and other techniques are influenced by the standard of living. Therefore, income level and value of money influence E-banking adoption directly and/ or indirectly (Laukkanen and Sinkkonen, 2009).

Privacy of data and connections influences customers to adopt E-banking technology. If E-banking services pass through intermediate stages, customer will not trust this technology. No one should access customers' accounts except the authorized people (Khan, 2009).

Customers would realize the benefits of E-banking and get positive attitude toward E-banking technology through good communication channels, good customer service, good marketing and advertising strategies. Information is the basic process to achieve customers' attention (Sohail and Shanmugham, 2003).

2.4.2 Factors Influencing Banks to Adopt E-banking Technology:

Banks' decision to adopt E-banking technology is the first step toward the use of E-banking technology. Many factors are influencing bankers to make this important decision. We will highlight the most important factors that influence banks to adopt E-banking technology in the following discussion.

Image of organization is an important factor influences banks to adopt new technology. Good image creates a mutual trust between customers and banks. Therefore, customers will accept new solutions from their banks. It is very important for banks to build Brand Name and be superior in their services, treatments, technologies, and workforces to adopt critical technology like E-banking. Reputation is competitive advantage for any bank to achieve customers' loyalty (Kuisma et al., 2007).

Bank's Strategies influence E-banking technology. Appropriate strategy should be formulated by top level management to adopt and

implement E-banking services. Top management should motivate all departments to work toward achieving this technology, and should encourage workforces to introduce perfect services for customers (Toufaily and Daghfous, 2009).

Relationships and communication channels among employees is an important issue for banks to adopt E-banking technology. E-banking technology needs coordination from all divisions in the bank. Therefore, banks need strong relationships among their employees to spread their strategies and goals (Khalfan et al., 2006).

Skills, abilities, and well trained employees are required to adopt E-banking technology. Banks are influenced by the availability of information, communication channels, and Internet specialists. Banks need specialists in security, reliability, privacy, encryption, etc. In addition, marketing specialists are needed to influence people to adopt E-banking technology (Haghighi, et al., 2010).

Budget availability is needed to cover all expenses of E-banking technology. Information Systems, security, specialists, Internet, websites, etc. need appropriate budget. Returns on investment and financial resources influence the adoption of E-banking (Toufaily and Daghfous, 2009).

Banks are competing each others to increase their market shares by introducing new innovations for customers. E-banking services create new markets; E-banking enables customers to access their accounts and performing their financial transactions from all over the world (Tan and Teo, 2000).

Forward integration with customers influence and encourage banks to implement E-banking technology. Relationship between banks and customers is important to get benefits from E-banking services. Good pricing, quality, and good marketing policy will achieve customers' loyalty (Khan, 2009).

2.4.3 Technological Factors Influencing E-banking Adoption:

Customers and banks are influenced by technological factors like security, privacy, reliability and Internet speed to adopt E-banking technology (Khalfan et al., 2006).

Network's security is most important factor influences customers. In the time of globalization, there are many risks which can destroy all E-banking technology. Therefore, advanced infrastructure should be implemented by telecommunication ministry, communication and Internet companies, and banks to protect all financial transactions (Yiu et al., 2007).

E-banking adoption in Arab world is influenced by Arabic Language. Arabic language makes E-banking systems easy to use (Aladwani, 2001).

Technical / technological equipments should be environmental friendly. These equipments should not harm customers and environment to be accepted by society.

2.4.4 Environmental Factors Influencing E-banking Adoption:

Norms, habits, culture, and social systems influence banks and customers to adopt E-banking technology. If cultural values agree with

traditional banking services and not trust communication channels, then E-banking technology will not be adopted in the society (Laukkanen et al., 2009).

Good economic situation means good standard of living and good investments. In this case, banks have good budget to adopt new technology like E-banking (Al Nahian et al., 2009).

Legal factors are important to support customers and banks to adopt E-banking Technology. Without governmental support and protection of telecommunication infrastructure, banks and customers cannot adopt advanced technology like E-banking. Government should apply regulations to protect banks and customers form unexpected events (Lippert and Govindarajulu, 2006).

From previous discussion, the main four factors (customers' acceptance, organizational features, technological abilities, and environmental determinants) are connected to each others. Each factor influence and be influenced from other factors. E-banking should be studied from all its aspects to achieve wide adoption (Haghighi, et al., 2010).

2.5 User Acceptance Theories and Models:

To achieve research purpose, it is important to discuss user acceptance theories and models.

Acceptance terminology is defined as "the demonstrable willingness within a user group to employ Information Technology for the tasks it is designed to support" (Dillon and Morris, 1996).

Most theories and models used social psychology frameworks to study knowledge, beliefs, thoughts, perceptions and behaviors of people. Furthermore, User acceptance models and theories studied technology features and their effect on customers' behavior (Baraghani (2007).

There are several user acceptance theories and models such as: Innovation Diffusion Theory, Theory of Reasoned Action, Technology Acceptance Model, and Theory of Planned behavior.

2.5.1 Innovation Diffusion Theory:

It is a basic theory in technology adoption process; it deals with user acceptance and organization acceptance for new technology. This theory moves from the innovation stage to the actual use by customers and organizations (Green, 2005).

According to Rogers (1983, 1995), there are five categories that influence the spread of innovations. These five categories are:

➢ Relative Advantage: New innovations should introduce benefits to all people.

➢ Compatibility: The consistency of innovation with norms, habits and social systems are form the compatibility of innovations.

➢ Complexity influences the spread of any new technology. Technology should be easy to use as much as possible.

➢ Trialability: People always need to try new innovations before make their decisions.

➢ Absorbability: The output and results from innovation should be clear, obvious, and can be noticed from all people without ambiguity.

All these categories should complement each other to achieve high diffusion for new innovations.

2.5.2 Theory of Reasoned Action:

Theory of Reasoned Action (TRA) is the basic theory for user acceptance models, other theories are derived from it. TRA adopt generalized framework for technology acceptance. Intention influence the human's behavior to adopt or reject new innovations. Intention influenced by attitude and subjective norms according to this theory. Subjective norms is influenced by beliefs and motivation, whereas attitude is influenced by beliefs and evaluations (Fishbein and Ajzen, 1975).

2.5.3 Technology Acceptance Model:

Technology Acceptance Model (TAM) is derived from Theory of Reasoned Action. TAM is created to predict user acceptance for technologies. According to TAM, attitude toward new technology is influenced directly by two main factors, which are perceived usefulness (PU) and perceived ease of use (PEOU) (Afari-Kumah and Achampong, 2010).

According to Davis et al. (1989) perceived usefulness will directly influence the behavioral intention. New technology should increase the performance of people to get positive intention use it. In addition, perceived usefulness is influenced by perceived ease of use. Whenever the technology is free of effort, people will realize its usefulness.

The following figure explains Technology Acceptance Model.
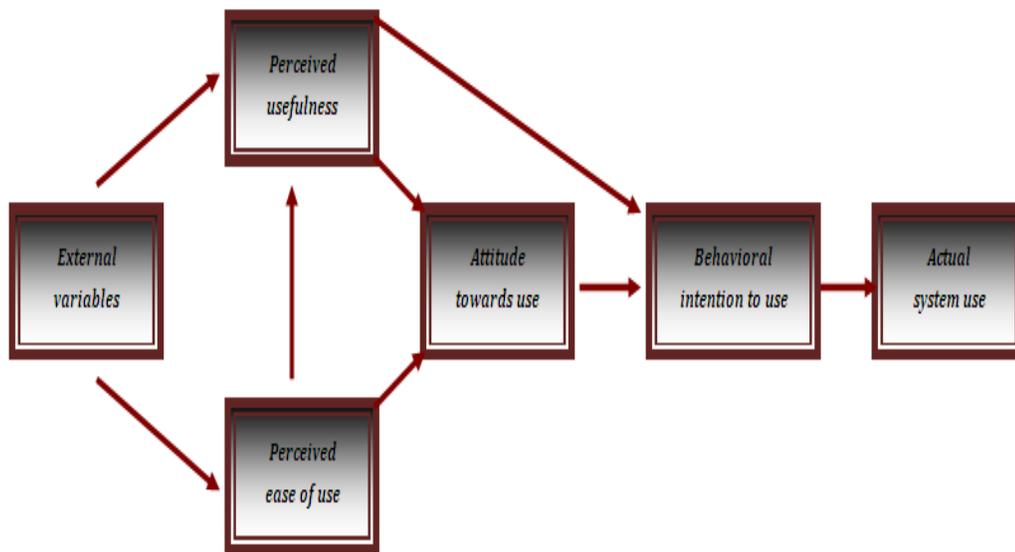
Figure 2-2 : Technology Acceptance Model, source : (Alireza et al. (2010)

Researchers extended technology acceptance model to understand how TAM achieves user acceptance for new technology. Extended Technology Acceptance Model was developed and known as TAM2. TAM2 has new variables, which are Subjective Norms, Voluntaries, Image, Job Relevant, Output Quality, and Result Demonstrability (Venkatesh and Davis, 2000).

Extended Tam explains that subjective norms influence perceived usefulness and image. In addition, subjective norms are influenced by

experience and voluntaries. Perceived usefulness is influenced by image, job relevant, output quality, and result demonstrability. According to TAM2, subjective norms are directly influence the intention to use new technology (Green, 2005)

2.5.4 Theory of Planned Behavior:

Theory of Planned Behavior (TPB) is also derived from TAR. TPB added new factor on TAR model which is perceived behavioral control. According to theory of planned behavior, attitude, subjective norms and perceived behavioral control are directly influencing the intention to use new technology (Ajzen, 1991).

The following diagram explains TPB and its extensions.
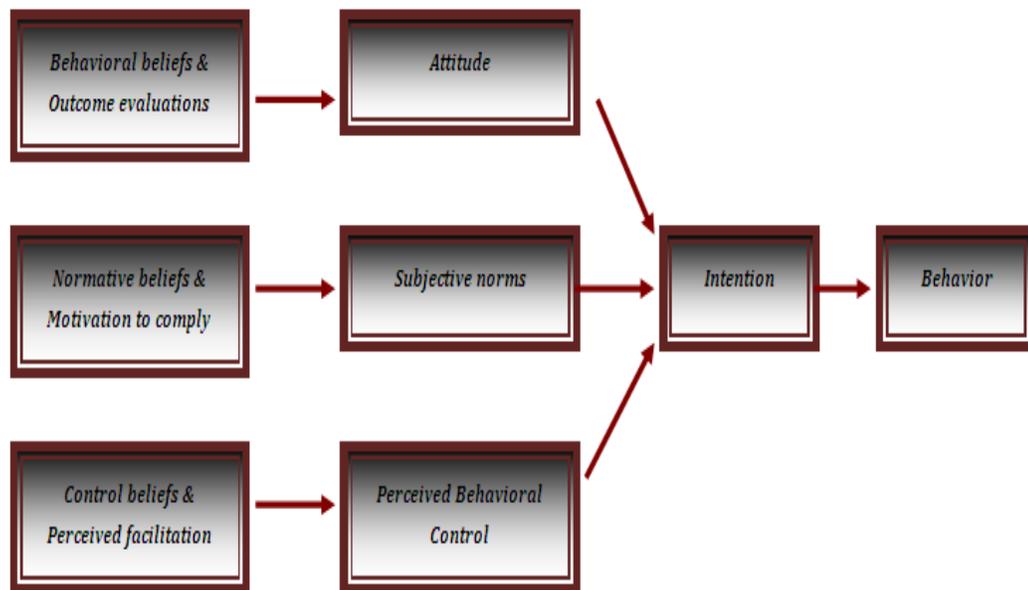
Figure 2-3: Theory of Planned Behavior, source: (Lee, 2009)

Taylor and Todd (1995) created Decomposed TPB to explain technology acceptance by people. Attitude is influenced by perceived

usefulness, perceived ease of use and compatibility. Peers and superiors influence subjective norms. Self-efficiency, technology facilitating conditions, and resources facilitating conditions influence perceived behavioral control (Taylor and Todd, 1995).

2.5.5 Technology – Organization – Environment Framework:

Tornatzky and Fleischer defined TOE framework. TOE helps to determine the factors that influence the adoption of new technology by organizations. According to TOE, technological innovations are influenced by three categories; technological factors, organizational factors, and environmental factors (Tornatzky and Fleischer, 1990).

Technological factors involve internal and external issues. Organizations should create appropriate software, hardware, firewalls, security systems, etc. to implement and use new technologies correctly. On the other hand, technological solutions need appropriate infrastructure to perform well. External technological infrastructure needs advanced communication channels, high-speed Internet, security systems, advanced technological equipments, etc. (Lippert and Govindarajulu, 2006).

Bank's resources, size of the bank, bank scope, technological knowledge, availability of experts, perceived benefits, formalization, interconnectedness, top management support, motivation, complexity of the managerial structure, etc. are influencing banks to adopt E-banking technology (Rui, 2007).

Environment influences organizations to adopt, apply and implement new services and technologies. Technological solutions should agree with

society, social systems, cultural values, norms, and habits. Economic scale, competitors, and government also influence organizations to adopt new technologies (Haghighi, et al., 2010).

The following figure explains TOE framework.
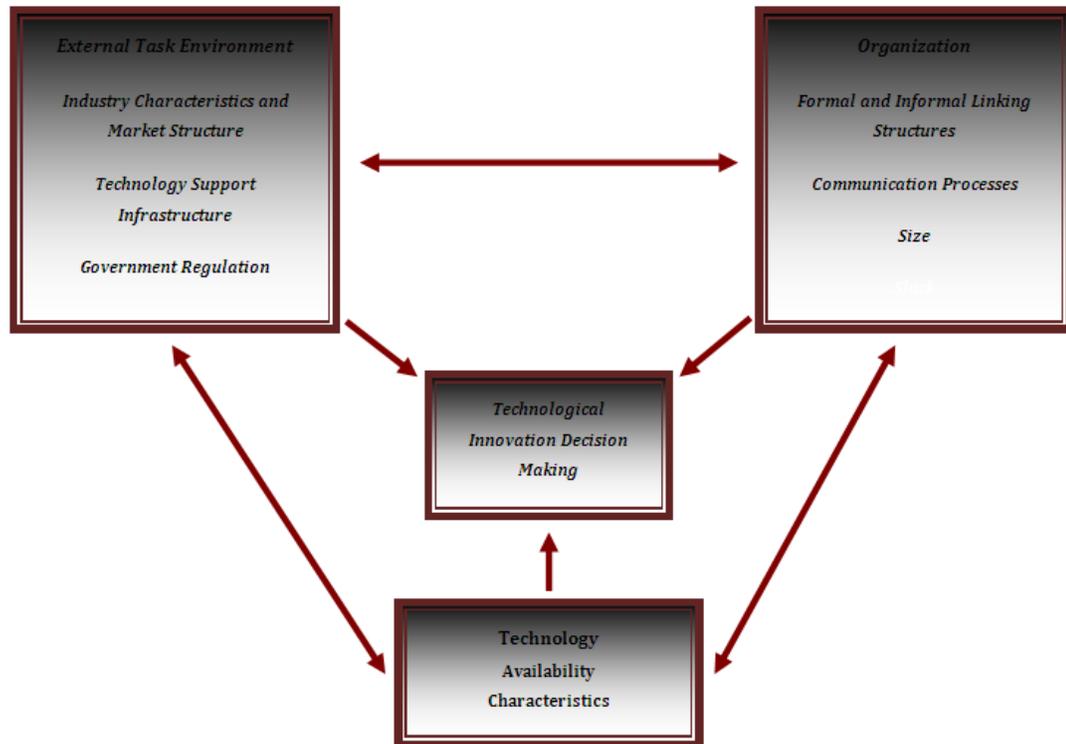
Figure 2-4: TOE Framework, source: Tornatzky and Fleischer, 1990

The following tables explore specific International Studies to summarize the factors that influence E-banking adoption, as well as to explore the models and theories which are used in these studies.

Table 2-3(a): International Studies of Customer Adoption of E-banking

Study	Study Title	Model	Significant Factors
Haghighi, et al (2010)	The impact of 3D e-readiness on e-anking development in Iran: A fuzzy AHP Analysis	fuzzy analytic ierarchical process'(fuzzy AHP)	Industry E-readiness, Organizational eadiness Macro environmental E-readiness Internet Penetration Internet Access Network Security Quality Cultural Values
Al Nahian et al. (2009)	The Adoption of E-banking in eveloping Countries: A Theoretical Model for SMEYs	TOE, TAM Institutional theory, and Institutional intervention theory	Perceived benefits. Perceived credibility ICT industries readiness, regularity support Financial institutions readiness ICT Ministry ISP services providers
Lee (2009)	Factors influencing the adoption of Internet banking: An integration of TAM and TPB with perceived risk and perceived benefit	TAM & TPB	Security /privacy Financial risks Perceived benefit Attitude Perceived usefulness Perceived ease of use Subjective norms Perceived behavior control Performance risk Social risk Time risk
Kuisma et al. (2009)	Communication strategies to overcome functional and psychological resistance to Internet banking	Theory of innovation resistance	Perceived risk Performance Ability property Social ostracism Conflict with traditions Negative image Information and guidance
Panache et al. (2008)	Investigating into the factors that influence the adoption of Internet banking in Mauritius		Ease of use Reluctance to change Trust and Relationship Accessibility, Convenience, and Security Cost

Source: International Journals, Baraghani (2007)

Table 2-3(b): International Studies of Customer Adoption of E-banking

Study	Study Title	Model	Significant Factors
Khan, (2007)	Adoption Issues of Internet banking in Pakistani 's Firms		Lack awareness of service and benefits Lack of experience Availability of infrastructure Technology readiness Security Reliability transactions Perceived risks Slow response time Privacy customer protection Legal support and issues
Fink and Jaruwachira-Thanakul (2005)	Internet banking adoption strategies for a developing countries: the case of Thailand	Decomposed TPB	Perceived usefulness Risk and Privacy Personal Preference External Environment
Pikkarainen et al. (2004)	Customer Acceptance of Online Banking: an extension of technology acceptance model	TAM and Focus groups	Perceived Usefulness Ease of Use Perceived Enjoinment, Security and Privacy, Quality of Internet Connection
Suh and Han, (2002)	Effect of Trust on customer acceptance of Internet banking	TAM	Trust Perceived Usefulness Ease of Use Attitude Intention to use
Tan and Teo (2000)	Factors Influencing the Adoption of Internet Banking	TPB, diffusion of innovations theory, decomposed TPB	Design Speed Security information content Customer support service Ease of use
Liao et al. (1999)	The Adoption of virtual banking: an empirical study	TPB and Diffusion of Innovation	Attitude Ease of Use Compatibility Perceived Risks Subjective Norms perceived Behavioral Control Trialability

Source: International Journals, Baraghani (2007)

2.6 Perceived Risk:

Perceived risk is "commonly thought of as felt uncertainty regarding possible negative consequences of using a product or service" (Natarajan et al., 2010). Perceived risk is described as cognitive assessment rather than emotional responses. Perceived risk is formulated from thoughts, believes, perceptions, etc. (Featherman et al., 2003).

International related studies mentioned perceived risk as a major factor which influences E-banking adoption. Customers feel risk toward accessibility, reliability, response time, and speed of Internet connection. In addition, customers feel risk if E-banking services not convenient with their needs or no information about E-banking is available (Walker et al., 2002).

Lee (2009) defined five types of risk related to E-banking technology, which are performance risk, financial risk, social risk, time risk, and security risk. These five types are explained as the following:

- Performance Risk: Breakdown or disconnection of E-banking systems, which may happen when customers performing their financial transactions. These errors may cause unexpected losses.

- Financial Risk: Losing money while customers performing their financial transactions on E-banking systems, because of errors that may appear in these systems.

- Social Risk: E-banking technology may be rejected from society. Therefore, people fear to lose their status if they use E-banking technology.

- Time Risk: Spending a lot of time in performing, waiting, learning, and accessing E-banking systems.

- Security Risk: E-banking systems are not safe enough to send sensitive information via them.

According to Featherman (2003), there is a relationship between TAM and perceived risk. Perceived risk influences intention and perceived usefulness negatively. In addition, perceived ease of use influences perceived risk negatively**.**

According to Schmiege (2009), there is a relationship between TPB and perceived risk. Perceived risk influences intention and attitude negatively. Alireza (2010) argued that there is a relationship between TPB and perceived risk. Perceived risk influences attitude negatively.

2.7 Bank's Role and Technology Usage:

- **Bank's Role:**

Banks can influence their customers to adopt their services. Good image, reputation, relationships and communication channels, skills, abilities, well trained employees, and forward integration with customers, influence customers to adopt the banks' services like E-banking (Shah and Siddiqui, 2006).

Banks can spread E-banking services by adopting appropriate marketing and advertising strategies. In addition, banks can encourage their customers to use E-banking technology by introducing incentives and discounts for E-banking users (Khalfan et. al, 2006).

Good customer service can influence the attitude and intention of customers by explaining the usage mechanism of E-banking and the security mechanism that banks use to protect E-banking systems (Aladwani, 2001).

- **Technology Usage**

The use of computers and Internet increase the efficiency and the experience of people. In addition, people become well trained. Then, people will not face problems to adopt new technologies like E-banking (Ndubisi, 2004).

Researchers argued that there is a relationship between Computer and Internet usage and the adoption of E-banking technology. Several empirical studies prove that the Computer and Internet usage influences E-banking adoption like: Mattila et al. (2003), Tan and Teo (2000), and Wang et al. (2003).

According to Adesina et al. (2010), computer efficiency influences the perceived usefulness, perceived ease of use, attitude, and intention to use E-banking technology. Afari-Kumah and Achampong (2010) argued that prior experience of technology influences the perceived usefulness.

According to Liebermann and Stashevsky (2002) and Gebauer et al. (2011), Internet usage and computer knowledge influences the perceived risk which influences the actual use of E-banking technology. Alenezi et al. (2010) argued that Internet efficiency influences the intention to use E-banking technology.

It is obvious that the efficiency of technology usage influences the technology acceptance model (TAM), Theory of Planned behavior (TPB), and Perceived Risk.

2.8 Exploratory Interviews:

We made exploratory interviews with banks' specialists and some of banks' customers to explore the problem of E-banking adoption, assess the usage of E-banking in Palestine, and investigate the factors that influence E-banking adoption in Palestine. The questions of exploratory interviews are mentioned in section 4.1.1, page 82 and page 83.

2.8.1 Interviews with Palestinian IT Bankers:

Telephone based interviews with IT specialists who are currently working in Palestinian banks. The interviews focused on four main issues:

1. **E-banking services in the Palestinian banks:**

The interviewees highlighted that the most common forms of E-banking services available in Palestinian banks are Internet Banking, Phone Banking, Credit Cards, Short Message Service Banking (SMS Banking), Automated Teller Machine (ATM), and Websites (IT Bankers, 2011). They also mentioned that Mobile Banking still not implemented in Palestinian banks (IT Bankers, 2011).

IT specialists suggested dividing E-banking services into two categories – Primary E-banking Services and Secondary E-banking Services. Primary E-banking services represent the actual E-banking Technology which empowers customers to access their financial accounts

from anywhere and anytime. Primary E-banking services are mobile banking, Internet banking, phone banking, and credit cards (IT Bankers, 2011).

Around 65% of Palestinian banks provide Internet banking and credit cards services. And around 24% of Palestinian banks provide phone banking service (IT Bankers, 2011).

We divided Palestinian banks in two categories – major banks which have ten branches or more and have most Palestinian customers (PMA, 2011), and minor banks which have less than ten branches (PMA, 2011).

Around 88% of major banks provide Internet banking, around 50% of major banks provide phone banking service, and around 75% of major banks provide credit cards service (IT Bankers, 2011).

It is obvious that Palestinian banks are using primary E-banking services in high percentages. Phone banking service has the lowest usage compared to other primary services. This is due to the fact that many consider it to be an old technology. Banks are currently working on advanced technologies such as Internet banking and mobile banking (IT Bankers, 2011).

Based on the previous classification, Secondary E-banking Services include ATM, SMS banking, and websites. These services are secondary services because they are not available everywhere like ATM, and are used only for enquires about financial transactions e.g. SMS banking (IT Bankers, 2011).

Nearly, 94% of Palestinian banks are offering ATM service, and 65% offering SMS banking service, and 88% of Palestinian banks are offering website service (IT Bankers, 2011).

All major banks are offering ATM service, and 88% of major banks are offering SMS banking service, and around 100% of major banks are offering website service (IT Bankers, 2011).

It is obvious that Palestinian banks are using secondary E-banking services in high percentages (IT Bankers, 2011).

2. **Usage of E-banking Services by customers in Palestine:**

We got approximate percentages of customers who are using E-banking services in Palestine from IT specialists. IT specialists determine these approximate percentages depending on their daily access of bank's database and their experience in E-banking technology in Palestine (IT Bankers, 2011).

Average of Percentages of customers who have accounts on the primary E-banking services is around 23%. Meanwhile, the actual use of this technology is less than 23% (IT Bankers, 2011).

