**Deanship of Graduate Studies**

**Al-Quds University**


# Consumer Behavior Towards Introducing 3G

# The Case of Bethlehem Governorate

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**M.Sc. Thesis**

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## Thesis Approval

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**Jerusalem- Palestine**

**1440 – 2019**

## DEDICATION

This research Thesis is dedicated to our respective parents who have been the source of encouragement. They have given us the motivation and determination to achieve our objectives and ambitions.

To my dear fiancé, my life partner for your continuous and constant believes in my abilities. For standing by my side all stages, especially in the completion of this research.

**DECLERATION:**

The work contained in this Thesis has not been previously submitted for any academic degree or diploma at any higher education institution. To the best of my knowledge and belief, the thesis contains no materials previously published or written by another person except where reference is made.

Signed: Raneen

Raneen Ali Abed Rabu Yousef

Date: 9/4/2019

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**Consumer Behavior towards Introducing 3G "The Case of Bethlehem Governorate"**

**From Bethlehem District, Palestine**

**Prepared by: Raneen Ali Abed Rabu Yousef**

**Supervisor: Prof. Mahmoud El-Jafari**

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## Abstract

Considering the introduction of the third generation of mobile data service at the beginning of 2018 in the West Bank and the high penetration rates worldwide, this research investigates the factors that influence consumers' behavior towards the introduction of 3G cellular data in Bethlehem Governorate.

The research purpose is about the examination of the factors that influence consumers' usage of 3G cellular data. The research framework was based on the Theory of Planned Behavior (TPB) with the attitude, subjective norms, and perceived behavioral control factors. In addition to the extension of Technology Acceptance Model (TAM) including the perceived usefulness and perceived ease of use factors. The perceived enjoyment factor was added to the model along with the TPB and TAM in order to examine its influence on the behavioral intention to use 3G cellular data.

A simple random sampling strategy was applied where the sample size included four hundred and two (n = 402) Palestinian 3G's consumers. Targeted respondents who reside in Bethlehem Governorate include who tried either currently using 3G services throughout a questionnaire that was constructed for this purpose. Questionnaires were distributed to companies and stores' show rooms, hospitals, as

well as universities. The data was analyzed by SPSS and Structural Equation Modeling (SEM).

The results indicate that perceived behavioral control, perceived enjoyment, and subjective norms are the influential factors. Whereas, perceived usefulness, perceived ease of use and attitude are not influencing the behavioral intention to use 3G mobile data services. Based upon the research findings, business implications and marketing recommendations were placed. Recommendations include proposed procedures to the Ministry of Communication and Information Technology regarding consumers' awareness and monitoring local providers. In addition to recommendations related to market segmentation, promotion, positioning, pricing, branding, image, and advertising to local providers to improve their marketing strategies.

**Keywords**: Theory of Planned Behavior, Technology Acceptance Model, 3G mobile data services, behavioral intention to use, perceived enjoyment.

**سلوك المستهلك اتجاه تقديم خدمات الجيل الثالث "حالة تطبيقية: محافظة بيت لحم"**

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**الملخص**

بالنظر الى ادخال الجيل الثالث من خدمات البيانات الخلوية في بداية العام 2018 في الضفة الغربية، ومعدلات الانتشار العالية في جميع انحاء العالم. فإن هذا البحث يدرس العوامل المؤثرة على سلوك المستهلكين اتجاه خدمات تكنولوجيا الجيل الثالث في محافظة بيت لحم.

يهدف هذا البحث الى دراسة العوامل التي تؤثر على استخدام المستهلكين لخدمات الجيل الثالث الخلوية. ولقد استند إطار البحث إلى نظرية السلوك المخطط (TPB) مع عامل السلوك والمعايير الذاتية وعوامل التحكم السلوكية المدركة. بالإضافة إلى تمديد نموذج قبول التكنولوجيا (TAM) الذي يتضمن عامل الفائدة عامل سهولة الاستخدام المدركة. تمت إضافة عامل المتعة المدرك للنموذج إلى جانب TPB و TAM من أجل دراسة التأثير على النية السلوكية لاستخدام بيانات G3 الخلوية.

تم تطبيق الاستراتيجية العشوائية البسيطة لأخذ العينات حيث شمل حجم العينة أربعمائة اثنين من (n = 402) مستهلكين فلسطينيين لخدمات الجيل الثالث.ان المستجيبين الذين يقيمون في محافظة بيت لحم يشملون الذين جربوا او حاليا يستخدمون خدمات الجيل الثالث عبر استبيان تم إنشاؤه لهذا الغرض. وكما تم توزيع الاستبانات في المعارض الخاصة بشركات المزودين و محلات الاتصالات، بالإضافة الى الأشخاص

المتواجدين في قاعات الانتظار بالمستشفيات و الجامعات. و كذلك تم تحليل البيانات بواسطة SPSS و نموذج المعادلات الهيكلية (SEM).

تشير النتائج إلى أن عوامل التحكم السلوكية المدركة، والمتعة المدركة، والمعايير الذاتية هي العوامل المؤثرة. في حين أن الفائدة وسهولة الاستخدام المدركان والسلوك لا تؤثر على النية السلوكية لاستخدام خدمات البيانات الخلوية من الجيل الثالث. استنادًا إلى نتائج البحث ، تم وضع مضامين الأعمال و المقترحات. تشمل التوصيات الإجراءات المقترحة لوزارة الاتصالات وتكنولوجيا المعلومات فيما يتعلق بتوعية المستهلكين ومراقبة مقدمي الخدمات المحليين. بالإضافة إلى التوصيات المتعلقة بتجزئة السوق، الترويج ، المكانة الذهنية ، والتسعير ، والعلامات التجارية ، الانطباعات الذهنية ، والإعلان لمقدمي الخدمات المحليين لتحسين استراتيجيات التسويق الخاصة بهم.

## LIST OF ABBREVIATION

| ABBREVIATION | EXPLAINATION |
|---|---|
| 2.5G | The 2.5 generation of mobile communication technology |
| 2G | The second generation of Mobile communication technology |
| 3G | The third generation of Mobile communication technology |
| 4G | The fourth generation of Mobile communication technology |
| 4.5G | The 4.5 generation of Mobile communication technology |
| 5G | The fifth generation of Mobile communication technology |
| CDMA 2000 | A standard in 3G mobile telecommunication network |
| GPS | Global Positioning System |
| HSPA+ | Evolved high-speed packet access |
| ICT | Information and communication technology |
| IT | Information Technology |
| ITU | Information Telecommunication Union |
| LTE | Long-term evolution |
| TAM | Technology acceptance model |
| TPB | Theory of planned behavior |
| TRA | Theory of reasoned action |
| TD-SCDMA | Chinese home-grown standard in 3G mobile telecommunication network |
| UMTS | Universal mobile telecommunication system |
| WCDMA | Wide-Band code division multiple Access |
| WB | West Bank |
| SIM | Subscriber Identity Module |

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## Terms Translation

| CONSTRUCT | ARABIC TRANSLATION |
|---|---|
| **PERCEIVED USEFULNESS** | الفائدة المدركة |
| **PERCEIVED EASE OF USE** | سهولة الاستخدام المدركة |
| **ATTITUDE** | السلوك |
| **SUBJECTIVE NORMS** | المعايير الشخصية |
| **PERCEIVED BEHAVIORAL CONTROL** | التحكم السلوكي المدرك |
| **PERCEIVED ENJOYMENT** | المتعة المدركة |
| **BEHAVIORAL INTENTION** | النية السلوكية للاستخدام |

## Contents

# CHAPTER ONE: INTRODUCTION

## 1.0 Introduction:

Markets of mobile data have sustained high growth rates during the last decade worldwide. According to the International Telecommunications Union (ITC), mobile broadband is considered one of the most dynamic market segments; as the global penetration of mobile broadband was 47% in 2015. Recent statistics indicate that the number of mobile subscriptions exceeds the global population [ICT, 2015; Skhirtladze, 2017].

In addition, it was proven that mobile telecommunication has led to an increase in the competition in the local market among providers, due to users' demand for transmission speed and application services [Mardikyan, 2012; Gandal et al., 2003].

Mobile Telecommunication Technologies have evolved in sequential generations. The first generation was launched in the 1980's, followed by the introduction of the second generation in 1990's. 3G, which stands for the third generation of

wireless mobile telecommunication technology, was first introduced in 1998 in Japan [Gandal, et al., 2003; De Vriendt, et al., 2002].

More recently, different authors and researchers provided a definition to consumer behavior. For example, Solomon defined consumer behavior as "*the study of the processes involved when individuals or groups select, purchase, use, or dispose of products, services, ideas, or experiences to satisfy needs and desires".* [Solomon, 2017, P28]

While Schofield noted that it "*is critical to understand consumer behavior to know how potential customers will respond to a new product or service. It also helps companies identify opportunities that are not currently met*" [Schofield, 2018]

Technology is considered a powerful tool in influencing and changing consumer behavior. Consumers' expectations have changed with the introduction of mobile phones and the entry of new communication channels that enables consumers to be connected on one platform at least [Iyoob, 2017; Claveria, 2017].

The limited research regarding consumer behavior needs to be addressed to assist companies in designing and implementing marketing strategies. Thus, encouraging the use of mobile technological products and services [Song, 2010].

### 1.1 Overview about ICT sector in Palestine:

The Information and Communication Technology sector is considered the fast growing among Palestinian economic sectors. In addition telecommunications represent the largest share of the ICT sector, services provided by

telecommunication companies are fixed and mobile phone lines, Internet, and broadband services such as 3G.[1]

According to the Palestinian Information Technology Association of companies (PITA) the ICT sector contribute about 10-12% of the GDP, with a market size of $500 million, including approximately 250 ICT companies. Besides, the ICT infrastructure consists of fiber optics, symmetrical and asymmetrical DSL, Internet that is provided mainly with the backbone from Jordan, Egypt, and United Kingdom, and microwave connectivity from Israel and Jordan [PITA, 2007].

The two main enterprises in Palestine are Wataniya Mobile and Paltel Group consisting of the following subsideries: Jawwal, Hadara, Palmedia, and Reach. After 1997, PALTEL established the infrastructure and prepared the network. Currently, it covers 90% of the Palestinian areas with a full network system. After the rapid improvement in mobile technology, Jawwal Company was the first to enter the telecommunication market in 1999 followed by Wataniya Company in 2006 [Khatib, 2013]

However, the Ministry of Telecommunications and Information Technology aimed at increasing the competition in the telecommunication market by liberalization efforts, the government's network, and the academic network in order to increase the number of service providers in the local market. Nevertheless, PALTEL is monopolizing the market impeding effective competition, which results in low speeds, issues with the quality of services, connectivity reliability, and high costs [Mercy Corps, 2013]

[1] Mercy Corps, 2013

## 1.2 Problem Statement:

Smart phones are considered complementary devices that facilitate the adoption of new mobile applications such as mobile data services. It's noticeable that smart phones and mobile internet are changing our lifestyle, as mobile operators have no control over applications but rather users. Accordingly, it's essential to reveal the exact situation among consumers' behavior on 3G data services in Palestine.

However, the number of smart phone users worldwide is projected to reach 2.87 billion in 2020. Recent statistics show that 58.9% of users accessed the internet from their mobile phones in 2017 [Statista, 2014-2020].

The information technology sector is considered one of the developing economic sectors in the Middle East and North Africa. It was reported that half of the total internet connections were by smartphones by mid-2017. The Global System for Mobile Association(GSMA) expects a large shift in consumer behavior by 2030, this is due to several factors including the rise in smart phone and mobile internet adoption, affordability, and easier to access to online content [GSMA, 2017].

Meanwhile, in the West Bank and the Gaza Strip, the number of mobile phones approximates 3.5 million devices, 51 %of them are smart phones and 49 % are regular mobile phone. Furthermore, the market share for mobile devices according to operating network in the West Bank is 74 %by Jawwal Co., 15 % by Wataniya Mobile Co., and 11 % by Israeli networks. Yang claims that the penetration of mobile phone usage could be an indicator of the high potential of mobile data services in a specific country[2] [Yang, 2006].

Furthermore, according to key indicators of ICT by selected years the percentage of households with a mobile phone was 96.6 % in 2017, which creates an

[2] Concepts Company, 2016

opportunity for Jawwal and Wataniya companies to provide 3G services [PCBS, 2014].

Easy access for information through browsers and applications, instant communication tools, and saving time are the main reasons for the spread of this technology. As a point of fact, an owner of a mobile phones store in Bethlehem reported that the major usages of smart phones and 3G technologies are socialization, e-mails, and entertainment purposes[3] [Misagal, 2016].

However, the Palestinian market is suffering from strong competition from Israeli companies that provide 3G and 4G services at considerably fair prices. As stated by the Chief Executive Officer of Paltel Company that the number of Palestinian users of Israeli sim cards increased from 150 thousand in 2014 to 370 thousand in one year. In a recent report published by Reuters, it was estimated that 500 thousands pre-paid SIM cards are owned by Palestinians that connect with 3G and 4G network cell towers in Israel and in Jewish settlements. However, these services were allowed to be launched in Palestine after 10 years of negotiations with the Israeli side, which came only after Israeli Cellular providers upgraded to 4G in 2014 which consequently kept them a step ahead of the competition [Ramallah News, 2017; Aliqtisadi, 2016; Reuters, 2018].

Even though, the OSLO agreement between Palestine and Israel as stated in article 36 regarding Telecommunications, states "*The Palestinian side has the right to establish its own telecommunications policies, systems and infrastructures. The Palestinian side also has the right to choose any and all kinds of communication systems (including broadcasting systems) and technologies, suitable for its future in, inter alia, basic and value added services (including cellular telephony)"* [Israel Ministry of Foreign affairs , 1995].

[3] Mr. Al-sarafandi, owner of mobile phone store, August 2018, Bethlehem, Palestine.

However, 3G network services were first introduced in the Palestinian market in January 2018. The Ministry of Communication and Information Technology confirmed that there would be a significant decline in the prices of telecommunications in Palestine with the launch of the 3G service to equalize with other providers. In addition, it is predicted that 3G services would provide new opportunities for both private and public sectors organizations to contribute in delivering services to users through the Internet. Hence, they will minimize those provided by Israeli companies through providing satisfying alternative services.[4]

### 1.2.1 Price Gap:

The price gap represents the difference between the prices offered by the main two 3G Services providers in Palestine and the Israeli companies to individuals. This issue raised challenges for local companies to compete in order to fill this gap. The table below illustrates the offers for mobile data services by both parties whereby prices are in New Israeli Shekel (V.A.T inclusive):

Prices of mobile data services packages offered by Palestinian and Israeli companies, as of February, 2018 that was derived from each company website:

| Company Name | 3G Package | Validity | Price |
|---|---|---|---|
| **Jawwal Company (West Bank) ("Jawwal,"2018)** | 120 MB | Daily | 3.5 |
| | 200 MB | Daily | 5.8 |
| | 0.5 GB | Weekly | 11.6 |
| | 800 MB | Monthly | 17.4 |
| | 2.5 GB | Monthly | 34.8 |
| | 4.5 GB | Monthly | 58 |
| | 14 GB | Monthly | 92.8 |

[4] Radio Bethlehem 2000, 2018

| | | | |
|---|---|---|---|
| | 20 GB | Monthly | 116 |
| **Wataniya Company (West Bank) ("Wataniya,"2018)** | 0.5 GB | Weekly | 11.6 |
| | 1 GB | Monthly | 22 |
| | 3GB | Monthly | 40.6 |
| | 5GB | Monthly | 60 |
| | 10 GB | Monthly | 80 |
| **Golan Telecom (Israel) ("Golan,"2018)** | Unlimited phone calls and text messages+240 minutes International calls+ 18 GB | Monthly | 29.9 |
| | Unlimited phone calls and text messages+240 minutes International calls+ 30 GB | Monthly | 39 |
| | Unlimited phone calls and text messages+240 minutes International calls+ 40 GB | Monthly | 49 |
| **Hot Mobile (Israel) ("Hot Mobile,"2018)** | 5000 units phone calls and text messages+ 200 International calls+100 GB | Monthly | 39 |
| **Partner Communication (Israel) ("Partner,"2018)** | 5000 Minutes phone calls+5000 text messages+350 Minutes International calls+30 GB | Monthly | 59.9 |
| | 5000 Minutes phone calls+5000 text messages+700 Minutes International calls+40 GB | Monthly | 69.9 |
| | 5000 Minutes phone calls+5000 text messages+1000 Minutes International calls+45 GB | Monthly | 79.9 |
| | 5000 Minutes phone calls+5000 text messages+5000 Minutes International calls( Canada and USA)+50 GB | Monthly | 89.9 |
| **Cellcom Co.(Israel) ("Cellcom,"2018)** | 9000 Minutes phone calls+7000 text nessages+50 GB | Monthly | 59.9 |
| | 9000 Minutes phone calls+7000 text nessages+100 GB | Monthly | 69.9 |
| **Pelephone Co. (Israel) ("Pelephone,"2018)** | 5000 minutes phone calls+5000 text messages+20GB+unlimited data (Facebook, Snapchat, WhatsApp, Wiz, Instagram) | Monthly | 59.9 |
| | 5000 minutes phone calls+5000 text messages+23GB+unlimited data (Facebook, Snapchat, WhatsApp, Wiz, Instagram) | Monthly | 69.9 |
| | 5000 minutes phone calls+5000 text messages+26GB+unlimited data (Facebook, Snapchat, WhatsApp, Wiz, Instagram) | Monthly | 79.9 |

*Table 1: Price offer by Palestinian and Israeli Company as of February, 2018*

### 1.2.2 Coverage differences:

Third generation network coverage differences between the West Bank and Israel comprise a burden to adopters in selecting service providers. It is predicated to affect customers' behavior towards using 3G mobile data services. The visual representation below represents the difference between Palestinian and Israeli cell phone coverage area (Visiualizing Palestine, 2015):

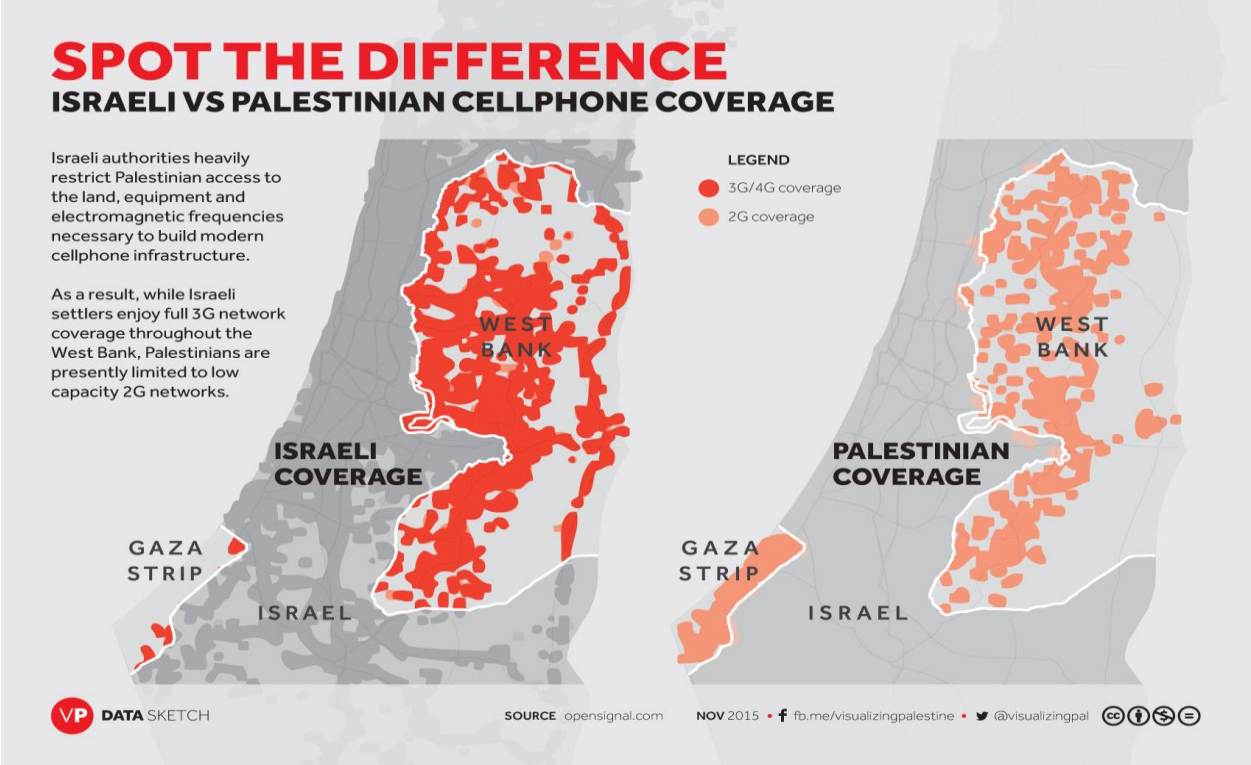



*Figure 1-Palestinian and Israeli Cellphone coverage area, Source: Visualizing Palestine*

It is important to shed some light on understanding how consumers perceive the value and cost of 3G cellular data services. That yields to expecting consumers' behavioral intention to use 3G mobile services, as 3G adoptions are in the early stage in Palestine.

## 1.3 Purpose of the Study:

### Main purpose:

The overall objective of the research is to determine the factors that affect the behavioral intention to use 3G cellular data services among Palestinian individuals.