Average of Percentages of customers who have accounts on the secondary E-banking services is 42%. Meanwhile, the actual use of this technology is less than 42% (IT Bankers, 2011).

It is obvious that the usage of E-banking services by customers is relatively low (IT Bankers, 2011).

3. Factors influencing E-banking Adoption in Palestine:

We discussed specific factors that influence E-banking adoption (the factors that explained in the literature) with IT specialists. IT specialists considered these factors appropriate and influence E-banking technology (IT Bankers, 2011). In addition, they advised to study the effect of Computer and Internet usage on E-banking technology.

Furthermore, IT specialists advice to measure mobile usage because mobile is the main tool for mobile banking. As well as, high usage of mobile may motivate banks to implement mobile banking; in this case, people are familiar with the main tool of mobile banking and can use it efficiently (IT Bankers, 2011).

4. IT Specialists viewpoints:

Palestinian banks are adopted most of E-banking services (IT Bankers, 2011). In addition they interest in developing these services (IT Bankers, 2011).

According to IT specialists, it is important to study E-banking adoption by customers. Most Palestinian banks are using or intent to use E-banking services (IT Bankers, 2011). In contrast, the usage of E-banking by customers is low (IT Bankers, 2011). Therefore, banks need to know the factors that influence customers to adopt E-banking technology in Palestine (IT Bankers, 2011).

Phone interviews with IT specialists in Palestinian banks highlighted three important results:

1.   Palestinian banks are adopting E-banking technology.

2.   Percentage of E-banking usage by customers relatively low.

3.   IT specialists recommended studying customers' viewpoints to know the factors that influence them to adopt E-banking technology.

2.8.2 Interviews with Banks' Customers:

We managed to conduct face to face interviews with nine customers from several banks in Palestine. Three of them did not know anything about E-banking services offered by Palestinian banks. While three of them had some information about the E-banking services but did not use them. Other customers were using E-banking services.

Interviews focused on two main issues:

1. Factors influencing E-banking adoption in Palestine:

All interviewees explained that all factors which discussed in literature are appropriate and influence E-banking adoption in Palestine (banks' customers, 2011). In addition, they focused on the role of Palestinian banks in the adoption of E-banking services (banks' customers, 2011).

Some of interviewees argued that Palestinian banks are introducing E-banking services in appropriate manner, those are in support of the using E-banking services. Other customers complained about lack of information about E-banking services and support for these services from Palestinian

banks i.e. Palestinian banks do not "play" significant role in the adoption process of E-banking services (banks' customers, 2011).

2. Accuracy of E-banking in Palestine:

Customers who used E-banking technology did not feel risk in accessing their accounts and performing their financial transaction. In the same time, they complained about continuous breakdowns and disconnections in E-banking servers. Customers who did not use E-banking services feel that E-banking services are risky (banks' customers, 2011).

Interviews with banks' customers in Palestine highlighted two important results:

1.   There is no consensus that Palestinian banks "play" an important role in the dissemination of E-banking services.

2.   E-banking technology in Palestine needs more effort to be more secure, more efficient, and available all the time.

2.9 Research Model:

Based on previous literature, theories and models, and exploratory interviews, we managed to identify the most important factors that influence E-banking adoption. These factors include: TAM, TPB, and TOE factors. Moreover, we included other factors, which are perceived risk, technology (Computer and Internet) usage, and bank's role.

TAM was used to identify the acceptance factors of E-banking technology by customers in Palestine. Moreover, TPB model could help in

understanding and analyzing the determents of E-banking technology acceptance.

Both of TAM and TPB complement each other. And they could significantly predict E-banking acceptance and determine the factors that influence E-banking adoption (Lee, 2009).

Furthermore, the TOE framework presents all possible factors that influence organizations to adopt new technologies (Rui, 2007). This goes in hand with the innovation diffusion theory, extended TAM, and decomposed TPB.

Many studies infer that perceived risk factor is the main factor that influences E-banking adoption by customers and banks. In addition, Perceived risk influences the factors of TAM and TPB (Schmiege, 2009).

Many IT specialists and customers in Palestine claim that factors such as technology (Computer and Internet) usage and bank's role influencing E-banking adoption directly and/or indirectly. There is a significant amount of Literature that supports this claim such as Aladwani (2001) and Shah and Siddiqui (2006).

In the current research, and based on the precious discussion, we selected the factors of perceived risk, bank's role, technology (Computer and Internet) usage, TAM and TPB to be the most important factors influencing customers to adopt E-banking technology. In addition, we identified the TOE framework as the most important framework that influences banks to adopt E-banking technology. As a result, the research general model consists of the two main parts:

1. Customers' Part: This part describes the models and factors that influence customers' adoption of E-banking technology. These factors include TAM, TPB, perceived risk, technology (Computer and Internet) usage, and bank's role.

2. Banks' Part: This part includes factors that influence banks adoption of E-banking technology which are presented in the TOE framework.

The following diagram explains the General Model of the Research.
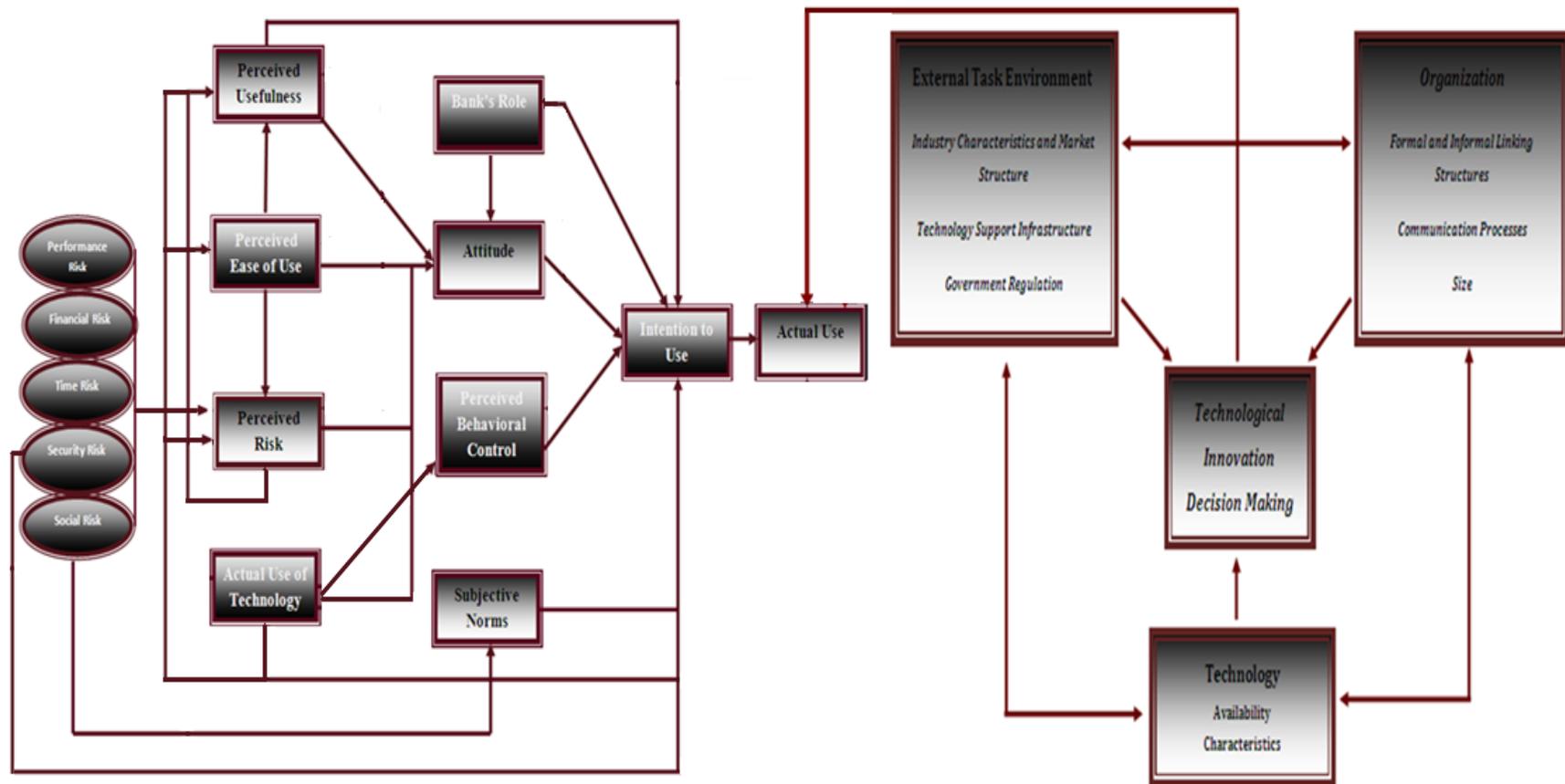
Figure 2-5: General Model for E-banking Adoption, source: the researcher depending on chapter 2

Based on the exploratory interviews and the general situation of E-banking in Palestine, it is obvious that the cause of the non-proliferation of E-banking in Palestine results from the customers' side. Therefore, we determined to select the Customer s' Part from the general E-banking adoption model to be the Research Model.
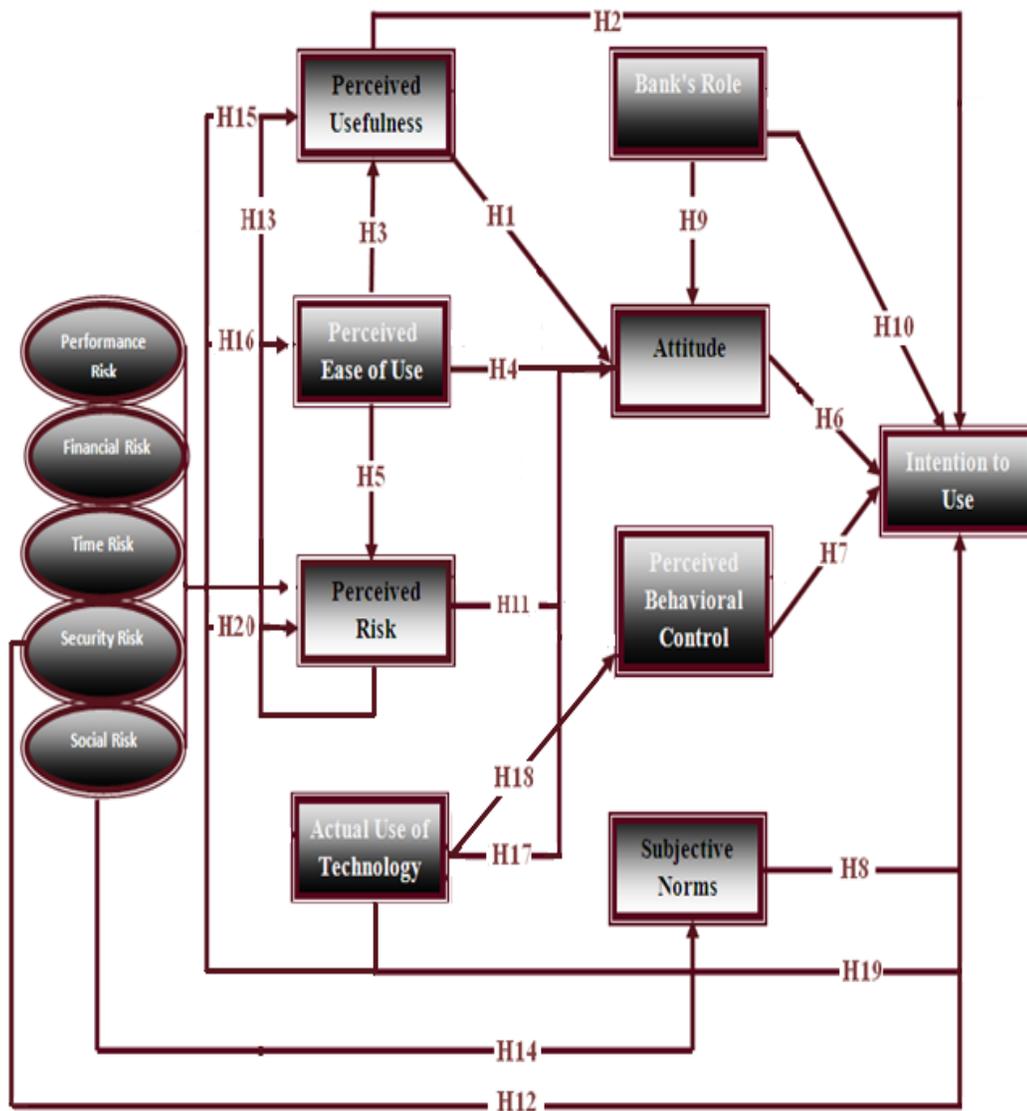
Figure 2-6: Research Model, source: the researcher depending on chapter 2

Hypotheses 1, 2, 3, 4, and 6, are developed based on TAM, as we discussed in section 2.5.3. Hypotheses 7 and 8 are developed based on TPB, as we discussed in section 2.5.4.

Hypothesis 5, 11, and 13 are developed based on the relationships between perceived risk and TAM, and between perceived risk and TPB which are mentioned in Featherman (2003), Alireza et al. (2010), and Schmiege (2009) studies, as we discussed in section 2.6.

Hypotheses 15 is developed based on empirical study for Safeena et al. (2011). Hypotheses 12 and 14 are developed based on empirical study for Lee (2009).

Hypotheses 9 and 10 are developed based on related studies and researches for kuisma (2007), Aladwani (2001), Shah and Siddiqui (2006), and Davis (1989).

Hypothesis 15, 16, 17, and 19 are developed based on empirical studies for Adesina et al. (2010), Afari-Kumah and Achampong (2010), Shim et al. (2001), ALENEZI et al. (2010) as explained in section 2.7.

Hypothesis 18 is developed based on studies and researches in user acceptance model for Ndubisi (2004), Dillon and Morris (1996) and Green (2005).

Hypothesis 20 is developed based on empirical studies for Liebermann and Stashevsky (2002), and Gebauer et al. (2011).

All hypotheses will be tested to verify their validity.

Research Hypotheses:

- H1: Perceived usefulness has positive influence on attitude to use E-banking services.

- H2: Perceived usefulness has positive influence on intention to use E-banking Services.

- H3: Perceived ease of use has positive influence on perceived usefulness to use E-banking Services.

- H4: Perceived ease of use has positive influence on attitude to use E-banking Services.

- H5: Perceived ease of use has negative influence on perceived risk to use E-banking Services.

- H6: Attitude has positive influence on intention to use E-banking Services.

- H7: Perceived behavior control has positive influence on intention to use E-banking Services.

- H8: Subjective norms has positive influence on intention to use E-banking Services.

- H9: Bank's Role has positive influence on attitude to use E-banking services.

- H10: Bank's Role has positive influence on intention to use E-banking services.

- H11: Perceived Risk has negative influence on attitude to use E-banking Services.

- H12: Security Risk has negative influence on intention to use E-banking Services.

- H13: Perceived Risk has negative influence on perceived usefulness to use E-banking Services.

- H14: Social Risk has positive influence on Subjective Norms.

- H15: Technology (Computer and Internet) usage has a positive influence on perceived usefulness.

- H16: Technology (Computer and Internet) usage has a positive influence on perceived ease of use.

- H17: Technology (Computer and Internet) usage has a positive influence on attitude.

- H18: Technology (Computer and Internet) usage has a positive influence on perceived behavior control.

- H19: Technology (Computer and Internet) usage has a positive influence on intention.

- H20: Technology (Computer and Internet) usage has a negative influence on perceived risk.

The research model contains technological and environmental features. The acceptance of E-banking services is influenced by system features and social systems.

In addition, research model contains perceived risk factor which is very important factor; perceived risk has several types which include large number of factors influencing E-banking adoption.

Moreover, this model has prerequisite factor for using technological solutions which is the familiarity with Computer and Internet. Familiarity with Computer and Internet helps banks' customers to use E-banking services correctly.

Finally, this model contains bank's role factor which is very important factor in E-banking adoption process. Banks are the main part in the diffusion process of E-banking services. Bank's role mentioned in pervious related studies as separate factors. None of previous studies mentioned bank's role as we did.

From all above, it is obvious that research model is comprehensive, has most of the factors that influence E-banking adoption, and has different types of factors that related to social and technological issues. These features distinguish this research model from the previous related models; several related studies emphasis on one side of factors and ignore others. Fink Jaruwachira- Thanakul (2005) studied E-banking adoption by using only Decomposed TPB, Pikkarainen et al. (2004) studied E-banking adoption by using only TAM and Focus groups, Suh and Han, (2002) studied E-banking adoption by using only TAM, and Liao et al. (1999) studied E-banking adoption by using only TPB and Diffusion of Innovation.

Chapter Three

Methodology

Chapter Three

Methodology

3. Methodology:

The aim of this chapter is to present the research methods that are used in this research. In this chapter we will explore the research purpose, research approach, research strategy, the sampling techniques, and sample size.

3.1 Definition:

Methodology is the style or method researchers follow in conducting their research. Often researchers select the research methodology according to the nature of the research itself. Each research has its properties and uniqueness (Alhamdani et. al. 2006).

3.2 Research Purpose:

There are three types of academic researches depending on the problem area and the nature of the phenomenon that it studies. "The purpose of the research can be Exploratory – has unknown problem, Descriptive – there is awareness of the problem, or Explanatory – the problem is clearly defined" (Baraghani, 2007).

Exploratory Research:

Researchers often tend to use exploratory studies when the problem is complex, not well known or its scope is still undetermined. Researchers

need to define, explain, and understand the nature of the phenomenon to assess the phenomenon in a new way. In this type of studies, it is possible to use interviews with experts in the field of the study (Yin, 1994).

We conducted several interviews with IT specialists in Palestinian banks and specific customers in order to understand the research problem accurately, and to reveal its ambiguity. Therefore, exploratory research is used in this area.

Descriptive Research:

In descriptive researches, the problem is known, but researchers are not fully comprehension of the situation. In this case, researcher needs to describe and explain the research problem (Dane, 1990). Descriptive research answers questions such as whom, how, what, and where, but does not give any explanations about the results. Descriptive research collects information about the current status (what is found) of the phenomenon with respect to the conditions of the situation (Jackson, 1994).

This research needs to describe the current situation of the problem, answer the research questions which are in the form of 'WHAT', and to highlight the most important factors that influence the adoption of E-banking by customers in Palestine. Moreover, this research aims to explain the phenomenon and assess the current situation of E-banking in Palestine. Therefore, Descriptive research is being used in to fulfill this approach.

Explanatory Research:

Explanatory research assesses the causal relationships between variables. This type is also called causal research. Explanatory research can be used to show that one variable causes the values of another variable (Miles, et al., 1994).

This research needs to compute the correlations between factors that influence E-banking adoption and introduce E-banking adoption model which join all factors together. Hence, Explanatory research is being used in to fulfill this approach.

3.3 Research Approach:

3.3.1 Inductive versus Deductive Research Approach:

There are two theoretical approaches to form conclusions when conducting research – inductive and deductive approaches. The inductive approach depends on collecting empirical data, analyzing, and then developing theories about the phenomenon. The deductive approach aims to study known theories to formulate hypotheses, and then test these hypotheses on a specific area (Trochim, 2006).

Little known information and data about E-banking adoption in Palestine from the perception of banks and customers, and little could be said about the factors that influence the spread of E-banking technology in Palestine. In this stage, there was an observation (low use of E-banking technology), and then we collected data by conducting exploratory

interviews to formulate results and decisions about how to study this phenomenon. Inductive approach was used in this area.

The factors, the models, and the theories that influence E-banking adoption by customers were chosen from literature and exploratory interviews. Depending on these factors and theories, we designed the research model and we created the research hypothesis to be tested to gather observations and conformations. Deductive approach was used in this area.

3.3.2 Quantitative Versus Qualitative Research Approach:

Researchers follow qualitative approach, quantitative approach, or both of them to understand and explain a specific phenomenon. Researchers depend on the research purpose, the nature of the research, the problem area, and research questions to determine the appropriate approach (Alhamdani et. al. 2006).

Qualitative approach Objective "is to discover and encapsulate meanings once the researcher becomes immersed in the data" (Creswell, 2003). Qualitative approach seeks to understand the research problem from the local population. Researchers often try to get specific information about the phenomenon, variables, and values by exploring opinions, behaviors, and perceptions of a particular population. So, this approach gives information and descriptions about thoughts and experiences of people (FHI, 2005).

Quantitative approach objective "is to test hypotheses that the researcher generates" (Creswell, 2003). Quantitative approach depends on numerical data and statistics to describe the phenomenon and explore the correlations between its variables. In this case, results are expressed in quantitative terms and can be represented in figures (khan, 2009).

To suit the research problem and research questions, we utilized a mixed model approach that combines both qualitative and quantitative approach. We used exploratory interviews to explore and understand the E-banking phenomenon in Palestine. To achieve this purpose, we used flexible questions. Qualitative approach is used in this area.

This research aims to study the factors that influence E-banking adoption by customers, and to study the correlations between these factors. In the case, we need to quantify variation, determine the causal relationships, and describe the characteristics of the population. In addition, we need to confirm research hypotheses and we need instruments which are more rigorous in eliciting and categorizing responses to questions with highly structured methods, because we deal with a large slice in the population of Palestinian banks' customers. Quantitative approach is used in this area.

3.4 Research Strategy:

The research strategy is a plan for drawing the research path; researchers determine how they will develop their questions, and in which manner these questions would be answered (Saunders, 2000).

According to Yin (1994), research can be done using five strategies to collect data and get results: experiment, survey, archival analysis, history and case study. In addition, there are three criteria to determine the research strategy: types of research questions, control over behavioral events, and focus on present events. But it is important to notice that boundaries among the above methods are not completely clear, they may overlap each other.

Table 3-1: Relevant situation for different study strategies

Strategy	Form Of Study	Requires control over behavioral events	Focus on contemporary event
Experiment	How, Why	Yes	Yes
Survey	Who, what ,where, How many, How much	No	Yes
Archival Analysis	Who, What, Where ,How many, How much	No	Yes/No
History	How, Why	No	No
Case Study	How, Why	No	Yes

Source: Baraghani, 2007

The survey approach has been chosen in this research because the research questions are: What are the factors influencing the adoption of E-banking by Palestinian banks' customers? What are the role of perceived risk, technology usage (Computer and Internet), and Palestinian banks in E-banking adoption? So the types of questions are in the form 'WHAT'. This research does not require control over behavioral events but it focuses on present events.

Furthermore, to achieve the descriptive purpose, questionnaire is needed to describe the current situation. An explanatory purpose can be achieved by using survey strategy; data is analyzed, and then causal

correlations between variables are viewed. To achieve the exploratory purpose, the survey strategy is also valid by interviews and meetings.

From all the above, the most suitable strategy to follow in this research is the survey strategy.

3.5 Sampling Technique:

It is very important to determine how researchers will choose their samples; there are several methods where researchers choose samples to suit their research purposes.

3.5.1 Research Population:

It is significant to determine the research population before discussing sampling issues. Without understanding the research population, researchers can not conduct their empirical studies and results will not appear. Population is "the whole groups of individuals, phenomenon, or things that we aim to generalize our study's results on" (Alhamdani et. al., 2006).

The main objective of this research is to determine the factors that influence the adoption of E-banking by customers in Palestine, and then introduce E-banking adoption model in Palestine. So, **customers who deal with Palestinian banks which have at least one E-banking service form the research population.** As we mentioned in chapter two, each Palestinian bank has at least one E-banking service, so all customers of Palestinian banks are accepted to be in the research population.

3.5.2 Research Samples

The research sample is a subgroup from the whole group (population), which is selected according to specific procedures to represent that population. Researchers choose a sample rather than using the whole population because the sampling process saves time and money. If researchers choose the right sample, they will get results that reflect the whole population on the large scale (Patton, 1990).

This research treated with three categories of participants to understand the problem area, to determine the factors that influence E-banking adoption, and to find the correlations between these factors. Each category has a separate sampling type.

In quantitative approach, probability sampling was chosen to get random sample where each customer in Palestine can participate. Therefore, we can represent all population.

Banks' customers are spread out in all Palestinian areas and governorates. The Palestinian people have joint culture, believes, thoughts, perception, etc., but each area in Palestine has its own culture and believes that distinguishes it from other areas, for example the norms and habits in north of Palestine are not exactly like those in south of Palestine. Therefore, the research population is not completely homogeneous. The best sample method which can represent the research population is stratified sampling.

We divided the Palestinian society into different stratums (governorates); these stratums have an acceptable degree of homogeneity between each other. Then, we divided the sample into sample units, where all sample units represent the research population.

Each governorate in Palestine has different number of banks' customers. Therefore, the size of the simple in each governorate should fit with the original size of the governorate. Therefore, proportional stratified sampling is the most suitable method to get critical and realistic distribution, and then we can generalize the results on the population.

In interviews with IT specialists, the population was the Palestinian banks. Interviews were aimed to understand the problem area. In this case, specialists who have sufficient experience are needed, so non probability sampling is selected. The most appropriate type of non probability sampling fits this situation is purposive sampling, because we want to reach a specific purpose from experts – all IT specialists, regardless of availability.