### Specific Purposes:

This research study aims to investigate specific objectives that could achieve the overall purpose of the study. Those specific objectives are outlined as follows:

1. To determine the demographic factors that affect households' intention to adopt 3G cellular data services.
2. To examine the relationship between perceived usefulness, perceived ease of use, perceived behavioral control, attitude, perceived enjoyment, and subjective norms.
3. To determine which factors are the most influential on households when making a decision to adopt 3G cellular data services.

## 1.4 Study Questions:

In this study, the researcher addresses four main questions. The study mainly focuses on how to understand households' behavior intention towards using 3G value added mobile services. The study takes up the following area:

1. What are the major smart phone applications used by 3G users?
2. What are the services that 3G and above generations of cellular data services provide?
3. Do the available cellular data services meet consumers' needs?
4. What are the main factors that affect households' intention to use 3G value added services?

## 1.5 The significance of the study:

This study is of value for Telecommunication Companies and the Ministry of Telecommunication and Information Technology as it contributes rather valuable information and knowledge about the major factors that influence individuals' usage behavior to adopt and use 3G mobile services provided by local companies in Palestine. Additionally, this research study serves Telecommunication companies with facts about users' perceptions that would be helpful in developing and improving their marketing strategies. Furthermore, thesis findings will provide beneficial information for potential future consideration when the decision of evolving to 4G cellular data services is taken.

In addition, it contributes new findings by providing in-depth understanding on how Palestinian customers perceive usefulness, perceived ease of use, perceived behavioral control, attitude, perceived enjoyment, and subjective norms that affect their behavioral intention to use 3G mobile services.

To add, it increases Palestinians' awareness of 3G technology aspects and its features by drawing attention to major factors that affect their current and future usage decision.

# CHAPTER TWO: LITERATURE REVIEW

## 2.0 Introduction:

The previous chapter outlined the major objectives of this study. This chapter provides a background about the cellular data services and major Psychological-Social theories regarding consumer behavior, and identifies the major factors that influence the adoption intentions towards 3G mobile services. Thus, the main purpose of this chapter is to review relevant literature reviews that support the research topic.

## 2.1 Background about 3G cellular data services:

This part outlines the evolution of 3G cellular technology, technological mobile standards, and the major networks for cellular internet access, features of 3G mobile services, and the imposed restrictions that influence 3G services.

### 2.1.1 The Evolution of 3G Cellular Technology:

Cellular telecommunications dates from the 1970's; the first commercial systems were launched in the early 1980s'and since then the evolution of generations started. Data handling capabilities offered by the second generation are limited. Therefore, the need for high bit data services that supports the transmission of high quality voice, videos, images, and access for the internet have led to the evolution of the third generation [Holma&Toskala, 2004;Goodman & Myers, 2005].

The third generation comprises several cellular technological standards. The main systems for 3G that have been recognized by the International Telecommunication Union (ITU) are described as follows:

- Code Division Multiple Access CDMA2000, favored by the US.
- Wideband Code Division Multiple Accesses WCDMA. It is the basis of the Universal Mobile Telecommunications System (UMTS) which represents the main 3G air interface in the world. In addition, WCDMA has a bandwidth of 5 MHz that supports high data transfer rates and provides a better performance attributed to the diversity of the achieved broadcast frequency.
- Time-division Synchronous Code-division Multiple Access (TD-SCDMA), which is a Chinese home-grown standard [Brian, et al.,2018; Song, 2010; Holma&Toskala, 2004;De Vriendt, et al., 2002; Martinez, 2005].

### 2.1.2 Major Networks for Cellular Internet Access:

Mobile Phones, especially Smart phones could be connected to the internet using different access cellular networks, described as follows:

- General Packet Radio Service (GPRS): referred to as 2.5G. It's the slowest form of data connectivity (providing only 114kbps) and is typically used if the phone cannot find anything faster, due to the interference or location issues.
- EDGE: denoted with an "E" and is known as eGPRS and 2.5G. This connection type fills the gap between 2G (GPRS) and 3G, with theoretical speeds of 385kbps.

- 3G: stands for the third generation, which offers users double the performance of EDGE, with up to 2Mbps.
- Evolved High-Speed Packet Access (HSPA+): is the latest form of 3G mobile data technology. Depending on the different networks and devices, accessible HSPA+ speeds can either be 14.4Mbps or 21Mbps, with 42Mbps only possible for some networks.
- 4G: Also known as (LTE) long-term evolution, which is now the standard data connection type, offering up to 10 times the speed of HSPA+ (up to a maximum of 160Mbps).
- 4.5G (LTE-A): it increases data speed to 300 Mbps, and can handle more users at once.
- 5G: The next big step in data connectivity will be '5G', which will achieve mind-blowing speeds of up to 1Tbps in recent trials. That is 1000GB of data downloaded per second in 2020 [Todd, 2012].

### 2.1.3 Features of 3G Mobile Services:

Third generation networks have potential transfer speeds of up to three Mbps (about 15 seconds to download a 3-minute MP3song)

3G's high data rates allow for:

- To download information through the internet connection, sending and receiving large multimedia files.
- The accommodation of the broadband applications like video conference and receiving streaming videos from the Web.
- Sending and receiving faxes.
- Instant download for e-mail messages with attachments.
- Mobile entertainment: such as chats and games.

- A better voice call quality, ten times efficient than the second generation.
- Supporting more diverse applications, such as mobile internet, mobile TV, Global Positioning System (GPS), traffic management, shopping, and weather reports applications [Brian, et al., 2008; Velmurugan, 2014; Ribeiro, 2005; Rajput&Khurana, 2011; Axiotis, 2004].

The table below indicates the difference between 2G and 3G technology, to have a better understanding of the two types of mobile data services:

| **Criteria** | **2G** | **3G** |
|---|---|---|
| **Data Transmission** | The speed of data transmission is less than 50000 bits/sec | Faster download speed and access to data and applications. More than 4 million bits/sec |
| **Function** | Transmission of information via voice signals | Transmission of information via video conference and MMS |
| **Features** | SMS, e-mail, MMS, Internet access(partial browsing) | SMS, e-mail, MMS, Internet access, Mobile TV, Video conference, GPS |
| **Operator frequencies** | GSM: 900 MHz,1800 MHz CDMA: 800 MHz | 2100 MHz |
| **Carrier frequencies** | 200 KHz | 5 MHz |
| **Security** | Medium level | High level |
| **Calls** | Voice calls | Voice and Video calls |
| **Coverage** | Low network range | Low Network coverage |
| **Cost** | Relatively cheap | Higher fees |
| **Compatibility** | Less compatible with Smart phones | Compatible with Smart phones |
| **Internet service** | Narrowband | Broadband |

*Table 2: Difference between 2G and 3G Technology, source: www.zseries.in*

### 2.1.4 The restrictions imposed on 3G mobile services:

This part describes some restrictions that influence 3G services. Restrictions are imposed because of three main variables: terminal capabilities, user mobility, and system interoperability issues. First, the terminal capabilities affect the types of services. For example, cheap terminals will not be able to support all 3G modes which will consequently not support high data-rate applications. Secondly, user mobility influences the available services. When users are running high data-rate services and the head out of hotspot scope they may face a degradation of data rate if their current session is not satisfied by the 3G network. Finally, interoperability issues include system capacity and load balancing. A user may request a specific service; his request will be served by the available network in terms of coverage, system capacity, and load balancing [Axiotis, 2004].

In addition to the mentioned restrictions, Israel provides limited frequency spectrum to Palestinian operators. Only 9.4 paired MHz was provided to the two Palestinian operators, 4.8 MHz for Jawwal and 4.6 MHz for Wataniya, compared to 121.6 paired MHz that is allocated to five Israeli operators. This in turn affects the types of services, and determines the number of subscribers the company can deliver its services to [The World Bank Group, 2016].

Furthermore, the Palestinian market suffers from boundaries imposed by Israel. As Palestinian providers (Jawwal and Wataniya Mobile) lack the ownership for the international gateway which connects their networks directly to the rest of the world. They need to go through a registered Israeli company. In addition, there is the absence of the appropriate regulations needed to organize the telecommunication sector [The World Bank Group, 2016; Jamous et. al, 2019].

## 2.2 Theoretical Perspective:

This part demonstrates theories that are relevant to the research topic. The theories used in this study have identified key factors that influence consumers' behavioral intention to use 3G cellular data services, and provide the base in formulating an integrated model. The used theories include the theory of reasoned action, the theory of planned behavior, and the technology acceptance model. Although the unified theory of acceptance of technology model (UTAUT) and the diffusion of innovation model (DOI) are used in similar studies, but due to the popularity of TAM especially that it is considered the first most popular model in the field of IT devices and services adoption, it was accredited in this research [ Khan Arshia & Woosley John, 2011].

### 2.2.1 Theory of Reasoned Action

Fishbein and Ajzen (1975, 1980) developed the theory of Reasoned Action Model (TRA). The TRA Model states that the individual behavior is driven by behavioral intention. It is a function of attitude towards the behavior and subjective norms. The term attitude is defined as *"a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor"*. It was assumed that an individual's attitude allows for the prediction of his/her behavior. Secondly, the subjective norms are defined as "*the perceptions that the individual's important others think that one should (or should not) perform the behavior in question as well as the perception that these important others are (or are not) themselves performing the behavior"* [Fishbein, 2004; Theorizeit, 2017].

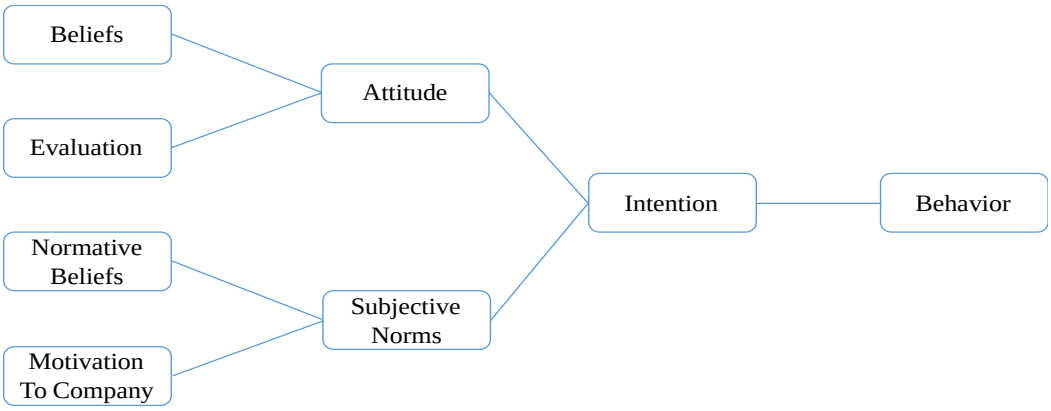



*Figure 2: Theory of Reasoned Action Diagram, source:Theorizeit.org*

### 2.2.2 Theory of Planned Behavior (TPB)

TPB is an extension to the Theory of Reasoned Action. TPB states that an individual's behavior is driven by his/her intentions. While behavioral intentions are considered a function of an individual's attitudes, subjective norms, and perceived behavioral control. In addition, there is the Perceived behavioral control construct to the TRA model; which represents how an individual perceives the ease of use engaged in performing behavior [McLeod, Published 2009, Updated 2014; Theorizeit, 2017].