In interviews with banks' customers, we aimed to get several viewpoints about E-banking technology to understand the problem accurately. Therefore, we sought to find customers who have different knowledge about E-banking technology. In this case, the population is not visible; guidance is needed to find the appropriate customers. Snowball sampling is the best sampling method in this area.

3.5.3 Sample Size:

It is important to determine the sample size of the research to represent the research population and measure the margin of errors. Saunders (2000) determined the main elements that influence the sample size. These elements are:

- **The certainty level:** "The level of certainty that the characteristics of the data collected will represent the characteristics of total population. Researchers normally work to 95 percent level of certainty ".

- **The certainty interval:** "the margin of error that you can tolerate, that is the accuracy you require for any estimates made from your sample" (Saunders, 2000). The certainty interval that researchers usually use located between 3 to 5 percent.

- **The size of total population**.

From above, sample size should fit with appropriate certainty level, and appropriate interval level. In addition, it should fit the population size. Therefore, the sample size of this research is 1000 samples with 95% certainty level. The population size is 1.5 million (PMA, 2011). So, the certainty interval will be 3.1% (AAPOR and AMA, 2010).

Here is the formula used in our Sample Size Calculator (AAPOR and AMA, 2010). Sample Size:

$$SS = \frac{Z^2 \times (p)(1-p)}{C^2}$$

Where:

Z = Z value (e.g. 1.96 for 95% confidence level)

p = percentage picking a choice, expressed as decimal (0.5 used for sample size needed)

c = confidence interval, expressed as decimal (e.g., .04 = ±4)

The sample size of the qualitative research – exploratory interviews with IT specialists is the number of Palestinian banks (18 banks). We need to ask each bank about its impressions. The IT specialist is selected from each bank.

The sample size of the qualitative research – exploratory interviews with banks' customers is 9 customers. Snowball sampling requires at least 7 participants as an expert of research methodology argued.

3.6 Summary:

This empirical study has two parts: the first one is seeking for a better understanding of the phenomenon. To achieve this purpose, we select exploratory research which is considered to be suitable with qualitative approach and inductive approach. These two approaches also fit with survey strategy. Furthermore, non probability sampling is used to achieve the purpose of the study. Finally, the sample size fits the research purpose.

The second part aims to describe and determine the factors that influence the adoption of E-banking in Palestine, and to find the correlations between these factors. To achieve this purpose, we used descriptive and explanatory research which fit with quantitative approach

and deductive approach. These two approaches also fit with probability sampling. Furthermore, the sample size fits the research purpose.

The following table summarizes the methodology which is used in this research:

Table 3-2: Research Methodology

Purpose / Methodology	Exploratory Interviews	E-banking Adoption Model
Research Purpose	Exploratory Research	Descriptive Research Explanatory Research
Research Approach	Inductive Approach Qualitative Approach	Deductive Approach Quantitative Approach
Research Strategy	Interviews Strategy	Survey Strategy
Sampling Technique	Non-Probability Sampling (Purposive & Snowball)	Probability Sampling (Proportional Stratified Sampling)

Source: The Researcher

Chapter Four

Data Collection

Chapter Four

Data Collection

4. Data Collection:

This chapter outlines the design of research tool upon the methodology which is selected in pervious chapter. Furthermore, it displays the quality standards for research tool and data collection results.

4.1 Research Tools:

This is a survey based research. We designed two surveys to collect data. The first was interviews aimed to collect data from IT bankers and specific customers. The second survey was a questionnaire to get quantified results to answer the research questions.

4.1.1 Interviews:

Interview is "an interchange of views between two or more people on a topic of mutual interest, sees the centrality of human interaction for knowledge production, and emphasizes the social situations of research data" (Kvale, 1996). Interviews have three main types: Unstructured Questions, Semi Unstructured Questions, and Structured Questions (Corbetta, 2003).

In this research, we used unstructured interviews because we need to hear about research problem as much as possible without restrictions or orders. Furthermore, unstructured interviews enable participants to answer as they want without limitations.

We conducted telephone interviews with bankers, since research time is limited, and banks are sited far away from each other. In addition, we could recall bankers if there is need for additional information and explanations. These interviews are not the main tool for collecting data; it is just exploratory.

On the other hand, we conducted face-to-face interviews with customers; since customers do not have efficient experience in E-banking like IT bankers i.e. we need to explain and clarify all issues in details for customers. Furthermore, number of customers was small (9 customers). In this case face to face interviews do not need a lot of time and effort.

The interviews were divided into two parts: bankers' part and customers' part. The questions are refined with my supervisor and arbitrators to be as the following:

Bankers' part:

1.   Personal information (bank name, banker's job title)

2.   Key questions in the interview:

- What are the E-banking services that you provide?

- What is the approximate percentage of customers who are using E-banking technology?

- Which side (customers or banks) do you suggest to study to achieve the purpose of the research?

- From your experience and knowledge, what are the factors that may influence E-banking adoption in Palestinian society?

Customers' part:

1. Personal information

   - Do you have bank's account?

   - Are you using E-banking services?

2. Key questions in the interview:

   - What are the factors that may influence E-banking adoption in Palestinian society?

   - Are Palestinian banks introducing E-banking services in accurate manner?

During these interviews and meetings, we organized discussions that evolved around certain sub-questions from participant's speech. These sub-questions helped us to understand and get a clear idea about E-banking technology in Palestine and made the problem research more obvious.

4.1.2 Questionnaires:

Questionnaire is a simple and rapid tool for collecting data in less time with less effort. By using this tool hundreds even thousands of individuals can participate (Khan, 2009).

We choose questionnaire as a research tool to test the research model which is formulated in chapter two. Questionnaire is designed with closed questions method to get specific answers, which will help in achieving the

research purpose. Especially the research population is large. Thus, the use of the questionnaire provides accurate data and enables us to analyse the collected data without ambiguous results.

First draft of the questionnaire is designed as the following:

1.   We made questionnaire cover, which consists of three parts: purpose of the questionnaire, definition of E-banking services, and letter of gratitude to participants with promises not to share their information to a third party.

2.   We chose independent variables that could help in understanding the nature of people.

3.   We set some questions to measure the usage of Internet, computers, mobiles and E-banking services. In addition, we asked about participants' banks' names.

4.   We set several statements related to the factors that influence E-banking adoption. These statements aim to measure the factors that determined in the research model. We set a group of statements for each factor; each factor has 5 statements. We chose five statements for each factor because two or three statements do not cover the meaning of each variable. In addition, more than five statements would be too long and impractical.

The source of questionnaire statements depended on specific previous empirical studies, and the viewpoints of experts in E-

banking fields. The following table explains the source of the statements of research questionnaire

Table 4-1: Source of Questionnaire Statements

Factor Influencing E-banking Adoption	Source
Perceived Usefulness	Baraghani (2007), Lee (2009), Huang et. al. (2007), Experts in banking sector
Perceived Ease of Use	Baraghani (2007), Huang et. al. (2007), Cheng et. al. (2006), Experts in banking sector
Attitude	Baraghani (2007), Alireza et. al. (2010), Cheng et. al. (2006), Experts in banking sector
Perceived Behavioral Control	Baraghani (2007), Huang et. al. (2007),Lee(2009), Experts in banking sector
Subjective Norms	Baraghani (2007), Dillon and Morris, 1996, Experts in banking sector
Bank's Role	Aladwani, 2001, Khalfan et. al., 2006,Banking experts, banks' customers
Intention	Baraghani (2007), Suleiman et. al. (2007), Cheng et. al. (2006), Experts in banking sector
Perceived Risk	Baraghani (2007), Lee (2009), Huang et. al. (2007), Experts in banking sector

5.   To measure the statements which are created in step three, we chose five point likert scales. "1" strongly disagrees, "2" disagree, "3" neutral, "4" agree, "5" strongly agree.

6.   I discussed first draft of the questionnaire with my supervisor. Adjustments were made.

7.   After we reviewed the English Version of the questionnaire to be sure it would achieve the research goals, we translated it into Arabic Language, because it's the mother language in Palestine. The translation process also reviewed to make sure that the meaning of the statements in Arabic corresponds to the meaning in English.

4.2 Quality Standards for the Research Tool:

We performed several procedures to test the questionnaire, and insure its quality.

4.2.1 Pilot study:

Pilot study is a test study that is most often performed before collecting the data. It aims to refine and improve the questionnaire. In this case, participants can understand the questions without facing any problems, and give their answers clearly. Pilot study also helps researchers to record their data easily, and reduce the possibility of getting incomplete answers. Generally, the number of participants should be at least ten participants (Saunders, 2000). Research tool was reviewed by group of experts and arbitrators (Table 56 in Appendix B has the names of experts and arbitrators), starting with my supervisor, experts in the banking sector, experts in statistics and questionnaire designing. Experts and arbitrators made comments on the contents, and the format of the questionnaire.

Questionnaire was refined, and then we chose twenty participants who have bank accounts to review the questionnaire with them. Discussions were made about: repeated questions, clarity of the questions, order of the questions, and if the questions are directed the participants toward a specific alternative. Participants made comments on the contents of the questionnaire. The participants in pilot study are excluding from the research sample and the final analysis.

All these comments from experts, arbitrators, and participants were discussed with my supervisor, and then adjustments were made. The number of statements for each variable reduced from five to four statements, in order to reduce the repeated questions which can cause boredom for the participants. Questionnaire was refined and became ready for distribution. Before distribution process, it is important to test the reliability and validity of the questionnaire.

4.2.2 Reliability and Validity:

We seek to make research questionnaire consistent, clear, and understandable by all. In addition, the questionnaire should achieve its goals. Therefore, reliability and validity should be measured.

Reliability:

Reliability is the consistency of responses; the degree to which an instrument measures in the same way each time under the same conditions. Reliability is used to insure internal consistency and to achieve high degree of homogeneity between questionnaire statements (Polit and Hunger, 1985).

We can compute reliability through different methods like test- retest reliability, internal consistency reliability, and equivalent forms reliability.

In this research, we checked questionnaire reliability by choosing internal consistency method. By using this method, we can measure the correlation between each item in the questionnaire and others. In addition, we do not need to perform more than one test, or to design two equivalent

forms. Likert scale questionnaires use Cronbach alpha method as Alhamdani et. al. (2006) argued.

Furthermore, test-retest method is not a main method to use for measuring the reliability. It requires a lot of time which is not available in this research, and it is difficult to find the same sample each time.

The equivalent forms method also requires a lot of time. In addition, questionnaire will be too long (questionnaire in this method has two forms). Therefore participants may not answer in truthfulness.

We chose 40 participants from Jenin, Nablus and Ramallah governorates to measure the reliability of the questionnaire. Cronbach's alpha was calculated for all statements in the questionnaire as the following:

Table 4-2: Reliability Statistics of Factors Influencing E-banking Adoption

Factor Influencing E-banking Adoption	Cronbach's Alpha
Perceived Usefulness	0.823
Perceived Ease of Use	0.821
Attitude	0.796
Perceived Behavioral Control	0.826
Subjective Norms	0.738
Bank's Role	0.727
Intention	0.746
Perceived Risk	0.908
All statements in study Questionnaire	0.884

All the factors that influence E-banking adoption are above 70%, as well as the total reliability of the questionnaire is around 88%. Therefore, the research tool is reliable.

Validity:

Validity measures what the research tool is measure; it ensures that the research tool is measuring what researchers attend to measure or want to measure (Polit and Hunger, 1985).

There are three methods to measure the validity of the research tool, which are: content validity, criterion related validity, and construct validity.

In this research, we worked on different issues to achieve the validity of the research tool. These issues are:

- The literature that we depended on to design the research model and hypothesis, as well as the pervious empirical studies in E-banking field which their validity and reliability is tested and trusted.

- Arbitrators and experts in banking sector and statistics who refine the research tool to achieve the research purpose.

- A pilot study was done with experts and customers to ensure that research tool can achieve the research purpose.

- Reliability was checked to assure the consistency of the questionnaire. Research tool consistency is indicator of well designed questionnaire that can achieve the research purpose.

- Some questions which included in the questionnaire are related to each other. Therefore, they should be answered in a specific way. For example, if participants mentioned an E-banking service which does not exist in the mentioned bank, then the answer would not be

reliable. Therefore, the questionnaire will be excluded. In addition, answering the governorate part in the questionnaire is connected with the answer of bank's name, and answering the subjective norms factor is connect with the answer of social risk factor.

- Questionnaire statements are related to empirical E-banking studies, Palestinian bankers who are specialists in management and Information Technology, and experts in statistics and questionnaire designing (Table 4-1: shows the source for each factor that included in the questionnaire).

We cannot apply criterion related validity method because it needs a lot of time. This method needs to measure the behavior by questionnaire, and then waiting to observe the real behavior of participants. In addition, there are no trusted studies in Palestine studied E-banking adoption by customers to compare our responses with their.

After all those procedures, the questionnaire was refined to get the final version, which consists of three parts:

Personal Information: As we mentioned before, questionnaire was distributed in all areas in the West Bank and Gaza strip. It is important to cover all slices to represent research population, as well as to highlight the significant differences between participants. This part contains: gender, age, occupation, monthly income, and the governorate.

Technology and E-banking Services: Part two aims to determine the use of computers, Internet, and mobiles, besides, E-banking services in

Palestine and highlight their relationships with other variables. We have three main questions: technology usage (Mobile, Computer, and Internet), E-banking usage (ATM, SMS banking, credit card, phone banking, and Internet banking) and the name of participants' banks.

The factors that influence E-banking adoption: Third part aims to measure the factors that influence E-banking adoption and to find the correlations between these factors. Each factor has four statements except Bank's Role factor which has five statements. Appendix C has the research tool (the questionnaire) in Arabic and English languages.

4.3 Distribution of the Questionnaire:

As we mentioned, the proportional stratified sampling was adopted to collect the data from all areas in Palestine. The questionnaire was distributed in the governorates, each governorate considered as one stratum. The number of questionnaires in each governorate fit with the number of banks' customers in that governorate.

The number of banks' customers in each governorate was not available in Palestinian monetary authority (PMA). Furthermore, some banks considered this information to be confidential, and some of them took an excessive amount of time to respond, therefore the number of banks' customers in each governorate was not available.

Experts in banking sector suggested distributing the questionnaires upon the number of branches in each governorate. Experts confirmed that the new branches are opened, if the number of customers is increasing, and

economy is developing in a specific area. The development of economy will increase working people who will have incomes; therefore banks' customer will increase.

The following table shows how One Thousand and Ten Questionnaires were distributed throughout all governorates in Palestine. As well as, it shows all details about Data Collection.

Table 4-3: Distribution and Collection of Data

Governorate	No. of Branches	No. of Surveys	Survey's Received	Valid Surveys	Response Rate
Jenin	15	80	80	77	96%
Tubas	2	11	11	11	100%
Nablus	25	133	124	118	89%
Tulkarm	9	50	46	43	86%
Qlqelyah	4	22	21	19	86%
Salfeet	3	16	16	15	94%
Jerusalem	9	50	44	43	86%
Bethlehem	14	75	57	51	68%
Hebron	25	133	103	93	70%
North Gaza	2	11	3	3	27%
Gaza	22	116	83	72	62%
Khanyonis	7	37	5	5	13.5%
DerAlbalah	5	26	5	5	19%
Rafah	4	22	1	1	4.5%
Ramallah and Berih	37	196	166	153	78%
Jericho and Valleys	6	32	32	30	94%
Total	189	1010	797	739	73%

From the above table, it is obvious that the response rate in Gaza Strip is much lower than West Bank. The response rate in Gaza Strip is 41%, and the response rate in West Bank is 82%. The overall response rate is 73%.

Chapter Five

Data Analysis

Chapter Five

Data Analysis

5. Data Analysis:

This chapter will present the results of analysis of data that is collected via the questionnaire using SPSS software. This chapter will show the results of descriptive statistics and the results of the hypotheses testing in order to determine the factors that influence E-banking adoption in Palestine. Furthermore, this chapter will present E-banking adoption model in Palestine.

5.1 Introduction:

In order to analyse the research results, we used Statistical Package for the Social Sciences (SPSS) software. SPSS is a computer program used for statistical analysis. SPSS fit with quantitative approach and survey strategy which were adopted in this research; SPSS has many features and properties which can provide appropriate results, these results lead to achieve research purpose. SPSS can provide several statistics for each element in the research questionnaire. As well as, SPSS is useful to get the causal relationships between questionnaire elements (DeCoster, 2004).

5.2 Demographic and Descriptive Statistics:

Respondents on research questionnaire have different personal information; besides these differences they introduce different responses toward technology usage, E-banking usage, and the factors that influence E-banking adoption. The following discussion shows these differences.

5.2.1 Personal Information:

739 participants answered the questionnaire from all areas in Palestine. The following tables show the characteristics of participants.

- Gender

As next table shows, research sample includes 457 men who form around 62% of the participants, and 282 women who form around 38% of the participants. Figure 1 in Appendix A shows the gender distribution in this research.

Table 5-1: Distribution of Gender

Variable	Characteristic of the Variable	Frequency	Percentage
Gender	Male	457	61.8%
	Female	282	38.2%

- Age

Age was divided into five intervals; the following table shows the details of age. Figure 2 in Appendix A shows the Age distribution in this research.

Table 5-2: Distribution of Ages

Variable	Characteristic of the Variable	Frequency	Percentage
Age	Less Than 20 years Old	12	1.6
	20 – 30 years old	404	54.7
	31 – 40 years old	185	25.0
	41 – 50 years old	93	12.6
	More than 50 years old	45	6.1

- Occupation

Occupation was divided into twelve intervals; the following table shows the details of occupations. Figure 3 in Appendix A shows the distribution of occupations in this research.

Table 5-3: Distribution of Occupations

Variable	Characteristic of the Variable	Frequency	Percentage
Job / Career	Private Sector	301	40.7
	Public Sector	174	23.5
	Non-Governmental Organizations	13	1.8
	Sales\Trading	38	5.1
	Agriculture	4	.5
	Crafts	2	.3
	Engineering	37	5.0
	Health Sector	26	3.5
	Worker	31	4.2
	Student	36	4.9
	Military	32	4.3
	Others	45	6.1

- Educational Level

Educational Level was divided into four intervals; the following table shows the details of educational levels. Figure 4 in Appendix A shows the distribution of Educational levels in this research.

Table 5-4: Distribution of Educational Levels

Variable	Characteristic of the Variable	Frequency	Percentage
Educational Level	High School or Less	127	17.2
	Diploma	132	17.9
	Bachelor	412	55.8
	Master or Higher	68	9.2

- Monthly Income Level

Monthly income was divided into eight intervals; the following table shows the details of monthly income levels. Figure 5 in Appendix A shows the distribution of monthly income levels in this research.

Table 5-5: Distribution of Monthly Income levels

Variable	Characteristic of the Variable	Frequency	Percentage
Monthly Income Level	less than 1000 NIS	62	8.4
	1001-2000 NIS	161	21.8
	2001-3000NIS	233	31.5
	3001-4000NIS	141	19.1
	4001-5000 NIS	65	8.8
	5001-6000 NIS	32	4.3
	6001-7000 NIS	14	1.9
	More than 7000NIS	31	4.2

- The governorate

We distributed specific number of questionnaires in each governorate according to the number of banks' branches. The following table shows the details of governorates. Figure 6 in Appendix A shows the distribution of governorates.

Table 5-6: Distribution of governorates

Variable	Characteristic of the Variable	Frequency	Percentage
Province	Jenin	77	10.4
	Tubas	11	1.5
	Nablus	118	16.0
	Tulkarm	43	5.8
	Qlqelyah	19	2.6
	Salfeet	15	2.0
	Jerusalem	43	5.8
	Bethlehem	51	6.9
	Hebron	93	12.6
	North Gaza	3	.4
	Gaza	72	9.7
	Khanyonis	5	.7
	DerAlbalah	5	.7
	Rafah	1	.1
	Ramallah and Berih	153	20.7
	Jericho and Valleys	30	4.1

The results of analysis of personal information data appear the following facts:

- The highest percentage of participants is males who form 61.8% of respondents.

- The highest percentage of participants is young (20 – 30 years old) who form 54.7% of respondents.

- The highest percentage of participants is private sector employees who form 40.7% of participants.

- The highest percentage of participants has bachelor degree who form 55.8% of participants.

- The highest percentage of participants has monthly income ranges between 2001 -3000 NIS; their percentage in participation is 31.5%.

- The highest percentage of participants is from Ramallah and Berih governorate who form 20.7% of participants. This result is expected; we distributed the highest number of questionnaires in Ramallah and Berih governorate, because it has the highest number of banks' branches, and highest economic movement in Palestine, as well as it has high population.

5.2.2 Technology and E-banking Usage:

Respondents on technology and E-banking part have different responses. Furthermore, participants are not using the same Palestinian banks. The following discussion shows these differences.

- Mobile usage

We define four alternatives for mobile usage; the following table shows the responses for each alternative:

Table 5-7: Distribution of Mobile Usage

Variable	Characteristic of the Variable	Frequency	Percentage
Mobile Usage	Not Use	15	2.0
	Monthly	6	.8
	Weekly	11	1.5
	Daily	707	95.7

- Computer and Internet usage (Technology Usage)

We define four alternatives for Computer and Internet usage, the following table shows the responses for each alternative:

Table 5-8: Distribution of Computer and Internet Usage

Variable	Characteristic of the Variable	Frequency	Percentage
Computer and Internet Usage	Not Use	46	6.2
	Monthly	31	4.2
	Weekly	89	12.0
	Daily	573	77.5

These results show that most participants are familiar with technology. Familiarity with technology may create adoption of E-banking technology, because E-banking technology depends on mobiles, computers, and Internet in high degree. It is obvious that the usage of computers and Internet less than the usage of mobiles.

- Automated Teller Machine Usage (ATM)

We define three alternatives for ATM usage; the following table shows the usage of ATM in Palestine as participants respond:

Table 5-9: Distribution of ATM Usage

Variable	Characteristic of the Variable	Frequency	Percentage
ATM Usage	Do not know this service	3	.4
	know it but did not Use it	136	18.4
	Use it	600	81.2

- SMS Banking Usage

We define three alternatives for the use SMS banking; the following table shows the use of SMS banking in Palestine as participants respond.

Table 5-10: Distribution of SMS Banking Usage

Variable	Characteristic of the Variable	Frequency	Percentage
SMS Usage	Do not know this service	40	5.4
	know it but did not Use it	397	53.7
	Use it	302	40.9

- Credit Cards Usage

We define three alternatives for the use of credit cards; the following table shows the use of credit cards in Palestine as participants respond.

Table 5-11: Distribution of Credit Cards Usage

Variable	Characteristic of the Variable	Frequency	Percentage
Credit Cards Usage	Do not know this service	20	2.7
	know it but did not Use it	471	63.7
	Use it	248	33.6

- Phone Banking usage

We define three alternatives for the use of Phone Banking; the following table shows the use of phone banking in Palestine as participants respond.

Table 5-12: Distribution of Phone Banking Usage

Variable	Characteristic of the Variable	Frequency	Percentage
Phone Banking Usage	Do not know this service	131	17.7
	know it but did not Use it	531	71.9
	Use it	77	10.4

- Internet Banking (Online Banking) Usage:

We define three alternatives for the use of Internet banking; the following table shows the use of Internet banking in Palestine as participants respond.

Table 5-13: Distribution of Internet Banking Usage

Variable	Characteristic of the Variable	Frequency	Percentage
Internet Banking Usage	Do not know this service	85	11.5
	know it but did not Use it	542	73.3
	Use it	112	15.2

Pervious discussion points for three important results:

1. Most of Participants have knowledge about primary E-banking services but they do not use these services yet.

2. The actual use of most E-banking services is around 27%.

3. ATM service is primitive E-banking technology; it has limited functions (withdrawal, deposit, and balance enquiries). ATMs

become familiar among participants and achieved the highest usage by participants rather than other E-banking services.

These results agree with the problem statement of the research and bankers viewpoints. Therefore, this research is realistic and representing all customers in Palestinian society.

- Banks of Participants

The main banks: The following table shows the details of the main banks of participants.

Table 5-14: Distribution of Participants' Main Banks

Variable	Characteristic of the Variable	Frequency	Percentage
Main Bank	Cairo Amman Bank	107	14.5
	Arab Bank	253	34.2
	Housing Bank	27	3.7
	Bank of Palestine	190	25.7
	Arab Islamic Bank	15	2.0
	Bank of Jordan	50	6.8
	Al-Quds Bank	45	6.1
	Palestinian Islamic Bank	16	2.2
	Palestinian Commercial Bank	6	.8
	Alrafah Bank	6	.8
	Commercial Bank of Jordan	1	.1
	Investment Bank	4	.5
	Alahli Bank of Jordan	10	1.4
	Egyptian Arab Land Bank	7	.9
	Jordan Kuwait Bank	2	.3

Secondary Banks: The following table shows the details of the secondary banks of participants.