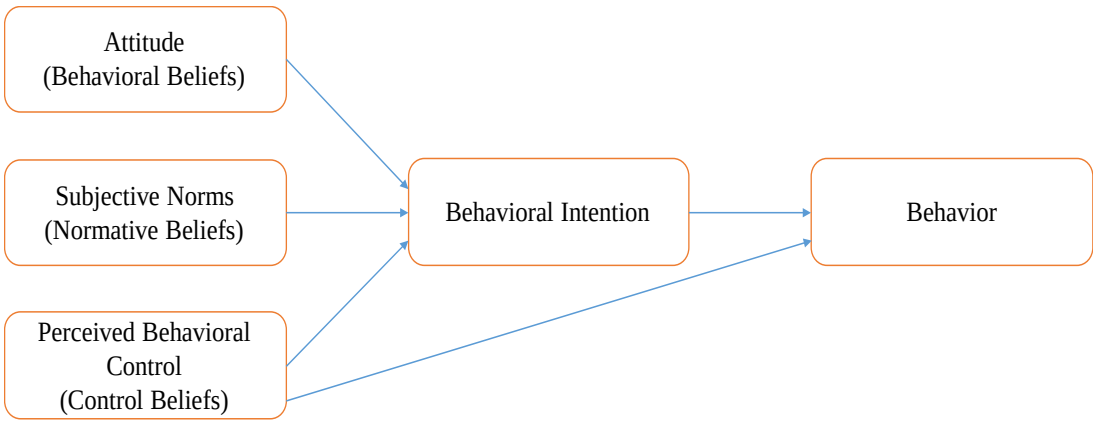



*Figure 3: Theory of Planned Behavior Diagram, source:Theorizeit.org*

There are several drawbacks to the TPB. For instance, it omits environmental and economic factors that may have an influence on an individual's intention to perform a behavior. In addition, it assumes that an individual has attained the opportunities and resources to perform the desired behavior successfully regardless of his/her intention. Lastly, it does not encounter a time frame between the intention and the behavioral action.[5]

### 2.2.3 Technology Acceptance Model (TAM)

TAM was based on the roots of the Theory of Reasoned Action (TRA) by Davis (1986, 1989) [Khan & Woosley, 2011]. It is an adaption used in the field of Information System. TAM was used profusely in Technology adoption researches, as it has been considered the most useful model in predicting consumers' acceptance of Information Technology, which was proved to be applicable in forecasting and explaining consumers' behavioral intentions to adopt and use 3G mobile data services.

TAM Model consists of two main constructs that affect the dependent variable of the behavioral intention, the perceived usefulness and the perceived ease of use which are considered the independent variables that affect the main dependent construct.

The Perceived Usefulness is represented by the degree that an individual believes that using Information Technology Systems and devices will enhance his/her job performance. On the other hand, the Perceived Ease of Use (PEOU) is defined as "*the degree to which a person believes that using a particular system would be free of effort*" [Davis, 1989; Theorizeit, 2017].

[5] Boston University School of Public Health, April 2016

Both TAM and TRA assume that once the intention to use is taken, performing that action would be without any limitations such as ability, environmental and organizational limits, and unconscious habits [Theorizeit, 2017].

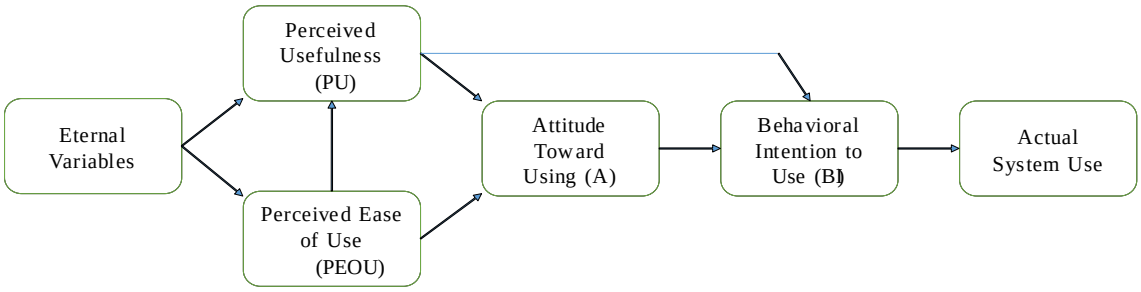



*Figure 4:Technology Acceptance Model, source:Theorizeit.org*

## 2.3 Factors affecting the Adoption of 3G

After reviewing past literature on 3G adoption, this part identifies the major factors believed to have an influence on the consumer's behavioral intention to use 3G mobile data services, including perceived usefulness, perceived ease of use, attitude, subjective norms, perceived behavioral control, and perceived enjoyment.

**Perceived Usefulness:**

As mentioned previously in TAM Model, PU directly affects the individual's attitude to use IT devices and services, which in turn influences their intention behavior to use it. In addition, it was found that PU is significantly correlated with both current and future usage [Davis, 1989; IGI Global, 2018; Kuo& Yen, 2008].

Several studies found that PU has the largest impact affecting the consumer's attitude towards using 3G data services. A study conducted in Italy by Pagani (2004), considered three main factors that influence PU, these include service offering, degree of mobility, and compatibility. The results indicated that PU was on the top of hierarchy of importance, especially for people aged 25-34.

Furthermore, another study handled in Turkey (2012), regarding the behavioral intention towards the use of 3G technology, found that PU has strong significant effect on the adoption of 3G Cellular data services [Pagani, 2004; Mardikyan et al., 2012; Suki and Suki, 2011; Muhammad et al., 2016].

In contrast, a study conducted in Taiwan by Kuo and Yen (2008) concluded that PU has insignificant influence on the behavioral intention to use 3G mobile data services. That was attributed to the low usage rates of 3G, and to the study subjects who were under-graduate and graduate students. These customers use a limited number of services and found that it was not useful in their lives. Measures developed in this study to show how useful 3G is in accomplishing tasks, increasing efficiency, and in providing information [Kuo& Yen, 2008].

Compelling the results regarding service quality and its role in enhancing the usefulness of 3G mobile services, a study conducted in Turkey by Mardikyan et al. (2012) found that a variety of services positively influences the consumer's behavioral intention of 3G usage, as the variety of 3G services increases its quality. In addition, it was concluded that the most important properties of service quality are speed and safety. Per contra, an empirical study handled in Singapore by Agarwal (2007) showed that merely offering wide range of services does not attract many users, especially when they do not have real use for them; hence variety of services was insignificant in influencing the perceived value [Mardikyan et al., 2012; Agarwal, 2007].

**Perceived Ease of Use (PEOU):**

Davis in (1989) claims that the more likely the application is perceived easier and clear to understand, the more it is accepted by users. PEOU is one of the major determinants of behavioral intention towards adopting 3G mobile services. In

addition, PEOU directly affects PU as the increased easiness increases job performance [Davis, 1989; Mun. Y Yi, 2003; Kuo and Yen, 2008].

A study conducted in Malaysia by Suki and Suki (2011) found that users have learned quickly how to use 3G. Similarly, another research by Pagani (2004) in Italy showed that the consumer's interest in 3G enhances PEOU. Also, it was concluded in a study handled in Taiwan that the rise of ease of use positively affects the consumer's attitude, which in turn positively affects his/her behavioral intention to use 3G value-added services [Kuo and Yen, 2008; Muhammad et al., 2016; Pagani, 2004; Suki and Suki, 2011; Velmurugan, 2014].

**Attitude:**

The behavior addressed in this study is the use of 3G Cellular data services. The variable is the attitude towards the intention to use 3G value added services, as it's one of the key determinants to the consumer's adoption behavior, and was found valuable in predicting the usage behavior [Velmurugan, 2014; Li, 2010; Phuangthong, 2005].

Compelling evidences from several studies, it was found that attitude has a positive influence on the consumer's intention to use 3G cellular data services, and is used heavily in predicting the consumer's behavior. It was concluded that using 3G Technology services is a good idea as it leads to good attitude [Phuangthong, 2005; Suki and Suki, 2011].

A research conducted by Garg (2011) in Botswana in Africa targeting 125 Faculty of Science students found that 50% of the participants had positive attitude towards the usage of 3G mobile services [Garg, 2011].

**Subjective norms:**

Subjective norms were proved to have an influence on the user's behavioral intention to adopt 3G Mobile data services, especially in early stages. Taylor and Todd (1995) said that subjective norms have been found to be more important prior to, or in the early phases of usage. As long as users have limited information and experience to from an attitude towards it. Yang (2006) pointed that consumers may believe that their families, peers, and friends would favor certain mobile behaviors; additionally, their belief tends to affect their usage behavioral intention. A study conducted in Turkey by (Mardikyan et al., 2012) found that the social influence increased the consumer's willingness to use 3G Cellular data services [Mardikyan et al., 2012; Yang, 2006; Taylor and Todd, 1995].

In a comparison study conducted by Yang (2006) between American and Korean consumers, he found that subjective norms were significant in their effect on Americans' attitude and intention to use mobile data services, but not on Koreans'. A similar study by Muhammad (2016) concluded that subjective norms were insignificant on Nigerian behavioral intention to use 3G services. In addition, Lu and others in Texas found that the social influence does not form an important direct effect on the intention to use wireless mobile technology [Yang K., 2009; Muhammad et al., 2016; Lu et al., 2005].

According to a study handled in Taiwan by Wu, using the Unified Theory of Acceptance and Use of Technology (UTAUT) model found that social influence directly influences the actual usage behavior [Wu, 2007].

**Perceived Behavioral Control (PBC):**

PCB reflects the individual's perception and belief of constraints or facilitation that affect the adoption of an innovation. Thus, PBC control is considered a significant antecedent on the consumer's behavioral intention to use 3G mobile data services

According to a comparative study conducted by (Song, 2010), he explored the difference among consumers' intention to adopt 3G within three regional cities in China. Song developed a measure for PBC through different variables such as cost and quality concerns. Result showed that PBC influences the adoption of 3G services; cost has a negative influence due to the high expense. On the other hand, consumers have concerns regarding the quality of 3G devices and services in the Chinese market, especially coverage area [Song, 2010].

Supporting pervious study findings, the cost of 3G services that consumers are willing to pay forms a constraint on the behavioral adoption among Indians. While the quality perceived is significantly affecting the consumer's attitude towards using 3G mobile services. Together with a study targeting Chile, adopters of mobile data services attempt to assess perceived cost with its perceived value in order to determine the worthiness of adoption [Singh et al., 2010; Rao, 2007].