Table 5-15: Distribution of Participants' Secondary Banks

Variable	Characteristic of the Variable	Frequency	Percentage
Secondary Bank	Cairo Amman Bank	59	8.0
	Arab Bank	87	11.8
	Housing Bank	22	3.0
	Bank of Palestine	76	10.3
	Arab Islamic Bank	14	1.9
	Bank of Jordan	32	4.3
	Al-Quds Bank	19	2.6
	Palestinian Islamic Bank	8	1.1
	Palestinian Commercial Bank	5	.7
	Alrafah Bank	2	.3
	Investment Bank	9	1.2
	Alahli Bank of Jordan	8	1.1
	Egyptian Arab Land Bank	2	.3
	Jordan Kuwait Bank	1	.1
	HSBC Bank	2	.3
	Total	346	46.8
	Missing	393	53.2

The following table shows the details about participants who are divided into two parts: participants who are using one bank, and participants who are using more than one bank.

Table 5-16: Number of participants who use one bank and who use more than one bank

Variable	Characteristic of the Variable	Frequency	Percentage
Number of Banks	More Than One Bank	346	46.8
	One Bank	393	53.2

Pervious discussion points for two important issues:

1. Most participants are using Arab Bank. This indicates that Arab Bank has the largest market share in Palestine. Furthermore, exploratory interviews explained that Arab Bank using all E-banking services and spreading in all over Palestinian areas. This indicates

that survival for the banks that provide all services and can reach all society.

2.   Most of participants are using one bank.

Third part of questionnaire contains factors and variables that influence E-banking adoption. All details about this part will be explained in hypothesis testing section (section:5 -4). Appendix B has the frequencies and percentages of each statement in this part (from table 1 to table 49).

5.3 Statistical Differences among Survey Respondents:

This section outlines the statistical difference between participants in this research. Independent Samples Test (t-test for Equality of Means) and one-way ANOVA Test are used to explain these differences; these two tests are used because correlations between qualitative and quantitative factors will be tested, as well as we need to highlight whether the means of several variables are equal or not.

T-test method compares means of qualitative independent variable which has two levels, where as one-way ANOVA compares means of qualitative independent variable which has more than two levels. In this case, the dependent variables are quantitative.

- **Statistical Differences According to Gender**

Both genders males and females took part in the survey; therefore we used T-test method. There are statistical differences between males and females as the following:

Perceived Usefulness: there are statistical differences between males and females in recognizing the usefulness of E-banking (P < = 0.010). Males consider E-banking technology to be useful more than females (the mean for males is 4.35 and for females is 4.24)

Perceived Ease of Use: there are a statistical difference between males and females (P < 0.010). Males consider E-banking technology to be easy to use more than females (the mean for males is 4.00 and for females is 3.85)

Perceived Behavioral Control: there are a statistical difference between males and females (P < 0.010). Males have self efficiency to use E-banking technology more than females (the mean for males is 4.02 and for females is 3.81)

Social Risk: there are a statistical difference between males and females (P < 0.05). Males believe that E-banking technology may cause problems with their social more than females (the mean for males is 3.24 and for females is 3.11)

Appendix B shows full details about these differences (table 50).

- **Statistical Differences According to Age**

Age was collected as plain number; therefore we used Pearson Correlation to determine the correlation between participants' ages and other variables. As well as, ANOVA test is used to check the correlation between age intervals and other dependent variables (age has more than two alternatives). There are statistical differences between ages as the following:

Financial Risk: ANOVA test shows statistical differences between ages (P< 0.01). Whereas age becomes older the financial risk becomes low. In addition, Pearson Correlation also shows that there is significant negative correlation between financial risk and age.

Social Risk: ANOVA test shows statistical differences between ages (P< 0.05). Whereas age becomes older the social risk becomes low. In addition, Pearson Correlation also shows that there is significant negative correlation between social risk and age.

Results for financial and social risks seem reasonable because 80 % of participants' ages are ranged from 20-40 years old. Most of participants are Youth who are familiar with technology usage and its solutions. Whereas youth ages become older, the recognition, the awareness, experience and knowledge will be increased, and then the fear of unknown and social will be reduced.

Actual Use of Technology: ANOVA test shows statistical differences between ages (P< 0.01). Whereas the age becomes older, the actual use of technology becomes low.

- **Statistical Differences According to Occupation**

One- way ANOVA test is also used to outline the statistical differences between participants according to their occupations. There are statistical differences as the following:

Attitude: ANOVA test shows statistical differences between participants according to their occupations (P< 0.05). Engineers have the highest

attitude toward E-banking Technology (mean equals 4.42), whereas farmers has the lowest attitude toward E-banking Technology (mean equals 3.75).

Perceived Behavioral Control: ANOVA test shows statistical differences between participants according to their occupations (P< 0.01). Engineers have the highest abilities, resources and knowledge to use E-banking Technology (mean equals 4.26), whereas craftspeople like carpenters has the lowest abilities to use E-banking Technology (mean equals 3.00 P).

Perceived Risk (Financial Risk, Social Risk, Time Risk, and Security Risk): ANOVA test shows statistical differences between participants according to their occupations (P< 0.01). Workers consider E-banking technology to be risky (mean: 3.73) more than others, whereas the employees of Non Governmental Organizations (NGOs) has the lowest risk toward using E-banking Technology (mean: 2.78)

The reason behind this result refers to the familiarity with technology and E-banking services. Employees of NGOs are using Computers and Internet daily. In addition, results show that employees of NGOs are using E-banking technology. So the experience, efficiency, and knowledge of E-banking services reduce the feeling of risks toward E-banking technology. Whereas, workers are not familiar with technology and E-banking services.

Actual Use of Technology: ANOVA test shows statistical differences between participants according to their occupations (P< 0.01). Employees of Non Governmental Organizations and Health Sector use Technology

more than others (mean: 2.92). In contrast, Craftspeople has the lowest use of Technology (mean 3.00)

- **Statistical Differences According to Educational Level**

There are statistical differences between participants according to their educational level. These statistical differences are toward Perceived Usefulness ($P< 0.01$), Perceived Ease of Use ($P< 0.01$), Attitude ($P< 0.01$), Perceived Behavioral Control ($P< 0.01$), Intention ($P< 0.05$), and Actual Use of Technology ($P< 0.01$).

Whereas educational level becomes high, the recognition of the previous factors becomes more. Furthermore, educational level has negative correlation with perceived risk (financial risk, social risk, time risk, and security risk)($P< 0.05$) i.e. whereas the educational behavioral becomes high; the risk of E-banking technology becomes low.

- **Statistical Differences According to Monthly Income**

One- way ANOVA test is also used to outline the statistical differences between participants according to their incomes. There are statistical differences as the following:

Attitude: ANOVA test shows statistical differences between participants according to their incomes ($P< 0.01$). Participants who have incomes more than 7000 NIS have the highest attitude toward using E-banking Technology (mean 4.56). Whereas Participants who have incomes less than 1000 NIS have the lowest attitude toward using E-banking Technology (mean 4.06).

Perceived Behavioral Control: ANOVA test shows statistical differences between participants according to their incomes (P< 0.01). Participants who have income between 6001 -7000 NIS have the highest abilities to use E-banking Technology (mean 4.30), where as participants who have income less than 1000 NIS have the lowest abilities toward using E-banking Technology (mean 3.68).

Banks' Role: ANOVA test shows statistical differences between participants according to their incomes (P< 0.01). Participants who have Income between 6001 -7000 NIS argued that Palestinian banks play significant role toward E-banking technology (mean 4.04). Whereas, Participants who have incomes between 2001 -3000 NIS argued that Palestinian banks do not play any significant role toward E-banking technology (mean 3.37).

Perceived Risk (Performance Risk, Financial Risk, Time Risk, and Security Risk): ANOVA test shows statistical differences between participants according to their incomes (P< 0.01). Participants who have incomes more than 7000 NIS have the highest risk toward using E-banking Technology (mean 3.89). Whereas, Participants who have incomes between 3001 - 4000 NIS have the lowest risk toward using E-banking Technology (mean 3.07).

- **Statistical Differences According to Governorate**

As we mentioned, questionnaires distributed to all provinces in Palestine; participants from these provinces do not response in the same manner. Statistical differences appear in their responses as the following:

(Rafah Governorate excluded because we have just one questionnaire from it)

Attitude: Statistical differences are found ($P< 0.01$). Participants who live in Nablus have highest attitude toward using E-banking Technology (mean 4.42), where as participants who live in Tulkarm, Khanyonis, and North Gaza have the lowest attitude toward using E-banking Technology (means 3.96, 3.40, and 3.92).

The reason behind this refers to the culture of people; for example the norms and habits in North Gaza are different from those in Nablus, and so on. Banks should work to change people's culture toward E-banking technology; especially the use of technology is increasing in Palestine. Banks can achieve this purpose by seminars, media, advertising, incentives, etc.

Subjective Norms: Statistical differences are found ($P< 0.01$). Participants who live in Gaza Strip (North Gaza, Gaza, and Khanyonis) have highest influence by others toward using E-banking Technology (mean 3.50, 3.40, and 3.40), whereas participants who live in Jerusalem, Ramallah, Tubas, and Jenin not influence by others in high degree toward using E-banking Technology (means 2.87, 2.93, 2.95, and 2.97).

Banks' Role: Statistical differences are found ($P< 0.01$). Participants who live in Gaza argued that Palestinian banks play significant role toward using E-banking technology (mean 33.84), whereas participants who live in Nablus, North Gaza, and Khanyonis argued that Palestinian banks do not

play any significant role toward E-banking technology (means 3.33, 3.33, and 3.12).

This refers to the nature of employees and applicability of laws and policies in each branch; some branches apply the regulations of top level management, so they play significant role in spreading E-banking services like what happened in Gaza governorate. In contrast, some employees or branches do not care about these regulations and rules, therefore, they did not apply these regulation or play significant role in spreading E-banking technology.

Intention: Statistical differences are found (P< 0.01), persons who live in Nablus, Bethlehem, Jericho, Gaza, DerAlbalah, Hebron, Qlqelyah, Ramallah have highest intention to use E-banking Technology (means 4.17 4.15, 4.06, 3.97, 3.95, 3.92, 3.93, and 3.91), whereas participants who live in Khanyonis and Tulkarm have lowest intention to use E-banking Technology (means 3.50 and 3.64).

Perceived Risk (Performance Risk, Financial Risk, Social Risk, Time Risk, Security Risk): Statistical differences are found (P< 0.01). Participants who live in Hebron have highest risk toward using E-banking Technology (mean: 3.65), where as Participants who live in Jenin have lowest risk toward using E-banking Technology (mean: 2.94)

All details about statistical differences among Governorates are found in appendix B (from table 51 to table 55).

- **Statistical Differences According to the Bank**

There are statistical differences between participants according to their banks; the results show these statistical differences as the following:

Attitude: statistical differences are found ($P < 0.05$), where the customers of Arab Bank have highest attitude toward using E-banking Technology (mean 4.34), and the customers of Investment Bank have the lowest attitude toward using E-banking Technology (mean 3.94).

Subjective Norms: statistical differences are found ($P < 0.05$), where the customers of Egyptian Arab Land Bank influence by others in high degree toward using E-banking Technology (mean: 3.57), and the customers of Jordan Kuwait Bank do not influence by others to adopt E-banking Technology (mean: 2.25).

Intention: statistical differences are found ($P < 0.01$), where the customers of Arab Bank, Bank of Palestine, Alrafah Bank, Alahli Bank of Jordan, Egyptian Arab Land Bank, and Jordan Kuwait Bank have highest Intention to use E-banking Technology (mean 4.06, 4.01, 4.08, 4.05, 4.14, and 4.63), and the customers of Investment Bank have the lowest Intention toward using E-using banking Technology (mean 3.25).

Performance Risk: statistical differences are found ($P < 0.01$).Where customers of Commercial Bank of Jordan, and Egyptian Land Arab Bank argued that E-banking systems not performing well (means 3.75, and 4.04). Whereas, customers of Alahli bank of Jordan, Alrafah bank, and Palestinian Islamic Bank argued that E-banking systems are performing well (means 2.73, 3.08, and 3.06).

There are statistical differences between participants who are using one bank and those who are using more than one bank; the differences appeared in:

Perceived Behavioral Control: statistical differences are found (P< 0.05), participants who are using more than one bank have abilities and resources to use E-banking Technology (mean 4.01) more than participants who are using only one bank (mean 3.87).

Subjective Norms: statistical differences are found (P< = 0.01). Participants who are using more than one bank influenced by others to use E-banking Technology (mean 3.04) less than participants who are using only one bank(mean 3.20).

Performance Risk: statistical differences are found (P< = 0.01). Participants who are using more than one bank argued that E-banking systems are performing well (mean: 3.18). Whereas participants who are using only one bank argued that E-banking systems are not performing well (mean: 3.37).

Actual use of Technology: statistical differences are found (P< = 0.05). Participants who are using more than one bank use are familiar with Technology (mean: 3.81) more than participants who are using only one bank (mean: 3.71).

5.4 Hypotheses Testing:

We used Linear Regression (Huang et. al., 2007, Alireza et al., 2010, Alenezi et al., 2010, and Ndubisi, 2004) to test the research hypotheses. The following tables show the hypotheses and their results:

Table 5-17(a): Results of Hypothesis Testing

Hypotheses	Beta	Type of Correlation	P-Value
H1: Perceived usefulness has positive influence on attitude to use E-banking services	.395	Positive	.000
H2: Perceived usefulness has positive influence on intention to use E-banking Services	.138	positive	.000
H3: Perceived ease of use has positive influence on perceived usefulness to use E-banking Services	.538	Positive	.000
H4: Perceived ease of use has positive influence on attitude to use E-banking Services	.247	Positive	.000
H5: Perceived ease of use has negative influence on perceived risk to use E-banking Services	-.114	Negative	.002
H6: Attitude has positive influence on intention to use E-banking Services	.391	Positive	.000
H7: Perceived behavior control has positive influence on intention to use E-banking Services	.127	Positive	.000
H8: Subjective norms has positive influence on intention to use E-banking Services	.148	Positive	.000
H9: Bank Role has a positive influence on attitude to use E-banking services	.005	Positive	.886
H10: Bank Role has a positive influence on intention to use E-banking services	.127	Positive	.000

Table 5-17(b): Results of Hypothesis Testing

Hypotheses	Beta	Type of Correlation	P-Value
H11: Perceived Risk has negative influence on attitude to use E-banking Services	-.079	Negative	.008
H12: Security Risk has negative influence on intention to use E-banking Services	-.050	Negative	.081
H13: Perceived Risk has negative influence on perceived usefulness to use E-banking Services	.019	Positive	.551
H14: Social Risk has positive influence on Subjective Norms	.208	Positive	.000
H15: Technology (Computer and Internet) usage has a positive influence on usefulness	.054	Positive	.089
H16: Technology (Computer and Internet) usage has a positive influence on ease of use	.219	Positive	.000
H17: Technology (Computer and Internet) usage has a positive influence on attitude	.083	Positive	.007
H18: Technology (Computer and Internet) usage has a positive influence on perceived behavior control	.269	Positive	.000
H19: Technology (Computer and Internet)usage has a positive influence on intention	.060	Positive	.037
H20: Technology (Computer and Internet)usage has a negative influence on perceived risk	-.072	Negative	.056

Most of hypotheses are supported and significant at 99%. In addition, these hypotheses derived from TAM, TPB, and pervious empirical studies, therefore results supporting all these models and empirical studies. All results are logical and can be adopted.

- Intention Discussion

The results of regression analysis of hypotheses show that Intention is jointly predicted by   perceived usefulness ($\beta = 0.138$, $P < 0.01$), attitude ($\beta = 0.391$, $P < 0.01$), subjective norms ($\beta = 0.148$, $P < 0.01$), perceived behavioral control ($\beta = 0.127$, $P < 0.01$), technology (Computer and Internet) usage ($\beta = 0.060$, $P < 0.01$), and banks' role ($\beta = 0.122$, $P < 0.01$). These variables together explain 45% of the variance on intention to use E-banking technology (coefficient of determination (R^2) is 0.45).

Intention to use E-banking services has a strong relationship with Attitude which is significant at 99% ($\beta = 0.391$). This indicates that attitude is the most factor influence the intention, i.e. attitude has a significant influence on person's intention to adopt the E-banking technology. Hence, **Hypothesis 6 is supported.**

Intention to use E-banking services has a relationship with perceived usefulness which is significant at 99% ($\beta = 0.138$). This indicates that perceived usefulness is an important factor which influences the intention. Hence, **Hypothesis 2 is supported.**

Intention to use E-banking services has a relationship with subjective norms which is significant at 99% ($\beta = 0.148$). This indicates that subjective norms influence the intention. Hence, **Hypothesis 8 is supported.**

Intention to use E-banking services has a relationship with perceived behavioral control which is significant at 99% ($\beta = 0.127$). This indicates

that perceived behavioral control influence person's intention to adopt E-banking technology. Hence, **Hypothesis 7 is supported.**

Intention to use E-banking services has a relationship with bank's role which is significant at 99% (β = 0.122). This indicates that bank's role influence person's intention to adopt E-banking technology. Hence, **Hypothesis 10 is supported.**

Intention has a relationship with Technology (Computer and Internet) usage which is significant at 95% (β = 0.060). Technology (Computer and Internet) usage influence person's intention to adopt E-banking technology Hence, **Hypothesis 19 is supported.**

Security risk do not significantly influence the intention to use E-banking services (β = - 0.050, P > 0.05). Hence, **Hypothesis 12 is not supported.**

- Attitude Discussion

The results of regression analysis of hypotheses show that attitude is jointly predicted by perceived usefulness (β = 0.395, P < 0.01), perceived ease of use (β = 0.247, P < 0.01), perceived risk (β = - 0.079, P < 0.01), and technology (Computer and Internet) usage (β = 0.083, P < 0.01). These variables together explain 36% of the variance on attitude to use E-banking technology (coefficient of determination (R^2) is 0.364).

Perceived usefulness significantly influence attitude (β = 0.395); this indicates that perceived usefulness is the most factor which influences attitude to adopt E-banking technology. Hence, **Hypothesis 1 is supported.**

Attitude to use E-banking has strong relationship with perceived ease of use which is significant at 99% (β = 0.247). This indicates that perceived ease of use is an important factor which influences attitude, but less than the influence of perceived usefulness. Hence, **Hypothesis 4 is supported.**

Attitude to use E-banking has a relationship with technology (Computer and Internet) usage which is significant at 99% (β = 0.083). This indicates that computer efficiency and familiarity with Internet influence person's attitude to use E-banking services. Hence, **Hypothesis 17 is supported.**

Attitude to use E-banking services has negative relationship with perceived risk which is significant at 99% (β = - 0.079). This indicates that perceived risk influence attitude negatively. Hence, **Hypothesis 11 is supported.**

Bank's role do not significantly influence attitude to use E-banking services (β = 0.005, P > 0.05). Hence, **Hypothesis 9 is not supported.**

- Subjective Norms Discussion

Based on regression analysis of hypotheses, Subjective Norms is predicted by Social risk (β = 0.208, P < 0.01) while explaining 4% of the variance on subjective norms (coefficient of determination (R^2) is 0.043).

This indicates that people are influencing by others to adopt or not E-banking services if they feel that the usage of E-banking services may cause lose of their status in the society. Hence, **Hypothesis 14 is supported.**

- Perceived Usefulness Discussion

Based on regression analysis of hypotheses, Perceived Usefulness is predicted by perceived ease of use ($\beta = 0.538$, $P < 0.01$) while explaining 29% of the variance on perceived usefulness (coefficient of determination (R^2) is 0.290).

Perceived ease of use is the most factor that influence perceived usefulness. Hence, **Hypothesis 3 is supported.**

Technology (Computer and Internet) usage do not significantly influence perceived usefulness ($\beta = 0.054$, $P > 0.05$). Hence, **Hypothesis 15 is not supported.**

Perceived risk do not significantly influence perceived usefulness ($\beta = 0.019$, $P > 0.05$). Hence, **Hypothesis 13 is not supported.**

- Perceived Ease of Use Discussion

Based on regression analysis of hypotheses, Perceived ease of use is predicted by technology (Computer and Internet) usage ($\beta = 0.219$, $P < 0.01$) while explaining 5% of the variance on perceived ease of use (coefficient of determination (R^2) is 0.048).

This indicates that People who use Internet and computers can use E-banking technology efficiently. Hence, **Hypothesis 16 is supported.**

- Perceived Behavioral Control Discussion

Based on regression analysis of hypotheses, Perceived behavioral control is predicted by technology (Computer and Internet) usage ($\beta =$

0.269, P < 0.01) while explaining 7% of the variance on perceived behavioral control (coefficient of determination (R^2) is 0.072).

This indicates that People who use Internet and computers feel that they can control the usage of E-banking technology. Hence, **Hypothesis 18 is supported.**

- Perceived Risk Discussion

The results of regression analysis of hypotheses show that perceived risk is predicted by perceived ease of use ($\beta = - 0.114$, P < 0.01) while explaining 1% of the variance on perceived risk (coefficient of determination (R^2) is 0.013).

Perceived ease of use negatively influence perceived risk toward E-banking technology ($\beta = - 0.114$). Hence, **hypothesis 5 is supported**.

Although the correlation between the technology (Computer and Internet) usage and perceived risk is negative, but it is not significant ($\beta = -0.072$, P > 0.05). Hence, **Hypothesis 20 is not supported.**

There are positive correlations between perceived risk types. All risk types are connected with each other. For example, if E-banking systems not performing well, then the time required for performing the financial transactions will increase. In addition, the lack of security will increase the financial risk. The following table shows the positive correlations between risk types as empirical study shows:

Table 5-18: Correlations among Perceived Risk Types

Risk Types	Pearson Correlation	Type of Correlation	P-value
Performance Risk & Financial Risk	0.481	Positive	0.000
Performance Risk & Social Risk	0.436	Positive	0.000
Performance Risk & Time Risk	0.519	Positive	0.000
Performance Risk & Security Risk	0.507	Positive	0.000
Financial Risk & Social Risk	0.467	Positive	0.000
Financial Risk & Time Risk	0.473	Positive	0.000
Financial Risk & Security Risk	0.561	Positive	0.000
Social Risk & Time Risk	0.532	Positive	0.000
Social Risk & Security Risk	0.474	Positive	0.000
Time Risk & Security Risk	0.589	Positive	0.000

5.5 E-banking Adoption Model in Palestine:

Based on the results of hypotheses, we can determine the E-banking adoption model in Palestine. The following table summarizes the results of hypotheses between factors:

Table 5-19: Correlations between Factors Influencing E-banking Technology

Affected / Influential	Usefulness	Ease of Use	Attitude	Behavioral Control	Subjective Norms	Intention	Perceived Risk
Usefulness			H : **			H	
Ease of Use	H : **		H : **				H
Attitude						H: **	
Behavioral Control						H	
Subjective Norms						H	
Bank's Role			H - - -			H	
Perceived Risk	H - - -		H		H** :Social risk	H - - - :security risk	
Computer & Internet Usage	H - - -	H:**	H	H:**		H	H - - -

WHERE:　H: **: Supported hypothesis with strong correlation compared with other hypotheses correlations.

H: Supported hypothesis

H - - -: Unsupported hypothesis

Depending on the previous table, **E-banking Adoption Model in Palestine is:**
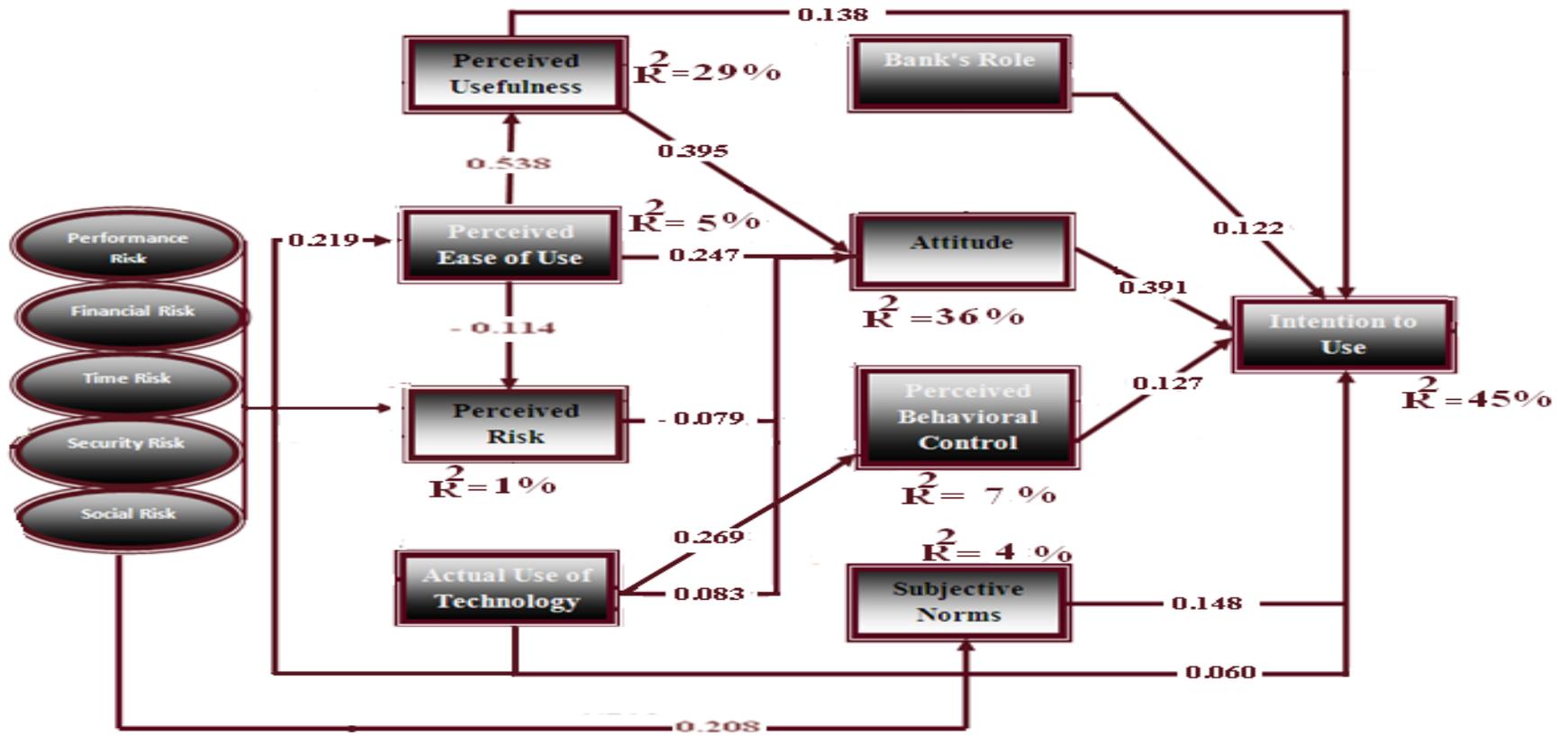
Figure 5-1: E-banking Adoption Model in Palestine

Chapter Six

Discussion & Recommendations

Chapter Six

Discussion and Recommendations

6. Discussion and Recommendations:

This chapter will present the discussion of the research results. It will explore the recommendations that are based on the research findings in order to develop and adopt E-banking technology in Palestinian banks. In addition, this chapter will present the research contribution to current literature and the suggestions of conducting future studies.

6.1 Discussion:

It appears clearly that the Palestinian Banks use E-banking Technology. This employment varies greatly between using automated teller machine (ATM) to the use of a collection of E-banking services. Internet banking in Palestinian banks is quiet limited. Palestinian banks allow customers to perform transactions that are limited to their banks, from this category only the Arab Bank is excluded. Furthermore, the research revealed that Mobile Banking Technology is not available in all Palestinian banks.

E-banking Technology is new in Palestine. Palestinian banks still working on adopting such technologies. The research also revealed that role of Palestinian banks in encouraging their customers to adopt E-banking technology is not mature yet.

It is also clearly obvious that Palestinian banks do not have clear strategies to motivate customers to adopt E-banking technology.

Hence, in order to aid banks to increase E-banking adoption by customers; it is important to identify factors that influence E-banking adoption in Palestine. Therefore we introduced Acceptance Model for E-banking Technology.

Results indicate that there are significant statistical differences between the participants. Participants have different perceptions toward E-banking technology; some of them have high intention to use E-banking technology, as well as they have low fear of the risk. Some of them have also high intention to use E-banking but they fear of this technology. Other participants do not intent to use E-banking technology. These results agree with Innovation Diffusion Theory which classifies users of technology into three parts: innovators who like to try innovations and be ready to accept risk. Early adopters who like to adopt innovations in the first stages of diffusion process. Early and late majority people, who like to accept the innovation when it becomes major.

In addition, results show that participants are familiar with technology. The use of mobile in Palestinian society is high. High usage of mobile motivates banks to implement mobile banking; in this case, people are familiar with the main tool of mobile banking and can use it efficiently.

On the other hand, results indicate that participants do not use E-banking services in high degree, especially the primary E-banking services like Internet banking. These results agree with bankers' viewpoints, as well

as support the problem area of this research. In addition, these results confirm that bankers should work to increase customers' intention to adopt E-banking services. E-banking adoption model which introduces in this research will help banks to achieve this goal.

Furthermore, Results indicate important findings concerning factors that influence E-banking technology in Palestine.

Results indicate that intention to use E-banking services is predicted by most of the factors that we used in the research model. Perceived usefulness, attitude, subjective norms, perceived behavioral control, banks' Role, and the actual use of computers and Internet are directly influencing intention to use E-banking services. While perceived ease of use and perceived risk are influencing intention to use E-banking services indirectly. These variables totally explain 45% of the variance on intention to use E-banking Technology.

These results indicate that our model is good to increase customers' intention to use E-banking technology. In addition, this result fit with the findings of other related studies; most of these related studies found similar result, as well as they used similar techniques that we used in analyzing the data. The following table shows the findings of some related studies and the analysis techniques that used in these studies.

Table 6–1: Coefficient of Determination of Intention for Related Studies

Study Title	Coefficient of Determination of Intention	Analysis Technique
Huang et. al. (2007)	49%	Regression
Alireza et al. (2010)	44.7%	Regression
ALENEZI et al. (2010)	37.3%	Regression
Ndubisi (2004)	24%	Regression
Baraghani (2007)	56%	Partial Least Square

Results of hypotheses testing determine weak and strong factors which influencing E-banking adoption. Hence, these results enable us to answer the research questions and compare our findings with other related studies as we will see in the following discussion.

Hypotheses H.1, H.2, H.3, H.4, and H.6 are derived from TAM. The result of these hypotheses indicate that intention is influenced directly by perceived usefulness and attitude in high degree, as well as attitude is influenced by perceived usefulness and perceived ease of use in high degree. In addition, perceived usefulness is influenced by perceived ease of use in high degree. It is obvious that perceived ease of use influence intention indirectly. All TAM hypotheses are supported, therefore these results agree with TAM. Besides, TAM can be considered as model for E-banking adoption in Palestine.

On the other hand, the results of H.1, H.2, H.3, H.4, and H.6 agree with the findings of related studies that used TAM as a model for

technology acceptance such as: Al Nahian et al. (2009), Pikkarainen et al. (2004), Wang et al. (2003), Suh and Han (2002), and Featherman and Pavlou (2003), and Baraghani (2007).

Hypotheses H.6, H.7, and H.8 are derived from TPB. The results of these hypotheses indicate that intention is influenced directly by attitude, subjective norms, and perceived behavioral control. All TPB hypotheses are supported, therefore, these results agree with TPB. Besides, TPB can be considered as a model for E-banking adoption in Palestine.

On the other hand, the results of H.6, H.7, and H.8 agree with the findings of related studies that used TPB to test people behaviors toward technologies such as: Tan and Teo (2000), Shih and Fang (2004), Liao et al. (1999), Schmiege et al. (2009), Huang and Chuang (2007), and Alireza et al. (2010).

In contrast, the result of hypothesis 7 which indicates that perceived behavior control influence the intention to use E-banking services does not agree with Baraghani (2007) findings. Baraghani (2007) does not find a significant correlation between perceived behavioral control and intention to use, i.e. the study of Baraghani (2007) does not support TPB, and it's just support theory of reasoned action.

Hypotheses H.5, H.11, H.12, H.13, and H.14 aim to test the correlations between perceived risk and TAM, as well as to test the correlations between perceived risk and TPB. The result of testing H.5 explains that perceived ease of use negatively influences perceived risk. This result agrees with the findings of Featherman and Pavlou

(2003).Featherman and Pavlou (2003) show that perceived ease of use influence perceived risk negatively.

The result of testing H.11 explains that perceived risk negatively influences attitude. This result agrees with the findings of several related studies such as: Schmiege et al. (2009), Huang and Chuang (2007), Lee (2009), and Alireza and Saravanan (2010). These related studies show that perceived risk influence attitude negatively.

The result of testing H.12 explains that there is negative correlation between security risk and intention, but this negative correlation is not significant. This result does not agree with Lee (2009) findings; Lee (2009) found significant correlation between security risk and intention to use.

Results indicate that intention is positively influenced by several factors (usefulness, attitude, behavioral control, subjective norms, usage of Computer and Internet and bank's role) which explain 45% of variance on intention. This significant positive effect on intention reduces the negative influence of security risk on intention. Therefore, security risk does not significantly influence intention.

Results show that security risk significantly influences attitude which influences intention in high degree. Therefore, security risk influences intention indirectly.

The result of testing H.13 explains that there is no significant correlation between perceived risk and perceived usefulness. This result does not agree with Featherman and Pavlou (2003) findings; Featherman

and Pavlou (2003) found significant correlation between perceived risk and perceived usefulness.

Perceived risk is not mutually exclusive with perceived usefulness; results show that Palestinian customers know that E-banking technology will improve their performance and it has many benefits. In contrast, results show that Palestinian customers fear of E-banking technology because it is risky. The existence of risk does not mean that E-banking technology is not useful. Therefore, there is no correlation between perceived risk and perceived usefulness.

On the other hand, perceived ease of use is influencing perceived usefulness in high degree; if people use E-banking technology well, they will recognize its usefulness regardless of perceived risk.

The result of testing H.14 explains that social risk significantly influences subjective norms. This result agrees with Lee (2009) findings; Lee (2009) found significant correlation between social risk and subjective norms.

Hypotheses H.15, H.16, H.17, H.18, H.19, and H20 aim to test the correlations between technology (Computer and Internet) usage and TAM, as well as to test the correlations between technology usage and TPB. The results of Hypotheses 16, 17, and 19 explain that technology (Computer and Internet) usage significantly influence perceived ease of use, attitude, and intention to use E-banking services. These results agree with several related studies such as: Adesina et al. (2010), Afari-Kumah and Achampong (2010), Shim et al. (2001), and Alenezi et al. (2010).

The result of hypothesis 18 indicates that technology (Computer and Internet) usage significantly influence perceived behavioral control. This result agrees with several related studies such as: Ndubisi (2004), Dillon and Morris (1996), and Green (2005).

The result of hypotheses 15 indicates that technology (Computer and Internet) usage does not significantly influence perceived usefulness. This result does not agree with Alenezi et al. (2010) findings.

Computer efficiency makes people feel that E-banking technology is easy to use and under their control rather than feel the benefits of E-banking technology. In addition, results show that perceived ease of use significantly influence perceived usefulness, therefore Computer and Internet usage influence perceived usefulness indirectly.

The result of hypotheses 20 indicates that technology (Computer and Internet) usage does not significantly influence perceived risk. This result does not agree with Liebermann and Stashevsky (2002) findings.

Perceived risk of E-banking is not mutually exclusive with Computer and Internet usage, for example, results show that customers afraid of E-banking systems because they could not perform financial transactions correctly. Then, customers' efficiency in using computers and Internet is not useful in this case.

Furthermore, computer efficiency makes people feel that E-banking technology is easy to use and under their control rather than feel that E-banking technology is free of risks. Results show that perceived ease of use

significantly influence perceived risk, therefore Computer and Internet usage influence perceived risk indirectly.

H.9 and H.10 aim to test the correlations between banks' role and TAM, as well as to test the correlations between bank's role and TPB. The result of hypothesis 10 indicates that bank's role significantly influences intention. This result agrees with kuisma (2007), Aladwani (2001), Shah and Siddiqui (2006), and Davis (1989) findings.

The result of hypotheses 9 indicates that bank's role does not significantly influence attitude. This result does not agree with Aladwani (2001) and Shah and Siddiqui (2006) findings.

As we mentioned, subjective norms has several parts; people may influence by friends, families, media, bankers, etc. to adopt E-banking technology. So bankers are part of subjective norms. TPB proved that there is no correlation between subjective norms and attitude; it just correlates subjective norms with intention to use. From this point, the result of hypothesis 9 agrees with TPB.

From these results, all factors that we used in research model are influencing intention to adopt E-banking technology in Palestine directly or/and indirectly. System features, perceptions, bank's role, familiarity with technology and perceived risk are influencing Palestinian customers to adopt E-banking technology.

Perceived usefulness, perceived ease of use, attitude, and technology (Computer and Internet) usage are the most significant factors influencing

E-banking adoption in Palestine. Whereas subjective norms, bank's role, perceived behavioral control, and perceived risk are influencing E-banking adoption in Palestine in less degree. This result answers the first research question.

Results indicate that perceived risk is significantly influencing TAM and TPB; as we mentioned, perceived risk influence TAM through attitude and influence TPB though subjective norms. Attitude and subjective norms influence intention to use E-banking services. Then, perceived risk has significant indirect role in E-banking adoption.

Bank's role has direct significant correlation with intention to use E-banking services. Therefore, bank's role has significant role in E-banking adoption.

Technology (Computer and Internet) usage influence TAM and TPB directly and indirectly; as we mentioned, Computer and Internet usage significantly influence perceived ease of use, perceived behavioral control, attitude, and intention. Therefore, Computer and Internet usage has significant role in E-banking adoption. These results answer the second research questions.

After research model is examined, new version of E-banking model is introduced which can help banks to select the right process where they can increase E-banking adoption. The emergence of TAM, TPB, perceived risk, bank's role, and technology (Computer and Internet) usage introduced acceptance Model for E-banking adoption in Palestine which is realistic,

accurate, and usable. This model will offer clear understanding and description of the factors that influence E-banking adoption in Palestine.

6.2 Recommendations:

The Banking sector in Palestine needs more effort on different areas in order to familiarize customers with E-banking Technology. Banks should work on three main fields to develop and spread E-banking technology among customers. These fields include formulating new strategies, developing the operational process, and introducing systems with high quality for E-banking services. We will discuss each field as in the following:

- **Formulation of E-banking Strategy**

We found that Palestinian banks do not have clear strategies to motivate customers to adopt E-banking technology. Also, we found that bank's role is limited in defining and offering E-banking services. It worth mentioning that formulating E-banking strategy is an important objective for banks in order to understand the bank's position and where they are heading in the future toward the objective of spreading E-banking technology in Palestine.

Formulation of strategy needs studying the internal and external factors which influence E-banking Technology. External factors contain governmental regulations, economic scale, environmental issues, etc.

Knowing the factors that influence E-banking adoption will help banks to determine and study all external factors which influence E-

banking adoption. On the other hand, this research talks about the bank's role which is an internal factor which can help banks to understand their weaknesses and strengths according to customer's viewpoints.

It is an important to establish legal, legislative, and enforcement system that protect the process of implementing E-banking strategies in Palestine.

- **Operational Process for E-banking Technology**

E-banking technology needs effort from all levels in banks; operation managers should work and cooperate with top level management to achieve the following issues:

1. Banks should increase their role to achieve high adoption of E-banking as results show. Banks should have:

   ➢ Good customer services

   ➢ Simplified and integrated basic services

   ➢ Easier to purchase than competitors

   ➢ Richness of website contents

   ➢ Fast respond to customer service

   ➢ Rapid delivery of service

   ➢ 24 h / 7 days availability of services

2. Banks should explain to their customers that E-banking technology does not have high risk to make customers feel more secure. As well as banks should introduce guarantees for customers, like compensate customers if any one looses his/her money while accessing E-banking systems.

3. Banks should work to change people's culture toward E-banking technology; especially the use of technology is increasing in Palestine. Banks can achieve this purpose by seminars, media, advertising, incentives, newsletters, emails, etc.

4. Banks should emphasis on young customers, limited income customers, and uneducated customers, beside their interest on owners of capital. In addition, banks should have interest in females through giving them information and knowledge to use E-banking services, where results show that the attitude of females toward E-banking technology less than males.

5. Banks should emphasis on Internet banking and phone banking services; these services have the lowest adoption in Palestine.

6. Palestinian banks should adopt all E-banking services; it is notable from the research that the banks which introducing all E-banking services have the largest market share like Arab bank.

7. Banks should corporate with Internet companies in Palestine to increase the use of Internet which will increase E-banking usage. The benefits of using technology should be clear to older people;

results show that older people are not using technology in high degree.

8.   Banks should change the attitude and intention of customers in Tulkarm, KhanYounis, and NorthGaza governorates toward adopting E-banking technology; these governorates have lowest attitude and intention toward E-banking.

9.   Banks should emphasis on customers in Hebron to explain that E-banking systems do not have high risk and give customers guarantees about their money. This governorate has the highest risk toward E-banking technology.

10.   Banks should spread E-banking culture in Salfeet, because it has the lowest usage of E-banking services.

11.   Banks should reduce E-banking fees; participants argued that E-banking services cost more than traditional services. In addition banks should encourage their customers to adopt E-banking technology by introducing discounts and incentives.

12.   Banks should coordinate with social organizations to make customers listen to success stories in E-banking services. In this way, customers can recognize the usefulness of E-banking technology.

13.   Banks should implement clear marketing strategy to spread E-banking services among people. Customers need more information

and knowledge about this technology. Banks should encourage their customers to use E-banking technology through advertising.

It is an important to establish legal, legislative, and enforcement system that enforces banks' employees to carry out all instructions and laws which is related to E-banking services. Reward and punishment policy should be implemented.

- **Technical process for E-banking Technology**

Banks should pay more attention to technical issues beside operational issues. Research results indicate that perceived risk and perceived ease of use are influenced the adoption of E-banking technology. Based on these findings, banks should work on creating E-banking systems which are:

➢ Free of risks, secure, reliable, available all the time with high speed, accessible from anywhere, and achieve the privacy for customers.

➢ User-friendly, simple, support Arabic Language, free of effort, not requiring special software to be installed on computers of customers, and free of errors.

Banks should reduce customer's perceived risk by working on the following technical areas:

1. Banks should keep E-banking servers up all the time. Results indicate that 75% of participants argued that E-banking systems are not performing well. Therefore, banks should have backup servers;

if a malfunction occurs in the main server, there must be alternative to perform the same functions.

2. Palestinian Banks could cooperate with Palestine Telecommunications Company (Paltel), Ministry of Telecommunication and Information Technology, and Palestinian Monetary Authority (PMA), to speed up Internet connections. Participants perceive E-banking as a slow services.

3. Banks should offer trial systems to familiarize customers with E-banking technology. Training reduces customers' fear of committing errors.

4. Banks should Use advanced technologies for authentication process like Eye Print. For example, Eye Print can be used in ATMs to verify customers.

5. Banks should establish comprehensive security system to protect E-banking servers from viruses and hackers. Security systems should be announced to all customers to trust E-banking technology.

- **Other Recommendations**

1. PMA should work on legislating and enforcing regulations and laws regarding the application of E-banking technologies for both banks and customers in Palestine.

2.   Efforts aiming in promoting telecommunication and information sector in Palestine should be accompanied by legal framework to regulate relations between the various stakeholders and people.

3.   Intensify efforts that aim toward increasing Palestinian society awareness and understanding regarding Information Technology tools and innovations like E-banking Technology.

4.   Encourage banking sector employees to participate in local, regional and international workshops and events in the field of E-banking technology.

5.   Palestinian national authority and donors have to increase funds and resources allocated to develop Palestinian ICT sector and other technological innovations like E-banking technology.

6.3 Research Contribution:

The results of this research are of great importance to researchers, Palestinian banks, and PMA in that it could develop E-banking technology in Palestine from many aspects. Therefore, this research is considered to be a significant contribution in many areas such as Information Technology adoption, these contributions are:

1.   Gives a clear assessment for E-banking services in Palestine.

2.   Document current usage of E-banking technology, mobile, Internet and computer by banks' customers in Palestine.

3. Gives a clear understating of banks' customers perceptions and awareness toward E-banking technology in Palestine.

4. Understand the acceptance behavior toward E-banking technology

5. Determine factors influencing E-banking adoption in Palestine.

6. Introduce E-banking Adoption Model in Palestine can effectively improve the rate of usage.

7. Confirm Technology Acceptance Model and Theory of planed Behavior.

8. Help Palestinian banks in formulating the right strategies which will make E-banking Technology adopted in Palestine.

6.4 Future Studies:

The following topics could be studied in the future, which may contribute in development of E-banking technology in Palestine:

1. Studying the Adoption of E-banking by Palestinian Firms.

2. Study specific types of E-banking services, especially Internet Banking.

3. Study the possibility of applying mobile banking in Palestine.

4. Study the Role of PMA, Ministry of telecommunications and information technology, Palestine Telecommunications Company

SPSS V. 17 was used to analyse the collected data and to examine factors influencing Customers' Adoption of E-banking Technology in Palestine. Various statistical processes were employed such as frequency, means, percentages, in order to answer and test the research questions and hypotheses.

Perceived usefulness, perceived ease of use, attitude, and Computer and Internet usage are the most significant factors influencing E-banking adoption in Palestine. Whereas subjective norms, bank's role, perceived behavioral control, and perceived risk are influencing E-banking adoption in Palestine in less degree

Based on the research findings, Palestinian banks should work on formulating new strategies, developing their operational process, introduce services with high quality, and coordinate with other entities such as PMA, government, ICT companies that would be helpful in achieving customer's trust.

References

Adesina A., & Ayo C., K.: "*An Empirical Investigation of the Level of Users' Acceptance of E-Banking in Nigeria*", **Journal of Internet Banking and Commerce**, 15, 1, 2010/ 1-13

Afari-Kumah, E., & Achampong, A., K.: **"*Modeling computer usage intentions of tertiary students in a developing country through the Technology Acceptance Model*", International Journal of Education and Development using Information and Communication Technology**, 6, 1, 2010.

Ajzen, I.: "*The Theory of Planned Behaviour*", **Organizational Behavior and Human Decision Processes**, 50, 2, 1991/ 179-211.

Akinyele S.T., & olorunleke K.: "*Technology and Services Quality in the banking Industry: an Empirical Study of various factors in Electronic banking Services*", **International business management**, 1993-5250, 2010/ 209 -221

Al Markaz for Development and Marketing Consultancies. **Market Demand Assessment for E- Banking Services in Palestine**. Ramallah – Palestine. 2009.

Al Nahian, R., Shahriar Md. A., & Nayeema, I.: "*The Adoption of E-banking in Developing Countries: A Theoretical Model for SMEs*", **International Review of Business Research Papers,** *5, 6, 2009/212-230.*

Aladwani, M. A.: "*Online banking: a field study of drivers, development challenges, and expectations*", **International Journal of Information Management**, 21, 2001/213-225.

Alenezi, A., R., Abdulkarim, A., & Veloo, A.: " *an empirical investigation into the role of enjoyment, computer anxiety, computer self-efficacy and Internet experience in influencing the students' intention to use E-learning: A case study from Saudi Arabian governmental universities"*, **TOJET: The Turkish Online Journal of Educational Technology**, 9, 4, 2010/22-34.

Alhamadni, M., Aljaderi, A., Qandelji, A., Bani Hani, A., & Abu zeneh, F.: **Research Methodology: First Book: The basics of scientific research**. 1st Edition, Amman. Amman Arab University for Graduate Studies.2006.

Alireza A.,Yap V. C., & Saravanan M.:"*Preparation of Measurement Tools of the Effective Factors for the Acceptance of Online Stock Trading*", **European Journal of Economics, Finance and Administrative Sciences** , 1450-2275, 19 ,2010.

American Association for Public Opinion Research *(*AAPOR), American Marketing Association (AMA). Sample Size Calculator. http://www.surveysystem.com/sscalc.htm

Andam, Z., R.: e-Commerce and e-Business. http://www.apdip.net/publications/iespprimers/eprimer-ecom.pdf

ASAL Technologies. Clients. http://www.asaltech.com/web/main.php?id=3

Ayo, C. K, 2Adewoye J. O, & 1Oni A. A.: "*The State of e-Banking Implementation in Nigeria: A Post-Consolidation Review*", **Journal of Emerging Trends in Economics and Management Sciences (JETEMS),** 1, 1, 2010/37-45

Bank Negara Malaysia. Payment Systems in Malaysia. http://www.bnm.gov.my/microsites/payment/0104_types.htm

Baraghani, S., N.: **Factors Influencing the Adoption of Internet Banking** (Unpublished Master's Thesis). Lulea university of Technology. Sweden.2007

Brogdon, C.:Banking and the Internet: Past, present and possibilities. ftp://reports.stanford.edu/pub/gio/CS545/CS545I-2000/banking.html

Calisir , F., & Gumussoy, A. C.: "*Internet banking versus other banking channels: Young consumers' view*", **International Journal of Information Management,** 28,2008 /215– 221.

Centeno C.:"*Adoption of Internet services in the acceding and Candidate Countries, lessons the Internet banking case*", **Journal of Telematics and Informatics**, 21, 4, 2004/293 – 315

Chellappa, R. & Pavlou, P.A.: "*Perceived Information Security, financial Liability, and Consumer Trust in Electronic Commerce Transactions*", **Journal of logistics information management, special Issue on Information security**, 11, 5, 2002

Cheng, T.C. E., Lam, Y.C. D., & Yeung, C.L. A.:"*Adoption of Internet Banking: An Empirical Study in Hong Kong*", **Journal Decision Support Systems**, 42, 3, 2006/1558-1572

Comptroller of the Currency Administrator of National Banks (CCANB). **Internet Banking,** Washington.1999.