**Perceived Enjoyment:**

Perceived enjoyment was labeled under intrinsic motivation in the TAM model. It is defined as *"the extent to which the activity of using the computer is perceived to be enjoyable in its own right, apart from any performance consequences that may be anticipated"*[Venkatesh, 2000, PP 351].

Perceived enjoyment is related to the perception of pleasure, satisfaction, entertaining, and liking associated with the use of certain technology device or service. It was found in a study conducted by Heijden (2001) in The Netherlands

that enjoyment has a high effect on the user's attitude towards the usage of websites using the TAM model. Another research handled in China by Liu and Li (2011) confirmed that the enjoyment construct has a significant effect on both the attitude and intention to adopt mobile hedonic services, specifically mobile gaming. Further, it was concluded that consumers evaluate the services not only by the expected functional performance and its cost, but also in terms of the pleasure they receive.

On the other hand, Hee-Woong, Hock, and Sumeet (2005) conducted a study in Singapore to examine the adoption of Mobile Internet. They found that the perceived enjoyment was insignificant in affecting MI users. They measured perceived enjoyment by joy and fun instruments. In addition, Suki and Suki conducted a study in Malaysia and found that PE is not significant in affecting BI [Heijden, 2001; Liu and Li, 2011; Soutar, 2001; Hee-Woong et al., 2005; Suki and Suki, 2011]

### 2.4 What makes this research different?

The rapid evolution in mobile data technology including its enormous features and usages shed light on explaining and predicting the user's behavior. Previous researches, which undertook the adoption of 3G and 4G mobile data services, mainly adopted TAM adding external variables, while other research have used the unified theory of acceptance and use of Technology.

Choosing the variables to be examined in this research is based on the revised literature, interviews with connections specialized in the field of mobile technology, the theory of planned behavior, and the technology acceptance model.

What makes this research different is that external variables driven from several resources are categorized into groups based on developing a mixed model between

TPB and TAM to increase the explanatory ability. In addition, this research includes the majority of variables predicted to have a significant effect on the adoption of 3G mobile data services in the West Bank.

Furthermore, most of the revised literature targeted respondents between the age of (18-32), who were students, graduates, and a small segment of employees. Part of them was users and the other part was potential users. Such a sample can't be generalized for the whole population, also the usage of mobile data services features may vary according to the respondent's age due to their needs and wants. This research covers the age range from less than thirty to over fifty years old in order to fill the mentioned gap.

In addition, three items were developed from the operational definition of PU, attitude, and perceived enjoyment factors. Items such as improving the academic performance and usefulness in research were added to measure PU. Another added measurement item is the usefulness of free time to evaluate the perceived enjoyment factor. Furthermore, the extent of preference of WIFI over 3G mobile data services item is used to examine the attitude variable.

# CHAPTER THREE: RESEARCH MODEL, HYPOTHSES DEVELOPMENT AND METHODOLOGY

## 3.0 Introduction:

The purpose of this chapter is to specify the research model, to develop the hypotheses for testing, and to describe the research methodology. The structure of this chapter is as follows, section 3.1 highlights the research model by classifying the six constructs; section 3.2 represents the development of the hypotheses showing the relationships between the constructs in the research model, and section 3.3 specifies the research methodology.

## 3.1 Research Model:

Based on the literature review, theories and models have assisted in identifying and explaining the most influential factors that the affect consumers' intention to adopt and use 3G mobile data services, by using the theory of acceptance model and the theory of planned behavior.

The adapted research model for testing would be based on seven constructs (the six concepts and the intention to use). Perceived usefulness and ease of use were derived from the TAM model, and the remaining three constructs were derived from TPB including attitude, subjective norms, and behavioral control. In addition, perceived enjoyment was added to the model as an external variable in order to

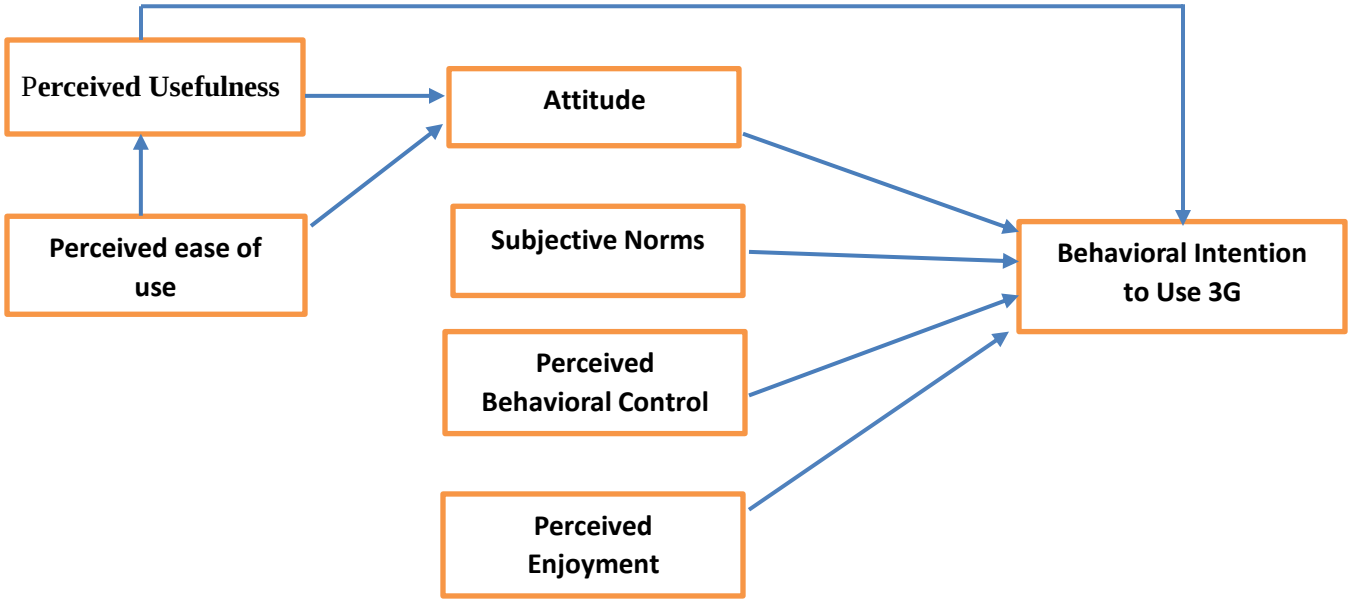
assess its importance on the individuals' adoption intention towards using 3G mobile services.

The dependent variable in this research model is the behavioral intention to use 3G mobile services. Intention is assumed to be the immediate antecedent of behavior. People are expected to implement an action when they have an opportunity; in this case to use 3G mobile data services. As mentioned previously in TPB theory, its three main constructs lead to the formation of behavioral intention [Ajzen, 2002].

While the independent variables are perceived usefulness, perceived ease of use, subjective norms, enjoyment, and perceived behavioral control. In addition, PEOU is considered in TAM as a direct determinant of perceived usefulness(Davis et al., 1989), other things held constant, the less complexity a system is to use, the more it can increase job performance [Venkatesh and Davis, 2000].

The change in attitude depends on both PU and PEOU. An individual with strong beliefs and perceptions that a positive result will be gained from performing the behavior will have a positive attitude towards this behavior. Therefore, the relationship between perceived usefulness and behavioral intention to use 3G mobile services is mediated by attitude. In addition, the relationship between perceived ease of use and behavioral intention to use 3G mobile services is mediated by attitude. The research model which is presented below shows the relationships to be tested as illustrated in figure 5.

*Figure 5: Research Model, Source: By Researcher*




## 3.2 Hypotheses development:

This part includes the hypotheses that were proposed based on the available literature review and theoretical framework. The eight hypotheses for testing are as follows:

**H1**: Perceived ease of use has significant influence on the perceived usefulness to use 3G mobile services.

**H2:** Perceived Usefulness has a significant influence on the attitude towards using 3G mobile services.

**H3**: Perceived Usefulness has a significant influence on the behavioral intention towards using 3G mobile services.

**H4**: Perceived ease of use has a significant influence on the attitude towards using 3G mobile services.

**H5:** Attitude has a significant influence on the behavioral intention to use 3G mobile services.

**H6**: Subjective norms have a significant influence on the behavioral intention to use 3G mobile services.

**H7**: Perceived behavioral control has a significant influence on the behavioral intention to use 3G mobile services.

**H8**: Perceived Enjoyment has a significant influence on the behavioral intention to use 3G mobile services.

### 3.3 Methodology:

The purpose of this study is to examine the impact of introducing 3G Cellular data services on the individual's behavior in Bethlehem Governorate. A descriptive exploratory approach is used to understand the area of interest, and it was selected for this study to describe and explore the consumer's beliefs and perceptions towards using 3G mobile data services.

On the other hand, the purpose of the item selection is to achieve accurate estimates for each factor in the research model by identifying items from existing scales, and when necessary, by creating additional instruments that fit the constructs' operational definition.

The structural model includes a set of constructs and their corresponding measures. The following variables are hypothesized to affect the users' perceived ease of use:

- Simple and clear.
- Easy to use 3G mobile service.

- Using mobile applications became easier after launching 3G.
- Easy to understand

While the variables that are hypothesized to influence the users' usefulness are:

- Increase in job performance and effectiveness.
- Improving the academic performance.
- Useful in research.

In addition, the variables predicted to have an influence on the subjective norms are:

- The effect of peers, families, and friends perceptions and preferences on the use of 3G mobile data services.
- Gaining social role.

Moreover, the attitude construct will be measured by the respondents' evaluation on how favorable or unfavorable using 3G mobile services is, and whether users prefer WIFI over 3G mobile data services. Enjoyment is measured by the following instruments:

- Entertainment.
- Interesting.
- Mean to fill free time.

Davis claims that the higher the level of perceived control the stronger is a person's intention towards performing that behavior. Hence, cost and quality concerns are the two concepts identified to examine perceived constraints that affect the consumer's intention to use 3G mobile services. The cost concern concept represents the total price paid for using 3G mobile services which include subscription fees and economic feasibility. While, quality concerns exhibits the

users' potential perception and assessment of the service coverage, speed, and quality [Ajzen, 2002].

The final instrument items used to measure each variable are summarized in table 3 with the references.

| **Factor** | **Measurement** | **Reference** |
|---|---|---|
| Perceived Ease of Use | • Ease to use 3G<br>• Ease to use Apps with 3G<br>• Ease to understand<br>• Simple and clear | • (Suki and Suki, 2011)<br>• (Velmurugan 2014)<br>• (Davis 1989)<br>• (Davis 1989) |
| Perceived Usefulness | • Increase job performance and effectiveness<br>• Useful in research | • (Davis 1989)<br>• Researcher |
| Subjective Norms | • Gaining Social Role<br>• Effect of friends<br>• Effect of peers<br>• Effect of family | • (Yang 2006)<br>• (Yang 2006;Lu et al.,2005; Taylor and Todd, 1995)<br>• (Yang 2006; Taylor and Todd, 1995)<br>• (Yang 2006) |
| Perceived Enjoyment | • Interesting<br>• A way of entertainment | • (Suki 2011)(Hee-Woong et al., 2005)<br>• (Song, 2010; Soutar, 2001)<br>• (Researcher) |

| | | |
|---|---|---|
| | • Enjoying free time | |
| Perceived Behavioral Control | • Subscription fees<br>• Cost<br>• Economic feasibility than WIFI<br>• Quality concerns<br>• Service coverage<br>• Speed<br>• Service offering | • (Agrwal et al., 2007)(Hee-Woong et al., 2007)<br>• (Song, 2010)<br>• (Researcher)<br>• (Song, 2010)<br>• (Song, 2010)<br>• (Mardikyan et al. 2012; Agarwal et al., 2007; Pagani, 2004)<br>• (Pagani, 2004) |
| Attitude | • Favorability to use<br>• Preferred over WIFI | • (Suki 2011)<br>• (Researcher) |
| Behavioral intention | • Intention to use in the next 6 months<br>• Intention to frequently use | • (Song, 2010)<br>• (Kim et al., 2011) |

*Table 3: List of Instrument Items. Source: by researcher*

### 3.4 Data collection method:

It is defined as the process of collecting information on the targeted variables from relevant sources to crystallize the research problem, and achieve the overall objective of the research. Primary and secondary data were used in this research.

First of all, primary data represents the data collected from original sources for the specific objective of the research. Semi-structured interview was used to have a better understanding of the research topic and to determine the most influential variables.

In addition, a questionnaire is the second method used in this study. It was personally administered in order to ensure collecting complete responses in

companies and stores' show rooms, hospitals, as well as universities. Questions tapped the dimensions and elements of the concept for the purpose of measuring the individual's beliefs, perceptions, and attitudes towards using 3G data services.

Furthermore, the questionnaire design included an introduction, demographic information that helps to describe the sample characteristics and measure the difference between respondents' answers. The information included gender, age, academic qualification, average monthly salary, occupation, address, and application usages by smart phone.

While scale questions were used based on Likert scale, where respondents answered based on a scale from strongly agree to strongly disagree. The second part of the questionnaire aimed to specify the type of the relationship whether it is positive or negative and compare it with the studies discussed in the literature review. The last part consisted of a comparison between the second and third generation based on five criterions. The purpose of this part was to answer the first question of this study [Sekaran and Bougie, 2016].

Respecting the language difference, the questionnaire was translated to Arabic to ensure that it is well understood by the respondents. Moreover, forty questionnaires were used as a sample pilot to ensure that it's understandable, well-structured with a high level of reliability and validity.

Secondly, secondary data represents data being reused. This research used periodicals, books, articles, and statistics from the Palestinian Central Bureau of Statistics (PCBS).

### 3.5 Data analysis method:

Two types of statistical programs were used to achieve the study objectives and answer its questions. The first was the Statistical Package for Social Sciences (SPSS) version 20. This was used to generate the following statistical analysis:

- Cronbach's Alpha equation to ensure the reliability of the study tool.
- Person Correlation coefficient to verify the internal validity of the study.
- The Means, standard deviations, and frequencies.
- Independent sample T Test, F- Test One Way ANOVA, Least significant difference (LSD).

The second program was the Smart PLS 3.2 to analyze the Structural Equation Model (SEM), which is well known as one of the covariance- based methods. Those methods are widely adopted by social science researchers. In addition, PLS is a technique used in SEM-based analysis that is used for theory confirmation and testing relationships among factors [Chin, 1998].

The justification for using the SEM is that it's considered one of the most popular research methods that have been widely used in marketing and consumer behavior researches [Song, 2010].

## 3.6 Sampling Design

In general, the population in statistics represents all the subjects of the study. The population includes elements that represent individuals who will participate in the research. In specific, this research's population includes all 3G users in Bethlehem Governorate in order to examine the factors that influence their usage intention.

The main idea of sampling is to be representative and non-bias. To achieve this, the study targeted 3G users in Bethlehem Governorate due to its special social, religious, and geographic characteristics; as it's surrounded by Israeli settlements.

Bethlehem Governorate is consisted of three main cities (Bethlehem, Beit Jala, and Beit Sahour), two minor cities (Al Doha and Al Khader), villages, and refugee camps.

The questionnaire focused on users who benefit from 3G services provided by local telecommunication companies and excluded those who benefit from other providers especially Israelis' companies. The main reason is to avoid bias due to the significant difference between the services provided as mentioned in table 1(Price gap).

Simple random sampling is one of the types of probability sampling strategy. It is adopted in this research as every element in the population is known and has an equal chance to be selected. In addition, this strategy offers the least bias and the most generalizability [Sekaran and Bougie, 2016].

It is recommended to have a sample size of 384 respondents for the population has more than 75000 members. The formula for calculating the sample size was not applicable since the number of 3G mobile services users is not known. However, 402 samples were distributed [Sekaran and Bougie, 2016].

# CHAPTER FOUR: DATA ANALYSIS

## 4.0 Introduction

This chapter describes data analysis and research findings. Data was analyzed to identify the sample characteristics, in depth exploration of the difference among respondents groups, and to examine the relationship between the six constructs and the behavioral intention to use 3G cellular data.

## 4.1 Sample characteristics

Four hundred and two participants answered the questionnaire from different areas in Bethlehem Governorate. The following table illustrates the characteristics of the participants according to the demographic distribution.

| Number | | | Frequency | Percentage |
|---|---|---|---|---|
| **1** | **Gender** | **Male** | 203 | 50.5% |
| | | **Female** | 199 | 49.5% |
| **2** | **Age** | **Less Than 30** | 237 | 59.0% |
| | | **30 – 40** | 103 | 25.6% |
| | | **41 – 50** | 43 | 10.7% |
| | | **More than 50** | 19 | 4.7% |
| **3** | **Academic qualification** | **Diploma** | 66 | 16.4% |
| | | **Bachelor's degree** | 219 | 54.5% |
| | | **Master's degree** | 48 | 11.9% |
| | | **PHD** | 5 | 1.2% |
| | | **Others** | 64 | 15.9% |
| **4** | **Average monthly salary** | **Less than 2000 NIS** | 144 | 35.8% |

| | | | | |
|---|---|---|---|---|
| | | **2000 – 4000 NIS** | 161 | 40.0% |
| | | **4001 – 6000 NIS** | 61 | 15.2% |
| | | **6001 – 8000 NIS** | 23 | 5.7% |
| | | **More than 8000 NIS** | 13 | 3.2% |
| **5** | **Occupation** | **Employee** | 213 | 53.0% |
| | | **Free business** | 54 | 13.4% |
| | | **Student** | 112 | 27.9% |
| | | **Other** | 23 | 5.7% |
| **6** | **Address** | **Bethlehem** | 70 | 17.4% |
| | | **BeitJala** | 74 | 18.4% |
| | | **Eastern countryside** | 61 | 15.2% |
| | | **BeitSahour** | 106 | 26.4% |
| | | **Refugee camps** | 32 | 8.0% |
| | | **Western Countryside** | 13 | 3.2% |
| | | **Al-Doha** | 39 | 9.7% |
| | | **Al-Khader** | 7 | 1.7% |

*Table 4: The characteristics of respondents based on the demographic distribution*

First of all, according to gender, there were 203 males with a percentage of 50.5%, while 199 were females with a percentage of 49.5%.

The majority of respondents were younger than 30 years with a percentage of 59%. 103 participants were between the age of (30-40) with a percentage of 25.6%. The remaining participants were between the ages of (41-50) and older than 50 years old, with a percentage of 10.7% and 4.7% respectively.

According to the academic qualification distribution of the 402 respondents, it was found that the number of participants who have a diploma was 66 with a percentage of 16.4%, 219 participants have a Bachelor's degree representing a

percentage of 54.5%, 48 participants have a Master's degree with a percentage of 11.9%, 5 participants have a PHD with a percentage of 1.2%, and 64 participants have chosen the option others representing 15.9%.

Based on the average monthly income distribution in New Israeli Shekel (NIS), it was found that the highest percentage earned a salary between (2000-4000) NIS with a percentage of 40%. While the rest earned a monthly income that is less than 2000 NIS, between (4001-6000) NIS, (6001-8000) NIS, and more than 8000 NIS according to the following percentages in order 35.8%, 15.2%, 5.7%, 3.2%.

The majority of the participants were employees with a percentage of 53%; 54 of them were working in free businesses representing 13.4% of the sample, 112 were students representing 27.9%, and the rest chose others with a percentage of 5.7%.

At last, all participants selected for this study resided in Bethlehem Governorate. The majority were living in BeitSahour City with a percentage of 26.4%. While the remaining were living in Bethlehem, BeitJala, Eastern countryside, refugee camps, Western countryside, Al-Doha, and Al-Khader representing the following percentages 17.4%, 18.4%, 15.2%, 8%, 3.2%, 9.7%, and 1.7% respectively.

**4.2 Smart Phone application usage:**

This part of the questionnaire aimed to highlight the most used applications by the participants. Thirteen widely used applications were ranked by 3G data services users by applying 5 rank scales from very high to very low based on the following measures used to interpret the result:

- Low for means less than 2.33.
- Medium for means between 2.34- 3.66.
- High for means greater than 3.66.

Means and standard deviation statistical tests were executed to rank the application usage by smart phones in descending order as shown in table (5).

| **Application** | **Mean** | **Std. Deviation** | **Degree** |
|---|---|---|---|
| Social Media apps | 4.23 | .914 | High |
| Phone calls | 4.01 | 1.136 | High |
| Web browsing | 4.00 | .907 | High |
| Watching films and listening to music | 3.59 | 1.233 | Medium |
| E-mails | 3.53 | 1.205 | Medium |
| Download files | 3.31 | 1.211 | Medium |
| Games | 3.27 | 1.315 | Medium |
| Reading books, articles, and magazines | 2.94 | 1.131 | Medium |
| Home control systems apps | 2.84 | 1.469 | Medium |
| GPS | 2.80 | 1.259 | Low |
| Mobile banking | 2.65 | 1.345 | Low |
| Mobile shopping | 2.58 | 1.298 | Low |
| Travel apps | 2.34 | 1.293 | Low |

*Table 5: arranged Application usage means and standard deviation by descending order*

The most used applications based on the illustrated table are the social media apps, phone calls, and web browsing with means of 4.23, 4.01, and 4 respectively. While the lowest means were for travel apps, mobile shopping and mobile banking with values of 2.34, 2.58, and 2.65 respectively.

## 4.3 Construct's Validity:

The validity of the study tools were verified by presenting them to a group of specialized and experienced arbitrators who showed their observations about the number of paragraphs, their wording, order, and modification of the questionnaire. Which was consisted of 24 paragraphs divided into seven fields, by using 5 ranks of Likert Scale for answers (strongly agree = 5, agree = 4, neutral = 3, disagree = 2, strongly disagree = 1).