Comptroller of the Currency Administrator of National Banks (CCANB). **Internet banking: developments and prospects**,Washington.2002.

Corbetta, P.: **Social Research Theory, Methods and Techniques**. London: SAGE Publications. 2003.

Creswell, J. W. **Research Design: Qualitative, Quantitative and Mixed Method Approaches.** 2nd Edition. Calefornia: Sage Publications.2003.

Dane, F.: **Research Methods**. Cambridge: Thomas Brooks. 1990.

Daniel, E.: "*Provision of electronic banking in the UK and the Republic of Ireland*", **International Journal of Bank Marketing**, 17, 2, 1999/ 72 – 82.

Davis, F. D., "*Perceived usefulness, perceived ease of use, and user acceptance of information technology*", **MIS Quarterly,** 13, 3, 1989/319-340.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R.: "*User acceptance of computer technology: a comparison of two theoretical models*", **Management Science**, 35, 8, 1989/ 982-1003

DeCoster, J.: Data Analysis in SPSS. http://www.stat-help.com/notes.html

Dillon, A., & Morris, M.: User acceptance of information technology: theories and models. http://www.ischool.utexas.edu/~adillon/BookChapters/User%20acceptance.htm

Family Health International (FHI). **Qualitative Research Methods: A Data Collector's Field Guide**. USA- North Carolina.2005

Featherman, M. S., & Pavlou, P. A.:"*Predicting E-services Adoption: A Perceived Risk Facets Perspective*", **International Journal of Human-Computer Studies**, 59, 4, 2003/451-474.

Federal Reserve Bank of New Yourk. **Lending in emerging markets: foreign and domestic banks compared.**NewYourk .1999

Fink, D., & Jaruwachirathanakul, B.: "*Internet banking adoption strategies for a developing country: the case of Thailand*", **Internet Research**, 25, 3, 2005/295 – 311.

FNB Brochure: "*Electronic banking features and Functions*", **International Article,** 23, 2001

Forsythe, S. M., & Shi, B.:"*Consumer patronage and risk perceptions in Internet shopping*", *Journal* of **Business Research**, 56, 2003/867–75.

Gebauer, J., Kline, M., D., & He L.: "*Password Security Risk versus Effort: An Exploratory Study on User-Perceived Risk and the*

*Intention to Use Online Applications***, Journal of Information Systems Applied Research**, 4, 2, 2011/52-62

Green, F. R. I.: **The emancipatory potential of a new information system and its effect on technology** (Unpublished Master's Thesis). University of Pretoria. South Africa. 2005

Haghighi, M., Divandari, A., Keimasi, & M.: "*The impact of 3D e-readiness on e-banking development in Iran: A fuzzy AHP analysis*", **international Journal of Expert Systems with Applications** ,37,2010 /4084–4093.

Hair, J., F., Anderson, R.E. Tatham, L. & Black, W.: **Multivariate Data Analysis**. 5th Edition. Prentice Hall.2003

Huang, E., & Chuang M. H.: "*Extending the theory of planned behaviour as a model to explain post-merger employee behaviour of IS use*", **journal Computers in Human Behavior**, 23, 2007/240–257.

Huang, E., & Chuang, M. H.: "*Extending the theory of planned behavior as a model to explain post-merger employee behavior of IS use*", **Computers in Human Behavior**, 23, 2007/ 240–257.

IT Specialist in Palestinian Banks (IT Bankers), Ramallah – Palestine, 05-1-2011

Jackson, P.: **Desk Research**. London: Kegan-Paul. 1994.

Jayawardhena, C. & Foley, P.: "*Changes in the banking sector – the case of Internet banking in the UK*", **Journal of Internet research:**

Electronic Networking Application and policy, 10, 1, 2000/ 19-30.

Jesu´ S Marti´Nez-Fri´ Centre for Astrobiology. **The importance of ICTs for Developing countries**. Madrid.2003

Kalakota and Whinston: "*Electronic commerece: building blocks of new business opportunity*", **journal of organizational Computing and Electronic Commerece**, 6, 1, 1996/ 1-10

Karjaluoto, H.: *Measuring attitudes toward Internet banking: Emprical evidence from Finlad*, **proceedings of the European Marketing Academy Conference**. Bergen. Norway, May 8-11, 2001.

Khalfan, M. Sh, AlRefaei, S.Y. Y., & Al-Hajery, M. : "*Factors influencing the adoption of Internet banking in Oman: a descriptive case study analysis*", **International Journal of Financial Services Management**,1, 2-3, 2006/155-172.

Khan, S.: **Adoption Issues of Internet banking in Pakistani's Firms** (Unpublished Master's Thesis). Lulea university of Technology. Sweden.2009

Kuisma, T., Laukkanen, T., & Hiltunen, M.: "*Mapping the reasons for resistance to Internet banking: a means-end approach*", **Int J Inform Manage**, 27,2, 2007/75–85.

kuisma,T., Laukkanen, T., & Hiltunen, M.: "*Mapping the reasons for resistance to Internet banking: A means-end approach*",

international journal of information management, 27,2007/ 75-85.

Kvale, D.: **Interviews**. London: SAGE Publications.1996.

Lallmahamood M.: "*An Examination of Individual's Perceived Security and Privacy of the Internet in Malaysia and the Influence of This on Their Intention to Use E-Commerce: Using An Extension of the Technology Acceptance Model*", **Journal of Internet Banking and Commerce**,*12, 3,2007/2-26.*

Laudon, D.P. & Laudon, J.P.: **Business Information System: A Problem SolvingApproach**. New York, HBJ, College Publishers. 1991

Laukkanen, T., Sinkkonen, S., & Laukkanen,P.: "*Communication strategies to overcome functional and psychological resistance to Internet banking*" , **International Journal of Information Management**, 29, 2009/11-118.

Lee M-C: "*Factors influencing the adoption of Internet banking: An integration of TAM and TPB with perceived risk and perceived benefit*", **Electronic Commerce Research and Applications,** doi:10.1016/j.elerap.2008.11.006,2009.

Liao, S., Shao, Y.P, Wang, H. & Chen, A.: "*the adoption of virtual banking: an empirical study*", **International Journal of Information Management**, 19, 1, 1999/63 – 74.

Liebermann Y., & Stashevsky S.: *"Perceived risks as barriers to Internet and e-commerce usage"*, **Qualitative Market Research: an International Journal**, 5, 4, 2002 /291-300.

Lippert, K. S., & Govindarajulu, C.: "*Technological, Organizational, and Environmental Antecedents to Web Services Adoption*", **Communications of the IIMA**, 6, 1, 2006/146 – 158.

Mattila, M., karjaluoto, H., & Pento, T.: "*Internet Bnaking Adoption Among Mature Customers: early majority or laggards?*" **Jornal of Services Marketing**, 17, 5,2003/ 514-528.

Miles, et al: **Qualitative Data Analysis: a source Book of New Methods**. London: sage Publications.1994.

Ministry of Telecom & Information Technology .Licensed companies for 2011. http://www.pmtit.ps/ar/index.php?p=main&id=743

Ministry of Telecom & Information Technology. **National Strategy for Information Technology, Telecommunication, and Mail in Palestine**. Ramallah – Palestine. 2011

Natarajan,T., Balasubramanian S. A., & Manickavasagam S., "*Customer's Choice amongst Self Service Technology (SST) Channels in Retail Banking: A Study Using Analytical Hierarchy Process (AHP)*", **Journal of Internet Banking and Commerce**, *15, 2, 2010.*

Ndubisi, N., Oly: Factors influencing e-learning adoption intention: Examining the determinant structure of the decomposed theory of

planned behaviour constructs.
http://www.herdsa.org.au/conference2004/Contributions/RPapers/P057-jt.pdf

Olatokun, M.,Wole, I., & Joyce, L.: "*The Adoption of Automatic Teller Machines in Nigeria: An Application of the Theory of Diffusion of Innovation*", **Issues in Informing Science and Information Technology**, 6 ,2009/ 373 – 393.

Padachi, K., Rojid, S., & Seetanah B.: "*investigating into the factors that influence the adoption of Internet Banking in Mauritius*", **Journal of Internet Business**, 5, 2008/99-120

Palestine Cellular Communications Co. (Jawwal). Business – Services. http://www.jawwal.ps./business/cat_services.php?langid=2

Palestine Monetary Authority (PMA). Main page. http://www.pma.ps/

Palestinian Banks' Customers (Banks' Customers), Ramallah - Palestine, 10 – 20 / 01 / 2011.

Palestinian Central Bureau of Statistics**. Comparative Report on Families and Individuals Access to Information Technology and Communication in the Palestinian Territories 2000-2009.** Ramallah – Palestine. 2010.

Paltel Corporation. Business Services.
http://www.paltel.ps/index.php?lang=en&page=F1136677126

Patton, M.: **Qualitative Evaluation and Research Methods.** London : Sage Publications. 1990.

Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahnila, S.: "*Customer Acceptance of online banking: an extension of the technology acceptance model*", **Internet research**, 14, 3, 2004/224 – 235.

Polit, D., & Hungler, B.: **Essentials of Nursing Research: Methods and Application**. J.B. Lippincott Co., Philadelphia.1985.

Rogers, E.M.,: **Diffusion of Innovations**. NY, Collier Macmillan. 1983.

Rogers, E.M.,: **Diffusion of Innovations**. The Free Press. 4th Edition. NY, Collier Macmillan. 1995.

Rui, G.: **Information Systems Innovation Adoption among Organizations – a Match – Based framework and Empirical Studies** (Unpublished Doctoral Thesis). National University of Singapore. Singapore.2007.

Safeena, R., Date, H., & Kammani, A.: *"Internet Banking Adoption in an Emerging Economy: Indian Consumer's Perspective"*, **International Arab Journal of e-Technology**, 2, 1, 2011/ 56-64

Sathye, M.: "*Adoption of Internet banking by Australian consumers: an empirical investigation*", **International Journal of Bank marketing**, 17, 7, 1999/324 - 334

Saunders, M., Lewis, P. & Thornhill, A.: **Research Methods for business students.** 2nd Edition. Essex: Pearson Educations.2000

Schmiege, S. J., Bryan A, & Klein W. M. P.: "*Distinctions Between Worry and Perceived Risk in the Context of the Theory of Planned Behavior*", **Journal of Applied Social Psychology**, 39, 1, 2009/ 95–119.

Shah, H. M., & Siddiqui A. F.: "*Organizational critical success factors in adoption of e-banking at the Woolwich bank*", **International Journal of information management**, 26, 2006/442-456

Shih, Y., & Fang, K.: "*The use of a decomposed theory of planned behavior to study Internet banking in Taiwan*", **Internet Research: Electron. Netw. Appl. Policy,** 14, 3, 2004/213-223.

Shim S., Eastlick, M. A., Lotz, L. S., Warrington, P.: "*An online prepurchase intentions model: The role of intention to search*", **Journal of Retailing**, 77, 2001/397–416.

Shumaila Y., John P, & Gordon F.:"*Multi-dimensional role of trust in Internet banking adoption*", **The Service Industries Journal**, 29, 5, 2009/591–605

Sohail, M. S., & Shanmugham, B.: "*E-banking and customer preferences in Malaysia:an empirical investigation*", **Information Sciences- Informatics and Computer Science. An international Journal**, 150, 3-4, 2003/ 207-217

Suh, B. & Han, L.: "*Effect of Trust on customer acceptance of Internet Banking*", **Electronic Commerce Research and Application**", 1, 2002/297 – 363.

Sulaiman, A., Jaafar, N. I., & Mohezar, S.: "*An overview of mobile banking adoption among the urban community*", **Int. J. Mobile Communications**, *5, 2, 2007/157 – 168*

Tan, M., & Teo, T. S.H.: "*Factors Influencing the Adoption of Internet Banking*", **Journal of the Association for Information Systems**, 1, 1, 2000.

Tan, M., & Teo, T: "*Factors Influencing the Adoption of Internet Banking*", **Journal of the association for information system**, 1, 5, 2000.

Taylor, s., & Todd, P.A.: "*Understanding information technology usage: a test of competing Models*", **Information system research**, 6, 2, 1995/144 – 176.

The Huntington National Bank. PC Banking.
https://www.huntington.com/pas/HNB1270.htm

Tornatzky, L. G., & Fleischer, M.: **The Process of Technology Innovation**. Lexington: Lexington Books.1990

Toufaily, E., & Daghfous, N.: "*the Adoption of "E-Banking" by Lebanese Banks: Success and Critical Factors*", **International Journal of E-Services and Mobile Applications (IJESMA),** 1, 1, 2009/67-93

Trochim, W. M.: Deductive and Inductive Thinking.
http://www.socialresearchmethods.net/kb/dedind.php

Venkatesh, V. & Davis, F.D.: "*A theoretical extension of the technology acceptance model: four longitudinal field studies*", **Management Science**, 46, 2, 2000/186-204.

Walker, R. H., Craig-Lees, M., Hecker, R., & Francis, H.:"*Technology-enabled service delivery: an investigation of reasons affecting customers adoption and rejection*", **International Journal of service Industry management**, 13, 1, 2002/91 – 106.

Wang Y., Wang Y, Lin H, &Tang T.: "*Determinants of use acceptance of Internet banking: and empirical study*", **Int. J. Service. Ind. Manage**, 24, 5, 2003/501-5019

Wataniya Mobile. Products and Services. http://www.wataniya-palestine.com/Business/Services/?PageID=151&TemplateID=25

World Bank, D.C. **Internet security and financial services**. Washington. 2001

Yang, J., Whitefield, M., & Boehme, K.: (2007) *" New issues and challenges facing e-banking in rural areas: an empirical study "*, **Int. J. Electronic Finance**, 1, 3, 2007/ 275-292

Yang, Y.: *The security of electronic banking*, **presented at the national information systems security conference.** U.S.A.1997.

Yin, R.K.: **Case Study Research-Design and Methods**. 2nd Edition. Thousand Oaks, CA: sage publications.1994.

Yiu ,C. Sh., Grant, K., & Edgar, D.: "***Factors affecting the adoption of Internet Banking in hong kong – implications for the banking sector***", **international national Journal of information management** ,27 ,2007/336-351.

Appendices

Appendix A: Personal Information Figures
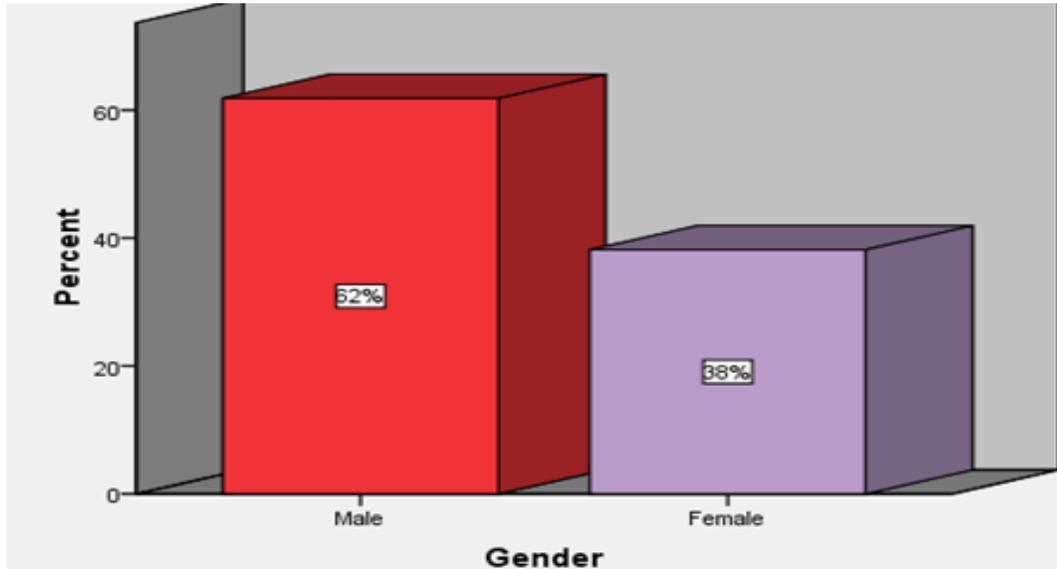
Figure1: Distribution of Gender
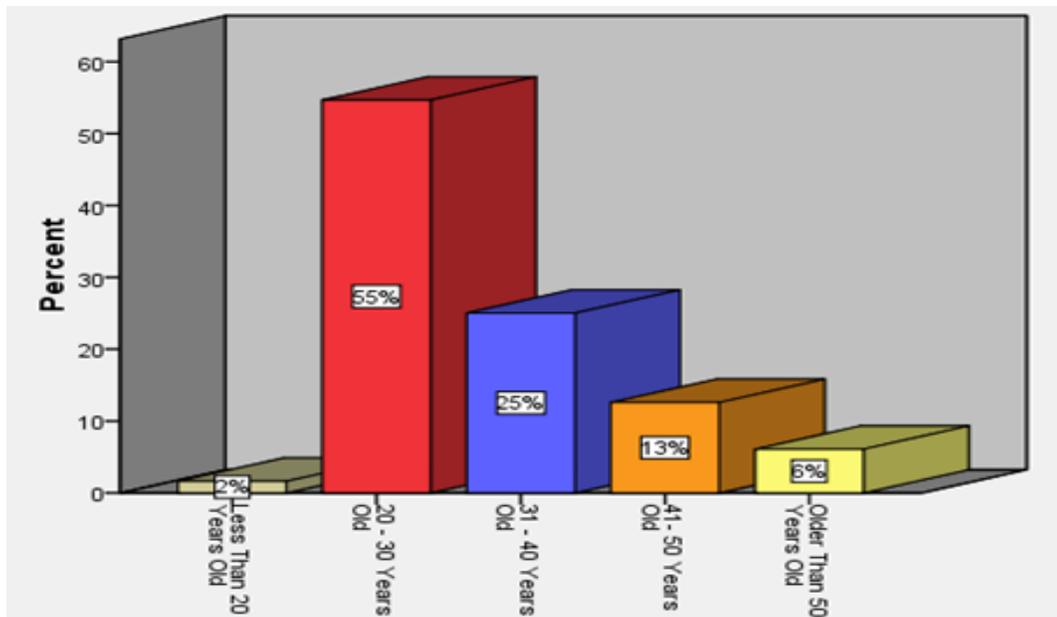
Figure 2: Distribution of Ages
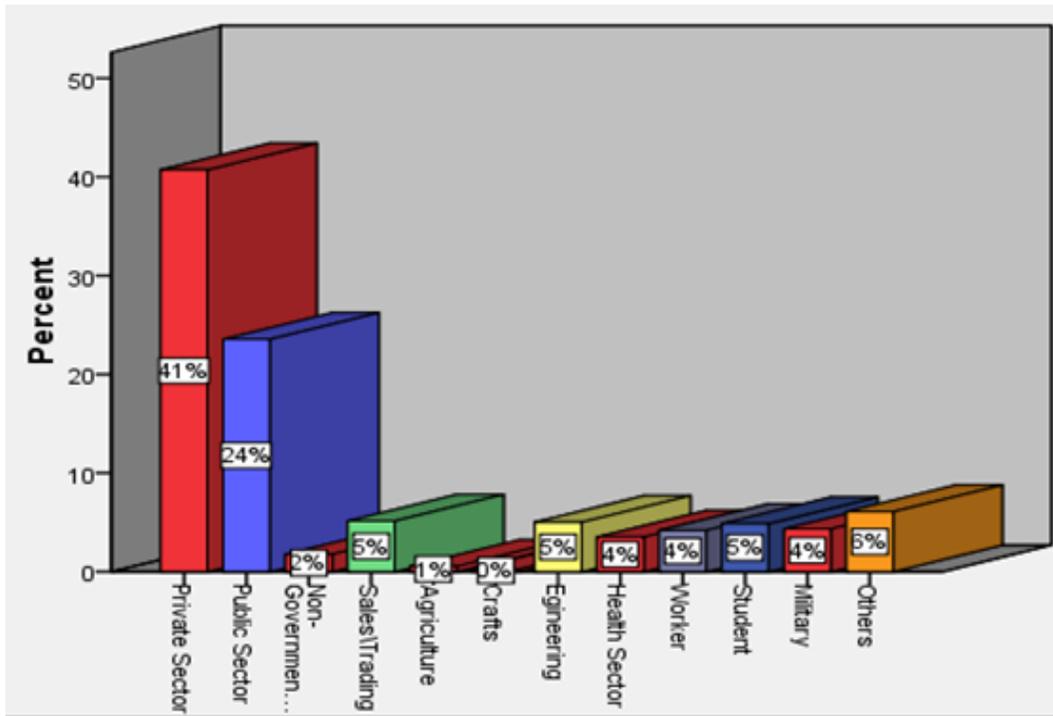
Figure 3: Distribution of Occupations
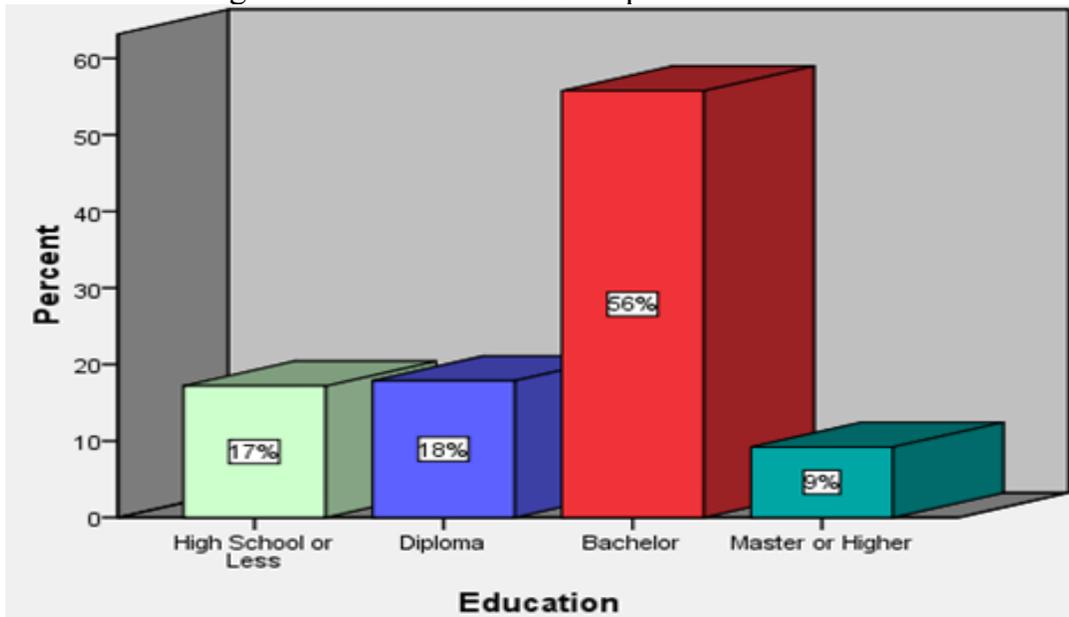
Figure 4: Distribution of Educational levels
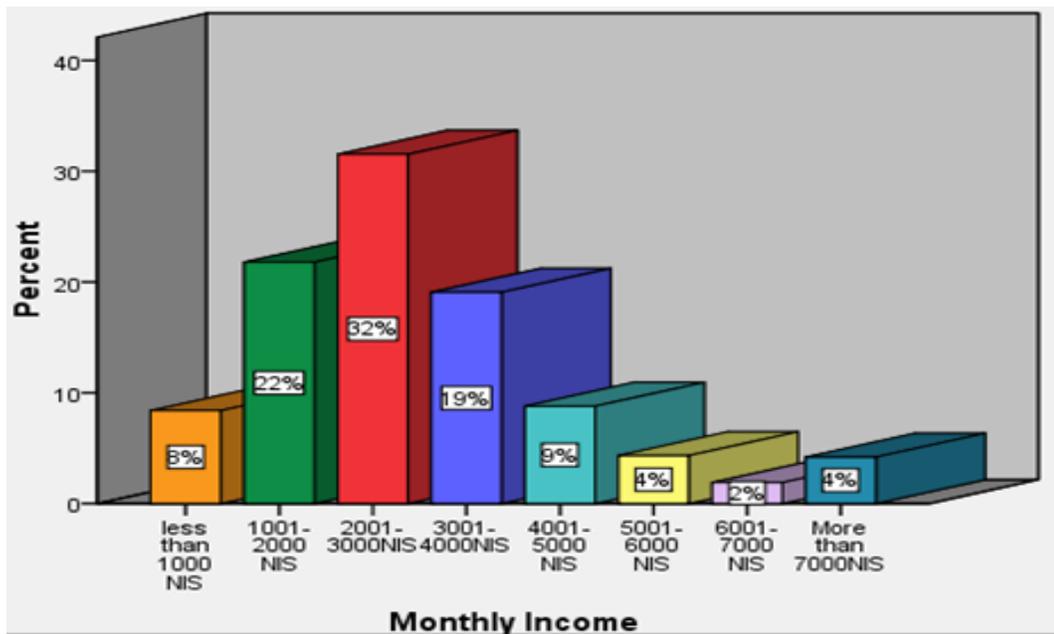
Figure 5: Distribution of Monthly Income
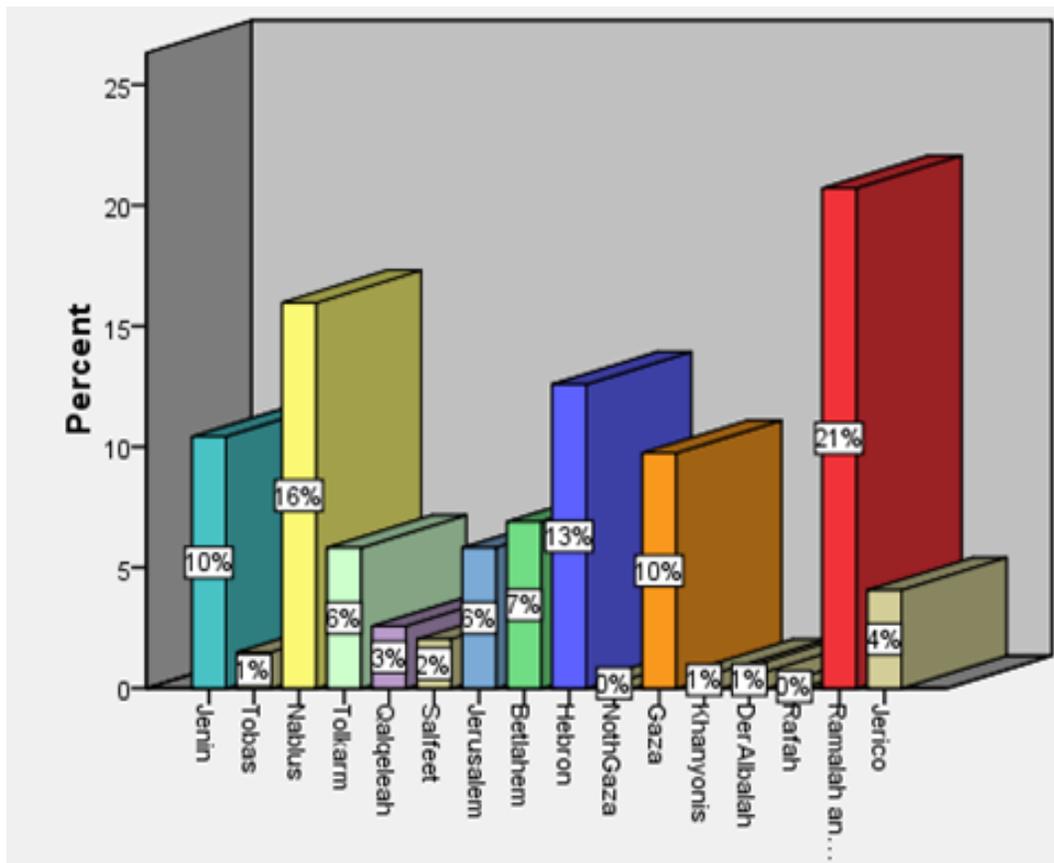
Figure 6: Distribution of Governorates