The correlation coefficient between the paragraphs and the total score for each item was calculated as shown in table 6.

| **Number** | **Person** | **Sign** | **Field** | **Number** | **Field** | **Person** | **Sign** |
|---|---|---|---|---|---|---|---|
| 1 | .810** | 0.00 | **Perceived ease of use** | 5 | **Subjective norms** | .756** | 0.00 |
| 2 | .819** | 0.00 | | 6 | | .752** | 0.00 |
| 3 | .830** | 0.00 | | 7 | | .691** | 0.00 |
| 4 | .689** | 0.00 | | 8 | | .726** | 0.00 |

| **Number** | **Person** | **Sign** | **Field** | **Number** | **Person** | **Sign** | **Field** |
|---|---|---|---|---|---|---|---|
| 9 | .820** | 0.00 | **Perceived Usefulness** | 12 | **Perceived enjoyment** | .772** | 0.00 |
| 10 | .698** | 0.00 | | 13 | | .808** | 0.00 |
| 11 | .736** | 0.00 | | 14 | | .808** | 0.00 |
| 15 | .431** | 0.00 | **Perceived Behavioral control** | 22 | **Behavioral Intention** | .882** | 0.00 |
| 16 | .396** | | | 23 | | .889** | 0.00 |
| 17 | .573** | | | 24 | **attitudes** | 1 | 0.00 |
| 18 | .716** | | | | | | |

| | | | | |
|---|---|---|---|---|
| 19 | .682** | | | |
| 20 | .644** | | | |
| 21 | .641** | | | |

*Table 6: Pearson correlation coefficient and statistical construct significance*

The data in the table indicates that there is a high consistency between the items and the total score of each construct. Moreover, the Pearson correlation was between (0.396 – 0.889) and was significant (0.00) for all items, which indicates internal validity [Serkan and Bougie, 2013].

## 4.4 Construct Reliability:

The Cronbach's Alpha equation was calculated to confirm the reliability of the study instruments. It is recommended to have a reliability between 0.7 and 0.8 to achieve high internal consistency. The reliability value of this study is 0.865 which meets the study purposes as in Table (6) [Panayides, 2013].

| **Cronbach's Alpha** | **N of Items** |
|---|---|
| .865 | 24 |

*Table 7: Cronbach's Alpha*

## 4.5 Analysis of variance (ANOVA) Test:

One way ANOVA is a statistical technique that was used to assess if there is a statistically significant difference in the demographic information (gender, age, academic qualification, salary, occupation, address) by the dependent variables.

The F- ratio and the associated probability value p-value were calculated to determine the existence or absence of the differences among the different groups.

Once the p-value associated with the F- ratio is smaller than 0.05, the means of all the groups are not equal. This required the use of Post- hoc tests such as T-test and Fisher's least significant difference (LSD) to figure out which groups are different from each other.

In addition, the independent sample T-test is used to determine whether there is a statistically significant difference between the gender groups regarding all constructs. While LSD was used to provide additional exploration of the difference among the means to provide specific information on which means are significantly different from the others. LSD was applied on the remaining demographic data along with the dependent measures.

Table 8 summarizes the ANOVA, T-value, F-value, and their significance level to determine whether there are differences in the dependent variable by a demographic group.

| **Demographic factor/variables** | | **Perceived ease of use** | **Subjective norms** | **Perceived Usefulness** | **Perceived enjoyment** | **Perceived Behavioral control** | **Behavioral Intention** | **Attitude** |
|---|---|---|---|---|---|---|---|---|
| **Gender** | T | -.363 | -.071 | -.503 | 1.050 | .827 | -.458 | -1.305 |
| | Sig | **.717** | **.944** | **.615** | **.294** | **.409** | **.647** | **.193** |
| **Age** | F | 2.020 | 1.368 | **2.974** | 2.232 | 1.719 | **2.999** | .441 |
| | Sig | **.111** | **.252** | **.032**** | **.084** | **.163** | **.031**** | **.724** |
| **Academic Qualification** | F | 1.889 | .233 | **3.094** | .545 | 1.513 | 2.042 | 1.014 |
| | Sig | **.112** | **.920** | **.016**** | **.702** | **.198** | **.088** | **.400** |
| **Salary** | F | .790 | .499 | **3.448** | .455 | .847 | 1.861 | 1.075 |
| | Sig | **.532** | **.737** | **.009*** | **.769** | **.496** | **.117** | **.369** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Occupation** | F | 2.253 | 1.484 | .394 | 1.818 | 1.525 | .279 | 1.305 |
| | Sig | **.082** | **.218** | **.757** | **.143** | **.208** | **.841** | **.272** |
| **Address** | F | **2.746** | **2.178** | 1.325 | 1.377 | 1.047 | **4.548** | **2.887** |
| | Sig | **.009**** | **.035**** | **.237** | **.213** | **.397** | **.000**** | **.006**** |

*Table 8: ANOVA, T-test, and their significant level*

To conclude, there were statistically significant differences between age groups means regarding PU and BI. Concerning the academic qualification, there was a statistically significant difference between the groups' means with the PU construct. In addition, there was a statistical difference among the salary groups with PU. At last, there were statistical differences between the location addresses with PEOU, SN, BI, and attitude.

LSD was applied to indicate data values that represent the treatment differences with a certainty of 95%. This was done by comparing the mean of one group with the mean of another. Tables are attached at the end of this chapter.

1. Respondents age differences:

Based on the LSD table (9) and comparing the mean values, the respondents group who are between the age of (41-50) perceive the usefulness of 3G mobile data services more than other groups with a mean value of 3.82. Whereas, people who are over 50 years old were the least in perceiving the usefulness of 3G. This may be attributed to their lack of conviction, lack of knowledge and guidance, and having perceptions that 3G is a complex technology service. In addition, respondents who are less than 30 and between the age of (30-40) have the willingness to use 3G mobile services more than other age groups.

2- Respondents for the academic qualification differences:

Regarding the academic qualifications, differences were found between groups concerning the PU construct. Respondents who have a Master's degree recognize the usefulness of 3G with mean value of 4.02 more than other groups.

3- Respondents to the average monthly income differences:

Differences between the average monthly salary groups were found regarding the PU construct. Respondents who earn salaries more than 8000 NIS and between (4000-6000) NIS perceive 3G benefits more than other salary groups with mean values of 4 and 3.96 respectively. The justification may be attributed to the fact that earning higher income makes 3G more affordable, thus increasing the probability to adopt this services and recognize its benefits.

4- Respondents to the address location differences:

Differences between the address location groups were found regarding PEOU, SN, and BI in BeitSahour city with the following highest means (4.1, 3.6, and 4.07). The difference may reveal that BeitSahour residents retain the traditions and hierarchy in decision making. In addition, the perceived ease of use is an important antecedent to the behavioral intention of cellular data services. Additionally, consumers who are living in BeitSahoor city form higher behavioral intention to adopt 3G cellular data services compared to other cities in Bethlehem Governorate. While differences regarding the attitude construct were found in Al-Khader city with 4.57 mean values. The residents of Al-Khader city have different emotions, and feelings compared to those of other cities.

### 4.6 Partial least square (PLS) - SEM:

The structural equation model is divided into a measurement model and a structural model. The measurement model which is also called the outer model, it

is used to test the validity and reliability of the measurement items and constructs in the model that was tested previously using the SPSS. The structural model, which is also called the inner model, is used to specify the relationships among the constructs. (Song, 2010; Anderson &Gerbing, 1998)

**Model fit:**

The Standardized Root Mean Square residual (SRMR) was used to evaluate the overall fit of the models' structure. SRMR is "*the square root of the sum of the squared differences between the model-implied and the empirical correlation matrix"* [Henseler et al., 2016, P.9]. Therefore, the SRMR for the model was 0.082 which is adequate as proposed by Henseler et al. (2016).

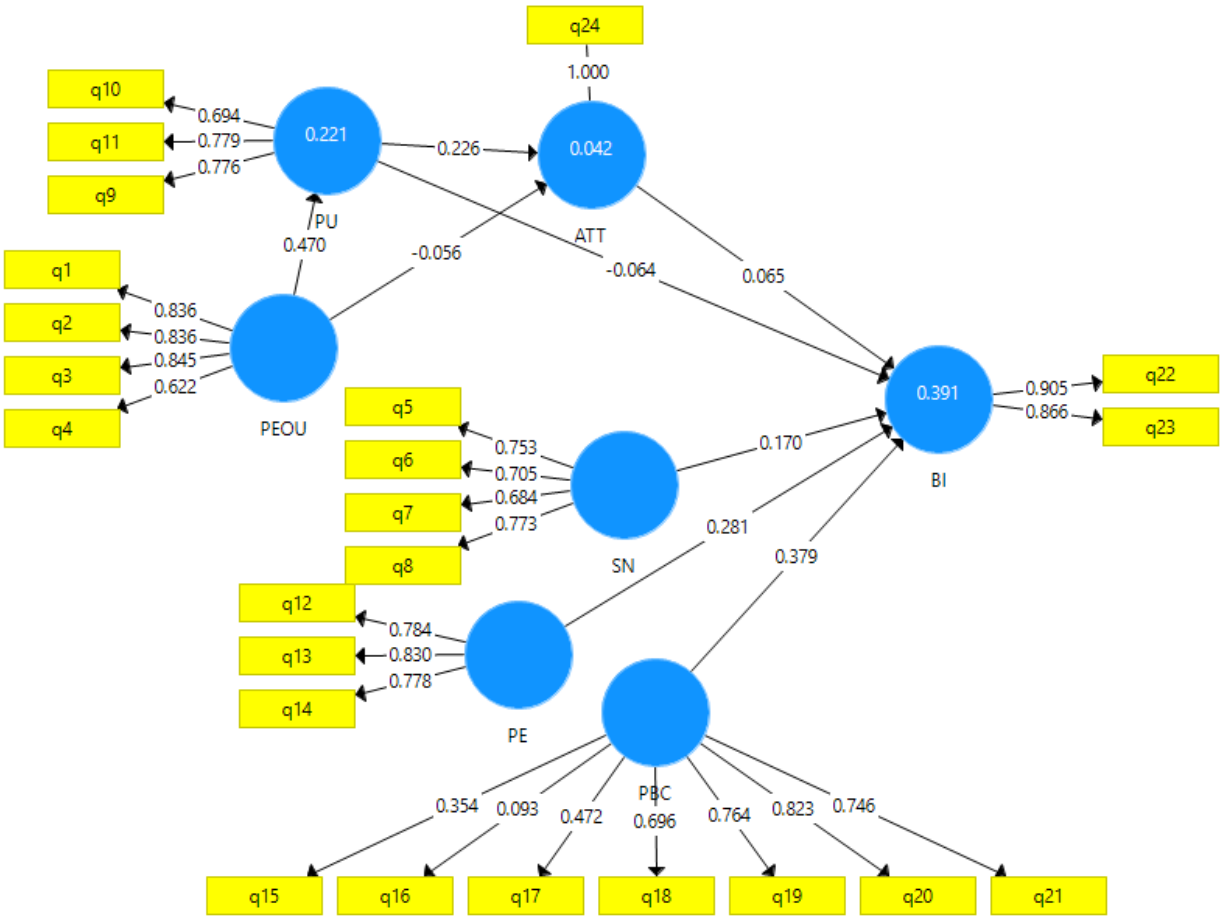


*Figure 6: Structural equation model. Source: Researcher*

Figure 6, presents a graphical description of the path coefficients of the structural model and the coefficient of determination ($R^2$) of the latent variables (not directly measured). This was accounted for 22% of the variance in the Perceived Usefulness, 4.2% of the variance in Attitude, and 39% of the variance in Behavioral Intention. For the whole model, $R^2$ is equal to 39% which means that 39% of the independent variables (IV) perceived usefulness, perceived ease of use, attitude, subjective norms, and perceived behavioral control were good in predicting the dependent variables (DV) behavioral intention. According to the perceived usefulness, the variables of perceived ease of use explain 22% of the variance on perceived usefulness. However, the variables of perceived usefulness and perceived ease of use together explain 4.7% of the variance on attitude. In addition and according to the behavioral intention, 39% of the variance on behavioral intention explained by the perceived usefulness, perceived ease of use, attitude, subjective norms and perceived behavioral control.