Appendix B: Tables

Table 1 : Using E-banking system improves my performance of banking activities					
		Frequency	**Percent**	**Percent**	**Cumulative Percent**
	Strongly Disagree	2	.3	.3	.3
	Disagree	12	1.6	1.6	1.9
	Natural	41	5.5	5.5	7.4
	Agree	371	50.2	50.2	57.6
	Strongly Agree	313	42.4	42.4	100.0
	Total	739	100.0	100.0	

Table2: Using E-banking system enables me to accomplish banking activities more quickly					
		Frequency	**Percent**	**Percent**	**Cumulative Percent**
	Disagree	14	1.9	1.9	1.9
	Natural	30	4.1	4.1	6.0
	Agree	335	45.3	45.3	51.3
	Strongly Agree	360	48.7	48.7	100.0
	Total	739	100.0	100.0	

Table3: Using E-banking system would increase the quality or output of banking transactions					
		Frequency	**Percent**	**Percent**	**Cumulative Percent**
	Strongly Disagree	1	.1	.1	.1
	Disagree	13	1.8	1.8	1.9
	Natural	73	9.9	9.9	11.8
	Agree	378	51.2	51.2	62.9
	Strongly Agree	274	37.1	37.1	100.0
	Total	739	100.0	100.0	

Table 4: Overall, I find E-banking system is useful for my banking activities					
		Frequency	**Percent**	**Percent**	**Cumulative Percent**
	Strongly Disagree	3	.4	.4	.4
	Disagree	14	1.9	1.9	2.3
	Natural	53	7.2	7.2	9.5
	Agree	376	50.9	50.9	60.4
	Strongly Agree	293	39.6	39.6	100.0
	Total	739	100.0	100.0	

Table5: It is easy to use the E-banking system					
		Frequency	**Percent**	**Percent**	**Cumulative Percent**
	Strongly Disagree	4	.5	.5	.5
	Disagree	37	5.0	5.0	5.5
	Natural	103	13.9	13.9	19.5
	Agree	363	49.1	49.1	68.6
	Strongly Agree	232	31.4	31.4	100.0
	Total	739	100.0	100.0	

Table6: Interaction with E-banking does not require a lot of mental effort					
		Frequency	**Percent**	**Percent**	**Cumulative Percent**
	Strongly Disagree	6	.8	.8	.8
	Disagree	48	6.5	6.5	7.3
	Natural	89	12.0	12.0	19.4
	Agree	352	47.6	47.6	67.0
	Strongly Agree	244	33.0	33.0	100.0
	Total	739	100.0	100.0	

Table 7: My interaction with E-banking is clear and understandable					
		Frequency	**Percent**	**Percent**	**Cumulative Percent**
	Strongly Disagree	7	.9	.9	.9
	Disagree	65	8.8	8.8	9.7
	Natural	134	18.1	18.1	27.9
	Agree	349	47.2	47.2	75.1
	Strongly Agree	184	24.9	24.9	100.0
	Total	739	100.0	100.0	

Table 8 : E-banking system is flexible to interact with					
		Frequency	**Percent**	**Percent**	**Cumulative Percent**
	Strongly Disagree	13	1.8	1.8	1.8
	Disagree	61	8.3	8.3	10.0
	Natural	153	20.7	20.7	30.7
	Agree	342	46.3	46.3	77.0
	Strongly Agree	170	23.0	23.0	100.0
	Total	739	100.0	100.0	

Table 9 : I think using E-baking is a good and effective idea					
		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	5	.7	.7	.7
	Disagree	11	1.5	1.5	2.2
	Natural	50	6.8	6.8	8.9
	Agree	349	47.2	47.2	56.2
	Strongly Agree	324	43.8	43.8	100.0
	Total	739	100.0	100.0	

Table 10: I think these days; using E-banking for financial transactions is a necessity					
		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	7	.9	.9	.9
	Disagree	16	2.2	2.2	3.1
	Natural	65	8.8	8.8	11.9
	Agree	282	38.2	38.2	50.1
	Strongly Agree	369	49.9	49.9	100.0
	Total	739	100.0	100.0	

Table 11: Conducting E-banking is interesting and exciting for me					
		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	12	1.6	1.6	1.6
	Disagree	32	4.3	4.3	6.0
	Natural	92	12.4	12.4	18.4
	Agree	337	45.6	45.6	64.0
	Strongly Agree	266	36.0	36.0	100.0

Table 12: Overall, I am willing to use the E-banking					
		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	5	.7	.7	.7
	Disagree	26	3.5	3.5	4.2
	Natural	77	10.4	10.4	14.6
	Agree	355	48.0	48.0	62.7
	Strongly Agree	276	37.3	37.3	100.0
	Total	739	100.0	100.0	

Table 13: I would be able to operate E-banking system		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	3	.4	.4	.4
	Disagree	48	6.5	6.5	6.9
	Natural	87	11.8	11.8	18.7
	Agree	326	44.1	44.1	62.8
	Strongly Agree	275	37.2	37.2	100.0
	Total	739	100.0	100.0	

Table 14: I have the resources and knowledge to use the E-banking system		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	6	.8	.8	.8
	Disagree	51	6.9	6.9	7.7
	Natural	106	14.3	14.3	22.1
	Agree	337	45.6	45.6	67.7
	Strongly Agree	239	32.3	32.3	100.0
	Total	739	100.0	100.0	

Table 15: I have enough knowledge and information to use E-banking system		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	7	.9	.9	.9
	Disagree	82	11.1	11.1	12.0
	Natural	106	14.3	14.3	26.4
	Agree	321	43.4	43.4	69.8
	Strongly Agree	223	30.2	30.2	100.0
	Total	739	100.0	100.0	

Table 16: Overall, using the E-banking system would be entirely within my control		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	19	2.6	2.6	2.6
	Disagree	71	9.6	9.6	12.2
	Natural	183	24.8	24.8	36.9
	Agree	298	40.3	40.3	77.3
	Strongly Agree	168	22.7	22.7	100.0
	Total	739	100.0	100.0	

Table 17: People who are important to me may think that I should use the E-banking Technology		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	19	2.6	2.6	2.6
	Disagree	90	12.2	12.2	14.7
	Natural	211	28.6	28.6	43.3
	Agree	285	38.6	38.6	81.9
	Strongly Agree	134	18.1	18.1	100.0
	Total	739	100.0	100.0	

Table 18: My decision to adopt E-banking is influenced by my friends		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	99	13.4	13.4	13.4
	Disagree	287	38.8	38.8	52.2
	Natural	159	21.5	21.5	73.7
	Agree	129	17.5	17.5	91.2
	Strongly Agree	65	8.8	8.8	100.0
	Total	739	100.0	100.0	

Table 19: My decision to adopt E-banking is influenced by my family		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	90	12.2	12.2	12.2
	Disagree	281	38.0	38.0	50.2
	Natural	140	18.9	18.9	69.1
	Agree	156	21.1	21.1	90.3
	Strongly Agree	72	9.7	9.7	100.0
	Total	739	100.0	100.0	

Table20: My decision to adopt E-banking is influenced by Media		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	25	3.4	3.4	3.4
	Disagree	118	16.0	16.0	19.4
	Natural	201	27.2	27.2	46.5
	Agree	298	40.3	40.3	86.9
	Strongly Agree	97	13.1	13.1	100.0
	Total	739	100.0	100.0	

Table 21: E-banking interfaces support Arabic language		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	26	3.5	3.5	3.5
	Disagree	89	12.0	12.0	15.6
	Natural	169	22.9	22.9	38.4
	Agree	293	39.6	39.6	78.1
	Strongly Agree	162	21.9	21.9	100.0

Table 22: All banking transaction can be done through E-banking technology without vesting banks' branches		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	39	5.3	5.3	5.3
	Disagree	175	23.7	23.7	29.0
	Natural	143	19.4	19.4	48.3
	Agree	244	33.0	33.0	81.3
	Strongly Agree	138	18.7	18.7	100.0
	Total	739	100.0	100.0	
	Total	739	100.0	100.0	

Table 23: Banks encourage me to use E-banking technology through advertising		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	20	2.7	2.7	2.7
	Disagree	80	10.8	10.8	13.5
	Natural	132	17.9	17.9	31.4
	Agree	339	45.9	45.9	77.3
	Strongly Agree	168	22.7	22.7	100.0

Table 24: Banks motivate me to use E-banking technology through incentives and discounts		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	41	5.5	5.5	5.5
	Disagree	124	16.8	16.8	22.3
	Natural	166	22.5	22.5	44.8
	Agree	279	37.8	37.8	82.5
	Strongly Agree	129	17.5	17.5	100.0
	Total	739	100.0	100.0	

Table 27: The benefits of using E-banking system are apparent to me				
Table 25: Banks' employees explain their E-banking services to banks' customers				
		Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Disagree	44	6.0	6.0	6.0
	Disagree	127	17.2	17.2	23.1
	Natural	151	20.4	20.4	43.6
	Agree	298	40.3	40.3	83.9
	Strongly Agree	119	16.1	16.1	100.0

Table 26: I Intend to use or continue to use E-banking within near future				
		Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Disagree	7	.9	.9	.9
	Disagree	26	3.5	3.5	4.5
	Natural	108	14.6	14.6	19.1
	Agree	399	54.0	54.0	73.1
	Strongly Agree	199	26.9	26.9	100.0
	Total	739	100.0	100.0	
		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	10	1.4	1.4	1.4
	Disagree	18	2.4	2.4	3.8
	Natural	76	10.3	10.3	14.1
	Agree	420	56.8	56.8	70.9
	Strongly Agree	215	29.1	29.1	100.0
	Total	739	100.0	100.0	

Table 28: I seek to use new technological innovations like E-banking				
		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	11	1.5	1.5	1.5
	Disagree	36	4.9	4.9	6.4
	Natural	91	12.3	12.3	18.7
	Agree	382	51.7	51.7	70.4
	Strongly Agree	219	29.6	29.6	100.0
	Total	739	100.0	100.0	

Table 29: I believe that E-banking transactions will become an obligation in near future				
		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	25	3.4	3.4	3.4
	Disagree	94	12.7	12.7	16.1
	Natural	184	24.9	24.9	41.0
	Agree	259	35.0	35.0	76.0
	Strongly Agree	177	24.0	24.0	100.0

Table 30: E-banking system may not perform well because E-banking servers are being down or in maintenance				
		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	12	1.6	1.6	1.6
	Disagree	70	9.5	9.5	11.1
	Natural	113	15.3	15.3	26.4
	Agree	352	47.6	47.6	74.0
	Strongly Agree	192	26.0	26.0	100.0
	Total	739	100.0	100.0	

Table 31: E-banking servers may process banking activates incorrectly				
		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	40	5.4	5.4	5.4
	Disagree	310	41.9	41.9	47.4
	Natural	176	23.8	23.8	71.2
	Agree	159	21.5	21.5	92.7
	Strongly Agree	54	7.3	7.3	100.0
	Total	739	100.0	100.0	

Table 32:E-banking system may not be available all the time				
		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	31	4.2	4.2	4.2
	Disagree	196	26.5	26.5	30.7
	Natural	167	22.6	22.6	53.3
	Agree	257	34.8	34.8	88.1
	Strongly Agree	88	11.9	11.9	100.0
	Total	739	100.0	100.0	

Table 33: E-banking may not perform Well because E-banking channels are slow		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	23	3.1	3.1	3.1
	Disagree	191	25.8	25.8	29.0
	Natural	215	29.1	29.1	58.1
	Agree	243	32.9	32.9	90.9
	Strongly Agree	67	9.1	9.1	100.0
	Total	739	100.0	100.0	

table 34: I fear to make mistakes in E-banking system (e.g wrong transferring process)		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	30	4.1	4.1	4.1
	Disagree	201	27.2	27.2	31.3
	Natural	134	18.1	18.1	49.4
	Agree	264	35.7	35.7	85.1
	Strongly Agree	110	14.9	14.9	100.0
	Total	739	100.0	100.0	

Table 35: I fear that E-banking services may cost me more than traditional services		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	30	4.1	4.1	4.1
	Disagree	165	22.3	22.3	26.4
	Natural	217	29.4	29.4	55.8
	Agree	243	32.9	32.9	88.6
	Strongly Agree	84	11.4	11.4	100.0
	Total	739	100.0	100.0	

Table 36: I fear to lose my E-banking card (e.g ATM) and my account password is disclosed to a third party		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	32	4.3	4.3	4.3
	Disagree	191	25.8	25.8	30.2
	Natural	120	16.2	16.2	46.4
	Agree	267	36.1	36.1	82.5
	Strongly Agree	129	17.5	17.5	100.0
	Total	739	100.0	100.0	

Table 37: When transaction errors occur while using E-banking system, I worry that I can not get compensation from bank		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	33	4.5	4.5	4.5
	Disagree	134	18.1	18.1	22.6
	Natural	107	14.5	14.5	37.1
	Agree	297	40.2	40.2	77.3
	Strongly Agree	168	22.7	22.7	100.0
	Total	739	100.0	100.0	

Table 38: When my electronic account incurs fraud or being hacked , I will have potential lose of status in the society		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	96	13.0	13.0	13.0
	Disagree	280	37.9	37.9	50.9
	Natural	136	18.4	18.4	69.3
	Agree	141	19.1	19.1	88.4
	Strongly Agree	86	11.6	11.6	100.0
	Total	739	100.0	100.0	

Table 39: I am sure, if I decide to use E-banking, and something went wrong with electronic transactions, people would think less of me		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	87	11.8	11.8	11.8
	Disagree	249	33.7	33.7	45.5
	Natural	138	18.7	18.7	64.1
	Agree	182	24.6	24.6	88.8
	Strongly Agree	83	11.2	11.2	100.0

Table 40: E-banking does not agree with people cultures and behaviors		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	18	2.4	2.4	2.4
	Disagree	115	15.6	15.6	18.0
	Natural	128	17.3	17.3	35.3
	Agree	307	41.5	41.5	76.9
	Strongly Agree	171	23.1	23.1	100.0
	Total	739	100.0	100.0	

Table 41: Overall, People may regard E-banking usage is a risk may lead to lost their money

		Frequency	Percent	Valid Percent	Cumulative Percent
	Strongly Disagree	19	2.6	2.6	2.6
	Disagree	163	22.1	22.1	24.6
	Natural	172	23.3	23.3	47.9
	Agree	269	36.4	36.4	84.3
	Strongly Agree	116	15.7	15.7	100.0
	Total	739	100.0	100.0	

Table 42: Fixing payments errors that may occur on E-banking applications needs a lot of time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	13	1.8	1.8	1.8
	Disagree	181	24.5	24.5	26.3
	Natural	215	29.1	29.1	55.3
	Agree	245	33.2	33.2	88.5
	Strongly Agree	85	11.5	11.5	100.0
	Total	739	100.0	100.0	

Table 43: learning how to use E-banking system may take me lots of time

		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	40	5.4	5.4	5.4
	Disagree	332	44.9	44.9	50.3
	Natural	141	19.1	19.1	69.4
	Agree	168	22.7	22.7	92.2
	Strongly Agree	58	7.8	7.8	100.0
	Total	739	100.0	5.4	5.4

Table 44: Waiting E-banking system to be available may take a lot of time

		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	24	3.2	3.2	3.2
	Disagree	276	37.3	37.3	40.6
	Natural	155	21.0	21.0	61.6
	Agree	216	29.2	29.2	90.8
	Strongly Agree	68	9.2	9.2	100.0
	Total	739	100.0	100.0	

Table 45: Overall, Performing banking activities among E-banking system may take a lot of time				
		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	52	7.0	7.0	7.0
	Disagree	310	41.9	41.9	49.0
	Natural	142	19.2	19.2	68.2
	Agree	168	22.7	22.7	90.9
	Strongly Agree	67	9.1	9.1	100.0
	Total	739	100.0	100.0	

Table 46: I would not feel secure sending sensitive information across the E-banking system				
		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	36	4.9	4.9	4.9
	Disagree	223	30.2	30.2	35.0
	Natural	163	22.1	22.1	57.1
	Agree	241	32.6	32.6	89.7
	Strongly Agree	76	10.3	10.3	100.0
	Total	739	100.0	100.0	

Table 47: I am worried to use E-banking system because other people may be able to access my account				
		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	53	7.2	7.2	7.2
	Disagree	256	34.6	34.6	41.8
	Natural	130	17.6	17.6	59.4
	Agree	223	30.2	30.2	89.6
	Strongly Agree	77	10.4	10.4	100.0
	Total	739	100.0	100.0	

Table 48: E-Banking system might be at risk of viruses attack or hackers				
		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	38	5.1	5.1	5.1
	Disagree	126	17.1	17.1	22.2
	Natural	145	19.6	19.6	41.8
	Agree	317	42.9	42.9	84.7
	Strongly Agree	113	15.3	15.3	100.0
	Total	739	100.0	100.0	

Table 49: while accessing E-banking, banks may not authenticate my username and password in accurate manner					
		Frequency	Percent	Percent	Cumulative Percent
	Strongly Disagree	79	10.7	10.7	10.7
	Disagree	257	34.8	34.8	45.5
	Natural	121	16.4	16.4	61.8
	Agree	187	25.3	25.3	87.1
	Strongly Agree	95	12.9	12.9	100.0
	Total	739	100.0	100.0	

Table 50: statistical differences among participants according to their gender

	Gender	N	Mean	Std. Deviation	Std. Error Mean
PERCIEVED USEFULNESS	Male	457	4.35	.567	.027
	Female	282	4.24	.536	.032
PERCIEVED EASE OF USE	Male	457	4.00	.697	.033
	Female	282	3.85	.757	.045
PERCIEVED BEVARIORAL CONTROL	Male	457	4.02	.759	.035
	Female	282	3.81	.760	.045
SOCIAL RISK	Male	457	3.24	.835	.039
	Female	282	3.11	.856	.051

Independent Samples Test				
		t-test for Equality of Means		
		t	df	Sig. (2-tailed)
PERCIEVED USEFULNESS	Equal variances assumed	2.580	737	.010
PERCIEVED EASE OF USE	Equal variances assumed	2.695	737	.007
PERCIEVED BEVARIORAL CONTROL	Equal variances assumed	3.616	737	.000
SOCIAL RISK	Equal variances assumed	2.138	737	.033

Table 51: statistical differences among participants according to their governorate (attitude)

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Maxi
						Lower Bound	Upper Bound		
ATTITU DE	Jenin	77	4.19	.609	.069	4.06	4.33	2	5
	Tobas	11	4.07	.929	.280	3.44	4.69	2	5
	Nablus	118	4.42	.578	.053	4.32	4.53	3	5
	Tolkarm	43	3.96	.834	.127	3.70	4.22	2	5
	Qalqeleah	19	4.14	.723	.166	3.80	4.49	3	5
	Salfeet	15	4.17	.540	.139	3.87	4.47	3	5
	Jerusalem	43	4.29	.638	.097	4.09	4.49	2	5
	Betlahem	51	4.28	.549	.077	4.12	4.43	3	5
	Hebron	93	4.15	.588	.061	4.03	4.27	3	5
	NothGaza	3	3.92	.764	.441	2.02	5.81	3	5
	Gaza	72	4.23	.664	.078	4.08	4.39	2	5
	Khanyonis	5	3.40	.945	.423	2.23	4.57	2	5
	DerAlbalah	5	4.30	.411	.184	3.79	4.81	4	5
	Rafah	1	5.00	.	.	.	.	5	5
	Ramalah and Berih	153	4.23	.592	.048	4.14	4.33	2	5
	Jerico	30	4.39	.652	.119	4.15	4.64	3	5

Table 52: Statistical differences among participants according to their governorate (perceived risk)

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
PERCIEVED RISK	Jenin	77	2.94	.561	.064	2.82	3.07	2	4
	Tobas	11	3.18	.566	.171	2.80	3.56	3	4
	Nablus	118	3.13	.628	.058	3.01	3.24	2	5
	Tolkarm	43	3.13	.532	.081	2.97	3.30	2	4
	Qalqeleah	19	3.19	.506	.116	2.95	3.44	2	4
	Salfeet	15	3.24	.531	.137	2.95	3.54	2	4
	Jerusalem	43	3.14	.552	.084	2.97	3.31	2	4
	Betlahem	51	3.15	.848	.119	2.91	3.39	1	4
	Hebron	93	3.65	.682	.071	3.51	3.79	2	5
	NothGaza	3	3.00	.835	.482	.93	5.07	2	4
	Gaza	72	3.17	.710	.084	3.00	3.34	2	5
	Khanyonis	5	3.06	.702	.314	2.19	3.93	2	4
	DerAlbalah	5	3.27	.327	.146	2.86	3.68	3	4
	Rafah	1	4.90	.	.	.	.	5	5
	Ramalah and Berih	153	3.17	.646	.052	3.07	3.28	2	5
	Jerico	30	3.13	.717	.131	2.87	3.40	2	5

Table 53: Statistical differences among participants according to their governorate (bank's role)

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
BANK'S ROLE	Jenin	77	3.49	.611	.070	3.35	3.62	2	5
	Tobas	11	3.53	.887	.267	2.93	4.12	2	5
	Nablus	118	3.33	.889	.082	3.16	3.49	1	5
	Tolkarm	43	3.46	.702	.107	3.24	3.68	2	5
	Qalqeleah	19	3.62	.763	.175	3.25	3.99	2	5
	Salfeet	15	3.57	.654	.169	3.21	3.94	3	5
	Jerusalem	43	3.47	.682	.104	3.26	3.68	2	5
	Betlahem	51	3.45	.922	.129	3.19	3.71	1	5
	Hebron	93	3.58	.718	.074	3.44	3.73	2	5
	NothGaza	3	3.33	1.137	.657	.51	6.16	2	5
	Gaza	72	3.84	.691	.081	3.68	4.00	2	5
	Khanyonis	5	3.12	.965	.432	1.92	4.32	2	4
	DerAlbalah	5	3.64	.767	.343	2.69	4.59	3	5
	Rafah	1	5.00	.	.	.	.	5	5
	Ramalah and Berih	153	3.52	.707	.057	3.41	3.64	2	5
	Jerico	30	3.76	.764	.139	3.47	4.05	2	5

Table 54: Statistical differences among participants according to their governorate (subjective norms)

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
SUBJECTIVE NORMS	Jenin	77	2.97	.655	.075	2.82	3.12	2	5
	Tobas	11	2.95	.697	.210	2.49	3.42	2	4
	Nablus	118	3.22	.908	.084	3.05	3.38	1	5
	Tolkarm	43	3.22	.808	.123	2.97	3.47	2	5
	Qalqeleah	19	3.26	.724	.166	2.91	3.61	2	5
	Salfeet	15	3.10	.925	.239	2.59	3.61	2	5
	Jerusalem	43	2.87	.804	.123	2.62	3.12	1	5
	Betlahem	51	3.07	.900	.126	2.82	3.33	1	5
	Hebron	93	3.25	.842	.087	3.07	3.42	2	5
	NothGaza	3	3.50	.661	.382	1.86	5.14	3	4
	Gaza	72	3.40	.861	.102	3.20	3.61	1	5
	Khanyonis	5	3.40	1.154	.516	1.97	4.83	2	5
	DerAlbalah	5	3.00	.586	.262	2.27	3.73	3	4
	Rafah	1	5.00	.	.	.	.	5	5
	Ramalah and Berih	153	2.93	.728	.059	2.81	3.05	1	5
	Jerico	30	3.22	.776	.142	2.93	3.51	2	5

Table 55: Statistical differences among participants according to their governorate (intention)

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min	Max
						Lower Bound	Upper Bound		
INTENTION	Jenin	77	3.81	.576	.066	3.67	3.94	2	5
	Tobas	11	3.82	.881	.266	3.23	4.41	2	5
	Nablus	118	4.17	.642	.059	4.06	4.29	2	5
	Tolkarm	43	3.64	.785	.120	3.40	3.88	2	5
	Qalqeleah	19	3.93	.799	.183	3.55	4.32	3	5
	Salfeet	15	3.83	.666	.172	3.46	4.20	3	5
	Jerusalem	43	3.85	.754	.115	3.62	4.09	2	5
	Betlahem	51	4.15	.600	.084	3.98	4.32	3	5
	Hebron	93	3.92	.603	.063	3.80	4.05	2	5
	NothGaza	3	3.83	.144	.083	3.47	4.19	4	4
	Gaza	72	3.97	.683	.081	3.80	4.13	2	5
	Khanyonis	5	3.50	.919	.411	2.36	4.64	2	4
	DerAlbalah	5	3.95	.411	.184	3.44	4.46	4	5
	Rafah	1	5.00	.	.	.	.	5	5
	Ramalah and Berih	153	3.91	.676	.055	3.80	4.01	1	5
	Jerico	30	4.06	.485	.089	3.88	4.24	3	5

ANOVA			
		F	Sig.
ATTITUDE	Between Groups	2.396	.002
PERCIEVED RISK	Between Groups	4.579	.000
BANK'S ROLE	Between Groups	2.085	.009
SUBJECTIVE NORMS	Between Groups	2.466	.002
INTENTION	Between Groups	2.660	.001

Table 56: Arbitrators and experts who reviewed the questionnaire

Name	Position	Organization Name
Mr. Murad Abu ALheja	Instructor of Statistics	Alquds Open University
Dr. Husen Hammad	Director of Opinion Polls and Survey Studies Center	Al-nahjah University
Mr. Rashad Musa	Financial Manger	Palestinian Development Fund
Mr. Fayez Aldabbas	Operations Manager	Bank of Jordan
Mr. Basem Maraqah	Information Technology Manger	Al Quads Bank
Alpha International For Research Polling and Informatics		

Appendix C: Questionnaire

Questionnaire of

E-banking Adoption Model in Palestine

Dear Sir/Mrs.

This research aims to investigate Factors Influencing Customers' Adoption of E-banking Technology in Palestine, and then introduce E-banking adoption model which can help the banking sector to spread this developed technology among Palestinian society.

E-banking is introducing banking activities and information from the bank to customers through Computers, Telephones, Internet, Mobiles, and ATMs. Therefore, E-banking technology uses electronic connection between banks and customers to perform different financial issues.

We believe that you are the best source to reach the required information, which serve our community and its development. We all hope to find cooperation from you through answering the questions contained in this survey. We pledge not to enclose the identity of participants to third party, as well as not use these information in any field except scientific research.

Best Regards,

Researcher

Part One: Personal Information

Gender: ❑ Male ❑ Female
Age: ………………………….
Occupation: ……………………..

Education: ❑ High School or Less ❑ Diploma
❑ Bachelor ❑ Master or Higher
Monthly Income: ❑ less than 1000 NIS ❑ 1001-2000 NIS
❑ 2001-3000NIS ❑ 3001-4000NIS
❑4001-5000 NIS ❑ 5001-6000 NIS
❑ 6001-7000 NIS ❑More than 7000NIS

The Governorate: ❑ Jenin ❑ Tubas ❑ Nablus ❑ Tulkarm
❑ Qalqelah ❑ Salfeet ❑ Jerusalem❑ Betlahem
❑ Hebron ❑ NothGaza ❑ Gaza ❑ Khanyonis
❑ Deralbalah ❑ Rafah
❑ Ramallah and Berih ❑ Jerico and Valleys

Part two : Technology Usage and E-banking Services

Mobile Usage**:** ❑ Daily ❑ Weekly ❑ Monthly ❑ Not Use
Computer and Internet usage: ❑ Daily ❑ Weekly ❑ Monthly
❑ Not Use
Automated Teller Machine (ATM):
❑ Use it ❑ know it but did not Use it
❑ Do not know this service
SMS Banking: ❑ Use it ❑ know it but did not Use it
❑ Do not know this service
Credit Cards (Visa Card, Master card, etc.):
❑ Use it ❑ know it but did not use it
❑ Do not know this service
Phone Banking: ❑ Use it ❑ know it but did not use it
❑ Do not know this service
Internet Banking: ❑ Use it ❑ know it but did not use it
❑ Do not know this service

Banks' names that you deal with: Main Bank [   ]
Secondary Bank [   ]

Part Three: Please select the appropriate choice that best describe your perception of E-banking

Factor		Strongly Agree	Agree	Natural	Disagree	Strongly Disagree
PU	Using E-banking system improves my performance of banking activities					
	Using E-banking system enables me to accomplish banking activities more quickly					
	Using E-banking system would increase the quality of banking transactions					
	Overall, I find E-banking system useful for my banking activities					
PEOU	It is easy to use E-banking system					
	Interaction with E-banking does not require a lot of mental effort					
	Interaction with E-banking is clear and understandable					
	Overall, E-banking system is flexible to interact with					
ATT	I think using E-baking is a good and effective idea					
	I think these days; using E-banking for financial transactions is a necessity					
	Conducting E-banking is interesting and exciting for me					
	Overall, I am willing to use E-banking system					
PBC	I would be able to operate E-banking system					
	I have the resources to use E-banking system					
	I have enough knowledge and information to use E-banking system					
	Overall, using E-banking system would be entirely within my control					
SN	People who are important to me would think that I should use E-banking Technology					
	My decision to adopt E-banking is influenced by my friends					
	My decision to adopt E-banking is influenced by my family					
	My decision to adopt E-banking is influenced by Media					

		Strongly Agree	Agree	Natural	Disagree	Strongly Disagree
BR	E-banking interfaces support Arabic Language					
	Banking activities can be done by E-banking technology without the need to visit banks' branches					
	Banks encourage me to use E-banking technology through advertising					
	Banks motivate me to use E-banking technology through incentives and discounts					
	Banks' employees explain E-banking services to banks' customers					
INT	I Intend to use or continue to use E-banking within near future					
	The benefits of using E-banking system are apparent to me					
	I seek to use new technological innovations like E-banking					
	I believe that the performance of E-banking transactions will become an obligation in near future					
PER RISK	E-banking system may not perform well because E-banking servers are being down or in maintenance					
	E-banking servers may process banking activates incorrectly					
	E-banking system may not be available all the time					
	E-banking system may not perform Well because communication channels are slow					
FIN RISK	I fear to make mistakes while using E-banking system (e.g. wrong transferring process)					
	I fear that E-banking may cost more than traditional services					
	I fear to lose the E-banking card (e.g. ATM), and my password is disclosed to a third party					
	When transaction errors occur, I worry that I cannot get compensation from banks.					
SOC RISK	When my electronic account incurs fraud or being hacked , I will have potential lose of status in the society					

		Strongly Agree	Agree	Natural	Disagree	Strongly Disagree
	I am sure that if I decide to use E-banking, and something went wrong with electronic transactions, people would think less of me					
	People culture and behaviors do not agree with E-banking					
	Overall, People consider the use of E-banking to be risky, may lead to lose their money					
TIME RISK	I would have to waste a lot of time fixing payments errors, while using E-banking system.					
	It would take me lots of time to learn how to use E-banking system.					
	E-Banking system requires a lot of time to be available for use					
	Overall, Performing banking activities by E-banking system may take a lot of time					
SEC RISK	I would not feel secure sending sensitive information across E-banking system					
	I am worried to use E-banking system because other people may be able to access my account					
	E-Banking system might be at risk of viruses attack or hackers					
	while accessing E-banking, banks may not authenticate my username and my password in accurate manner					

استبانة حول

نموذج تبني الخدمات المصرفية الالكترونية في فلسطين

الأخت الفاضلة/الأخ الفاضل

يسعى الباحث في هذه الاستبانة الى الوصــــول لنمــوذج تبنــي الخـدمات المصــرفية الالكترونية في فلسطين, من خلال التعرف على العوامل المؤثرة في تبني الخدمات المصــرفية الالكترونية لدى عملاء البنوك الفلسطينية وتحليلها والخروج بتوصيات ونتائج تســاعد القطــاع المصرفي الفلسطيني لتطوير الخدمات المصرفية الالكترونية وفهم طبيعــة عمـــلاء البنــوك و سلوكهم تجاه الخدمات المصرفية الالكترونية.

ويقصد بالخدمات المصرفية الالكترونية: اي خدمة مصــرفية يريــد عمـــلاء البنــوك الحصول عليها دون التوجه الى البنوك أو التعامل مع موظفيها, بل يمكنهم انجاز معـــاملاتهم المصرفية المختلفة من خلال التعامل مع الوسائل المصرفية الالكترونية المتعددة مثــل: نظــام الخدمات المصرفية الالكترونية عبر الانترنت, نظام الخدمات المصرفية الالكترونية عبر الهاتف النقّال, الهاتف المصرفي الالكتروني, خدمة الرسائل النصية القصيرة من خلال الهاتف النقّال للاستفسار عن الأرصدة و الحركات المصرفية المختلفة, بطاقات الائتمــان المختلفــة (مثــل الماستر كارد و الفيزا كارد ... الخ), جهاز الصراف الآلي.

وحيث نؤمن انكم خير مصدر للوصول الى المعلومات المطلوبة, و نعهد بكم الاهتمام و الاستعداد لمؤازرة الابحاث العلمية, التي تخدم مجتمعنا و تطوره. نتوجه اليكم و كلنــا امــل ان نجد التعاون من قبلكم, وذلك من خلال الاجابه على الاسئلة المحتواه في هذه الاستبانة, و التــي نتعهد لكم بالمحافظة على عدم اظهار هوية المجيب عنها, و عدم استخدامها في اي مجال غيــر مجال البحث العلمي.

و لكم جزيل الشكر و العرفان ,,,

الباحث ,,,

الجزء الأول : المعلومات الشخصية

الجنس: ☐ ذكر   ☐ أنثى

العمر : ....

الوظيفة / المهنة: ....

أعلى مؤهل علمي أنهيته بنجاح: ☐ ثانوية عامة أو أقل   ☐ دبلوم

          ☐ بكالوريوس   ☐ ماجستير فأعلى

مستوى الدخل الشهري: ☐ أقل من 1000 شيكل   ☐ 1000 – 2000 شيكل

       ☐ 3000-2001 شكل   ☐ 3001 – 4000 شيكل

       ☐ 4001 – 5000 شيكل   ☐ 5001 – 6000 شيكل

       ☐ 7000-6001 شيكل   ☐ أكثر من 7000 شيكل

المحافظة : ☐ جنين   ☐ طوباس   ☐ نابلس   ☐ طولكرم

      ☐ قلقيلية   ☐ سلفيت   ☐ القدس   ☐ بيت لحم

      ☐ الخليل   ☐ جباليا   ☐ غزة   ☐ خان يونس

      ☐ دير البلح   ☐ رفح   ☐ رام الله والبيرة ☐ أريحا والأغوار

الجزء الثاني : التكنولوجيا و الخدمات المصرفية الإلكترونية

مدى استخدام الهاتف الخلوي: ☐ يوميا ☐ أسبوعيا ☐ شهرياً   ☐ لا استخدم

مدى استخدام الحاسوب و الانترنت: ☐ يوميا ☐ أسبوعيا ☐ شهرياً   ☐ لا استخدم

استخدام خدمة الصراف الآلي:

☐ استخدمها   ☐ أعلم بها ولم استخدمها   ☐ لا أعلم بوجود هذه الخدمة

استخدام بطاقات الائتمان (ماستر كارد, فيزا كارد, الخ:

☐ استخدمها   ☐ أعلم بها ولم استخدمها   ☐ لا أعلم بوجود هذه الخدمة

استخدام خدمة الرسائل النصية القصيرة للاستعلام عن الحركات المالية:

☐ استخدمها   ☐ أعلم بها ولم استخدمها   ☐ لا أعلم بوجود هذه الخدمة

تنفيذ المعاملات المصرفية من خلال الهاتف المصرفي الالكتروني:

☐ استخدمها   ☐ أعلم بها ولم استخدمها   ☐ لا أعلم بوجود هذه الخدمة

تنفيذ المعاملات المصرفية من خلال نظام الخدمات المصرفية الالكترونية عبر الانترنت:

☐ استخدمها   ☐ أعلم بها ولم استخدمها   ☐ لا أعلم بوجود هذه الخدمة

أسماء البنوك التي تتعامل معها: البنك الرئيسي .... بنك ثانوي.............................

الجزء الثالث: أرجو اختيار الدرجة التي تتناسب مع تصوراتك للخدمات المصرفية الالكترونية

لا أوافق بشدة	لا أوافق	محايد	أوافق	أوافق بشدة		
					استخدام الخدمات المصرفية الالكترونية يحسّن أدائي في تنفيذ المعاملات المصرفية المختلفة	الفائدة
					استخدام الخدمات المصرفية الالكترونية يجعلني قادرا على انجاز المعاملات المصرفية المختلفة بسرعة أكبر	
					استخدام نظام الخدمات المصرفية الالكترونية يزيد من جودة المعاملات المصرفية المختلفة	
					بشكل عام, استخدام الخدمات المصرفية الالكترونية مفيد و ذو منفعة لأداء معاملاتي المصرفية المختلفة	
					نظام الخدمات المصرفية الالكترونية سهل الاستخدام حيث استطيع إنجاز ما أريد من خلاله	سهولة الاستخدام
					استخدام الخدمات المصرفية الإلكترونية لا يتطلب الكثير من الجهد و التفكير	
					آلية استخدام الخدمات المصرفية الالكترونية واضحة و مفهومة	
					بشكل عام, نظام الخدمات المصرفية الالكترونية مرن و غير معقد	
					أعتقد أن استخدام الخدمات المصرفية الالكترونية هو فكرة جيدة و فعّالة	الموقف
					أعتقد أن استخدام الخدمات المصرفية الالكترونية أصبح ضرورة في هذه الأيام	
					أعتقد أن استخدام الخدمات المصرفية الالكترونية جدير بالاهتمام بالنسبة لي	
					بشكل عام, أرغب في استخدام الخدمات المصرفية الالكترونية	
					املك القدرات اللازمة لاستخدام الخدمات المصرفية الالكترونية	السيطرة السلوكية
					املك الموارد و الوسائل اللازمة لاستخدام الخدمات المصرفية الالكترونية	
					املك المعرفة و المعلومات الكافية لاستخدام الخدمات المصرفية الالكترونية	
					بشكل عام, استخدام الخدمات المصرفية الالكترونية سوف يكون تحت سيطرتي بالكامل	
					الأشخاص المهمين لدي يعتقدون انه يجب عليّ استخدام الخدمات المصرفية الالكترونية	معايير ذاتية
					قراري باستخدام الخدمات المصرفية الالكترونية يتأثر برأي أصدقائي	
					قراري باستخدام الخدمات المصرفية الالكترونية يتأثر برأي عائلتي	
					قراري باستخدام الخدمات المصرفية الالكترونية يتأثر بوسائل الاعلام المختلفة	
					نظام الخدمات المصرفية الالكترونية يدعم اللغة العربية	دور البنك
					يمكن اجراء جميع المعاملات المصرفية من خلال الخدمات المصرفية الالكترونية, دون الحاجة الى زيارة فروع البنك	

لا أوافق بشدة	لا أوافق	محايد	أوافق	أوافق بشدة		
					يساهم البنك في انتشار الخدمات المصرفية الالكترونية من خلال الدعاية والاعلان	
					يقوم البنك بتحفيز العملاء لاستخدام الخدمات المصرفية الالكترونية من خلال الجوائز و خصم العمولات	
					يقوم موظفي البنك و خصوصا خدمة العملاء بتعريف الخدمات المصرفية الالكترونية و شرح كيفية استخدامها لعملاء البنك	
					أنوي استخدام أو الاستمرار في استخدام الخدمات المصرفية الالكترونية	النيّة
					أود الاستفادة من مزايا و فوائد الخدمات المصرفية الالكترونية	
					أسعى لاستخدام الابتكارات التكنولوجية الجديدة مثل الخدمات المصرفية الإلكترونية	
					أعتقد أن استخدام الخدمات المصرفية الالكترونية سوف يكون إلزاميا في المستقبل	
					قد يكون نظام الخدمات المصرفية الالكترونية معطلاً أو تحت الصيانة, لذا لا استطيع تنفيذ معاملاتي المصرفية عبر هذا النظام	خطورة الاداء
					أعتقد أن نظام الخدمات المصرفية الالكترونية لا يؤدي المعاملات المصرفية بطريقة صحيحة	
					اعتقد ان الخدمات المصرفية الالكترونية غير متوفرة للاستخدام بطريقة صحيحة طيلة الوقت(24 ساعة يوميا/7ايام بالاسبوع)	
					اعتقد ان نظام الخدمات المصرفية الالكترونية لا ينفّذ معاملاتي المصرفية بكفاءة بسبب بطء خطوط شبكة الاتصالات	
					أخشى فقدان أموالي نتيجة ارتكاب أخطاء أثناء استخدام نظام الخدمات المصرفية الالكترونية مثل تحويل مبالغ إلى رقم حساب خاطئ	الخطورة المالية
					أعتقد ان عمولة استخدام الخدمات المصرفية الالكترونية أكثر من عمولة استخدام الخدمات المصرفية التقليدية	
					أخشى فقدان بطاقتي الإلكترونية (مثل الصراف الآلي أو بطاقة الائتمان) وكشف كلمة السر الخاصة بها لطرف غير مرغوب فيه	
					أخشى أن لا يعوضني البنك اذا فقدت أموالي نتيجة اخطاء قد تحدث اثناء تنفيذ معاملاتي المالية على نظام الخدمات المصرفية الالكترونية	
					قد أفقد مكانتي بين الناس , إذا فقدت أموالي خلال استخدام الخدمات المصرفية الالكترونية	الخطورة الاجتماعية
					قد يعتبرني الناس شخص غير مسؤول وغير مبالي, إذا فقدت أموالي خلال استخدام الخدمات المصرفية الالكترونية	
					إن ثقافة الناس و سلوكهم تنسجم مع الخدمات المصرفية التقليدية أكثر من الخدمات المصرفية الالكترونية	

لا أوافق بشدة	لا أوافق	محايد	أوافق	أوافق بشدة		
					بشكل عام, افراد المجتمع يعتبرون استخدام الخدمات المصرفية الالكترونية مخاطرة قد تؤدي إلى فقدان أموالهم	
					أعتقد أن إصلاح الأخطاء التي قد تظهر في نظام الخدمات المصرفية الالكترونية يتطلب الكثير من الوقت	خطورة الوقت
					أعتقد أن تعلّم استخدام نظام الخدمات المصرفية الالكترونية يتطلب الكثير من الوقت	
					أعتقد أن نظام الخدمات المصرفية الالكترونية يتطلب الكثير من الوقت ليكون متوفرا للاستخدام	
					بشكل عام, تنفيذ المعاملات المصرفية من خلال نظام الخدمات المصرفية الالكترونية يتطلب الكثير من الوقت	
					لا أشعر بأمان اثناء إرسال معلومات مهمة و حساسة عن طريق نظام الخدمات المصرفية الالكترونية	خطورة الامان
					اعتقد أن نظام الخدمات المصرفية الالكترونية لا يوفر خصوصية للمستخدم, حيث إن معلوماتي المالية قد تكون متوفرة للآخرين	
					قد يتعرض نظام الخدمات المصرفية الالكترونية لخطر الإختراق او خطر الفيروسات ولا استطيع الوصول لحسابي الالكتروني	
					عند استخدامي الخدمات المصرفيه الالكترونيه قد لا تتاكد البنوك بطريقه دقيقه من اسم المستخدم وكلمة المرور الخاصة بي	

جامعة النجاح الوطنية

كلية الدراسات العليا

نموذج تبني الخدمات المصرفية الالكترونية في فلسطين

إعداد

أحمد حاتم خريوش

إشراف

د. بكر عبد الحق

قدمت هذه الأطروحة استكمالا" لمتطلبات درجة الماجستير فــي الإدارة الهندســية بكلية الدراسات العليا في جامعة النجاح الوطنية في نابلس، فلسطين.
2011

نموذج تبني الخدمات المصرفية الالكترونية في فلسطين

إعداد

أحمد حاتم خريوش

إشراف

د. بكر عبد الحق

الملخص

يهدف هذا البحث إلى تحديد العوامل المؤثرة في تبني الخدمات المصرفية الالكترونيـــة من خلال عملاء البنوك في فلسطين. وبالتالي تقديم نموذج تبني الخدمات المصرفية الالكترونية في فلسطين، الذي سوف يساعد القطاع المصرفي الفلسطيني على نشــر الخـــدمات المصــرفية الالكترونية في المجتمع الفلسطيني.

قام الباحث بمراجعة ما توصل إليه العلم في هذا المجال لتحديد نموذج البحث الذي هـو امتداد لنموذج قبول التكنولوجيا (TAM) ونظرية السلوك المخطـط (TPB)، بالإضــافة إلــى عوامل هامة ومؤثرة في قبول الخدمات المصرفية الالكترونية وهي: الخطــورة الناتجــة عــن استخدام الخدمات المصرفية الالكترونية والاستخدام الفعلي للتكنولوجيا (الحاســوب والانترنــت) ودور البنك في نشر الخدمات المصرفية الالكترونية.

استخدم الباحث كلا المنهجين – الكمي والنوعي – لاتمام عمله البحثي؛ حيث قام بإجراء مقابلات مع مدراء دوائر تكنولوجيا المعلومات في البنوك الفلسطينية وعدد محدد من عملاء هذه البنوك لفهم طبيعة المشكلة بشكل دقيق ومناقشة العوامل المؤثرة في تبني الخـــدمات المصــرفية الالكترونية. إضافة إلى ذلك قام الباحث باستخدام طريقة الاستبانة حيث تم تصميمها وتوزيعهـــا على كل إفراد العينة البحثية، وهي عبارة عن ألف وعشرة عملاء ممن لديهم حسابات في البنوك الفلسطينية التي تملك على الأقل خدمة مصرفية إلكترونية واحدة. وقـد أعيـدت 739 اسـتبانة مكتملة، حيث بلغت نسبة الاستجابة 73% من العينة المستهدفة.

بعد تحليل المعلومات الواردة من خلال الاستبانة عن طريق برنامج الحزم الإحصــائية للعلوم الاجتماعية (SPSS)، أظهرت النتائج أن الفائدة وسهولة الاستخدام والاتجـــاه واسـتخدام

الحاسوب و الانترنت هي العوامل الرئيسية التي تؤثر في تبني الخدمات المصرفية الالكترونيــة في فلسطين. كما بينت النتائج ان دور البنك والخطورة المتصورة والقواعد الذاتيـة والسـيطرة السلوكية جميعها تؤثر في تبني الخدمات المصرفية الالكترونية ولكن بدرجة اقل مــن العوامــل السابقة.

قام الباحث بتقديم توصيات للبنوك الفلسطينية تتعلق بصياغة استراتيجيات جديدة وتطوير عملياتها التشغيلية وتقديم خدمات ذات جودة عالية والتنسيق مع سلطة النقد الفلسطينية والحكومة وشركات نكنولوجيا المعلومات لكسب ثقة عملاء البنوك والعمل على انتشار الخدمات المصرفية الالكترونية في فلسطين.