## 4.7 Comparison between 2G and 3G:

The questionnaire was used to determine the difference between the second and third generation of mobile data services. It consisted of (5) items, by using 5 ranks for the answers (strangely agree = 5, agree = 4, neutral = 3, disagree = 2, strongly disagree = 1), as illustrated in Table (9).

| **Item** | **Mean** | **Std. Deviation** | **Degree** |
|---|---|---|---|
| **Coverage** | 4.08 | .917 | High |
| **Features** | 4.01 | .875 | High |
| **Speed** | 3.98 | .849 | High |

| | | | |
|---|---|---|---|
| **Compatibility** | 3.98 | .872 | High |
| **Security** | 3.87 | .937 | High |

Table 9:Comparison between 2G and 3G by arranging the items depending on the means.

The third generation of 3G mobile data services is preferred by users over the second generation based on the criterions shown in table (9). Means were high degree for all items; the mean of the coverage was (4.08), (4.01) for the features, (3.98) for the speed, (3.89) for the compatibility, and (3.87) for the security.

## 4.8 Hypotheses testing:

Based on the results of the structural model testing, the bootstrapping test was used to check if the t-value is greater than z= 1.96 for 2- tailed which is equivalent to $p<0.05$ in order to accept or reject the hypotheses. The type of relationships and their effect sizes were determined by the path coefficient's estimation.

| Number of the hypothesis | From | To | Path Coefficient's Estimation | t-Value | Hypothesis Support |
|---|---|---|---|---|---|
| **H 5** | **ATT** | **BI** | 0.065 | 1.356 | No |
| **H 7** | **PBC** | **BI** | 0.380 | 7.406 | Yes |
| **H 8** | **PE** | **BI** | 0.281 | 5.010 | Yes |
| **H 4** | **PEOU** | **ATT** | -0.056 | 0.903 | No |
| **H 1** | **PEOU** | **PU** | 0.470 | 10.998 | Yes |
| **H 2** | **PU** | **ATT** | 0.226 | 3.568 | Yes |
| **H 3** | **PU** | **BI** | -0.064 | 1.269 | No |
| **H 6** | **SN** | **BI** | 0.170 | 3.517 | Yes |

Table 10: Estimated path coefficients and its t-value

Hypothesis one stated that the perceived ease of use has significant influence on the perceived usefulness to use 3G mobile services. The analysis of the results supported this hypothesis as the path coefficient was ($\beta$) = 0.470, and t=10.998

which means that the perceived usefulness has a positive significant influence on the perceived ease of use. Hence, the first hypothesis was supported. The result is consistent with those of previous studies [Davis, 1989; Kuo and Yeng, 2008].

The second hypothesis proposed that the perceived usefulness has a significant influence on the attitude towards using 3G mobile services. Table (10) proved that the perceived usefulness is related to attitude (path coefficient (β) = 0.226, t=3.568) which means that the perceived usefulness has a positive significant influence on attitude. These results match those of previous studies [Davis, 1989; Kuo and Yen, 2008]

Hypothesis three examined the existence of a significant influence from the perceived usefulness on the behavioral intention to use 3G mobile data services. Results found that there was no statistical significant effect as the path coefficient was (β) = -0.064, and t=1.269. Therefore, the hypothesis was rejected. The results were inconsistent with TAM hypothesis and previous studies. [Pagani, 2004; Mardikyan et al., 2012; Suki and Suki, 2011; Muhammad et al., 2016] except for Kuo and Yen (2008) study.

The forth hypothesis stated that perceived ease of use has a significant influence on the attitude towards using 3G mobile services. Analysis results showed that PEOU is not related to attitude as the path coefficient was (β) = 0.056, and t=0.903. Consequently the hypothesis was rejected. The results contradicted the studies mentioned in the literature review. This may be attributed to the lack of guidance and knowledge on how to use this technological service. [Kuo and Yen, 2008; Muhammad et al., 2016; Pagani, 2004; Suki and Suki, 2011; Velmurugan, 2014].

The fifth hypothesis examined whether attitude has a significant influence on the behavioral intention to use 3G mobile services. Based on the analysis results, it

was found that attitude is not related to BI to use 3G (path coefficient (β) = 0.065, t=1.356) and for that reason the hypothesis was rejected. The results contradicted the research in the literature review by phuangthong, 2005; Suki and Suki, 2011, and Grag, 2011. This result may be attributed to the respondent's preference of WIFI over 3G.

The sixth hypothesis stated that the subjective norms have a significant influence on the behavioral intention to use 3G mobile services. The results demonstrated that this hypothesis was supported with the path coefficient ((β) = 0.170, t=3.517). This means that SN positively affect BI to use, which was consistent with Wu (2007) and Mardikyan et al., (2012). While Muhamad (2016) found that SN were insignificant on Nigerian BI to use 3G mobile services. Whereas yang (2006) concluded that SN affected significantly Americans BI but not Korean 3G users.

Hypothesis 7 assumed that PBC has a significant influence on the behavioral intention to use 3G mobile services. It was found that PBC positively influences BI with a path coefficient of (β) = 0.380 and t=7.406. Thus, the hypothesis was supported. However, results do not substantiate studies on PCB [Song, 2010; Singh, 2010; Rao, 2007] who concluded that PCB significantly influences the BI to use 3G mobile services.

At last, hypothesis eight supposed that PE has a significant influence on BI to use 3G mobile services. The results indicated that PE positively affected BI with a path coefficient of (β) = 0.281and t=5.010. Accordingly, the eighth hypothesis was supported. The results of Liu Li (2011) and suki and suki (2011) were compatible while Hee-Wong et al. (2005) findings were inconsistent.

In conclusion, the highest effect was the influence of PEOU on PU with a path coefficient value of 0.47. The effect of PBC on BI to use 3G mobile data services

came in the second place with a path coefficient value of 0.38. This was followed by the effect of PE on BI to use 3G, PU on attitude, and SN on BI to use 3G respectively with the following path coefficients 0.281, 0.226, and 0.17.

# CHAPTER FIVE: IMPLICATIONS AND CONCLUSION

## 5.0 Introduction:

The previous chapters indicated the program of this research, the analysis process, and the findings. This chapter provides economic and business implications as well as the conclusion based on the main findings of this research. In addition, the limitations and directions for future researches are highlighted.

## 5.1 Economic and business implications of the results:

The introduction of 3G cellular data services was late compared to other countries.

Especially that Israeli service provider offered their services and made them available to Palestinians by the beginning of 2006. Therefore, the local provider companies should be concentrating on the critical success factors that are new services offering and innovation. Accordingly, the following implications were derived [Everington, 2018].

### 5.1.1 General implications:

On the first hand, the effect of broadband technology services on the Gross Domestic Product (GDP) was obvious in many countries. It was suggested that an increase in the mobile broadband penetration by 10% causes 0.6-2.8 % increase in GDP [Edquist et al., 2017]. The introduction of this service has played an effective role in increasing the tax revenues for the governments and in creating new jobs that contribute to lowering unemployment rates. Furthermore, the spread of smart phone applications has contributed to changing the way businesses work. The emerging need for being connected, managing businesses at local and international levels, and the development of mobile commerce along with electronic commerce; made it necessary to have a technological mean to meet these needs.

On the other hand, the categorization of 3G users based on their characteristics enables firms to better satisfy their needs and wants. It also allows companies to target their marketing policies and advertising campaigns according to the characteristics of each segment. The results indicate that individuals who are over forty and less than fifty years old, have a Master's academic degree, and who earn income above 4000 NIS have a higher recognition to the benefits of 3G and how this service can enhance their work and life. While individuals who are under the age of 41 have a higher probability to use 3G.

Furthermore, Differences between respondents groups regarding addresses are observable in four factors affecting the decision of 3G usage. BeitSahour city residents have found 3G easy to learn and use and are affected highly by social pressure, and the most willing to use 3G mobile data services. While, Al-Khader city residents formed an attitude towards using 3G more than other cities located in Bethlehem Governorate.

The results demonstrated that social media, phone calls, and web browsing are the most applications used by Palestinians. This may be driven by users' habitual use, satisfaction, and connecting with people. In addition, Palestinian users of mobile data are aware of the difference between the second and the third generation regarding coverage, offered features, speed of service, compatibility with mobile devices, and security. From their point of view, 3G offers higher quality attributes compared to the introduced attributes in 2G.

Furthermore, the major findings of this research were accomplished by testing the hypotheses about the six constructs affecting the behavioral intention to use 3G. Perceived behavioral control, perceived enjoyment, and subjective norms are the constructs that significantly affect the behavioral intention.

Perceived behavioral control has the most significant influence on the behavioral intention to use 3G. This construct was tested using seven measurement items about perceived cost and quality. Individuals are highly concerned about service quality, coverage, speed, and cost. In addition, perceived enjoyment has the second significant influence on the behavioral intention to use 3G. Respondents find 3G as an interesting, entertaining, and enjoyable service. This was supported in table (5) as social media applications are the most used by individuals. Furthermore, subjective norms positively affect 3G users behavioral intention which means that

Palestinian individuals are influenced by their family, friends, and peers on their decision to use a new mobile service.

However, perceived usefulness is not significantly influencing behavioral intention. This may be attributed to the low usage rates, or to the lack of awareness among Palestinian customers about the benefits of 3G, or to the availability of a substitute such as WIFI internet that is satisfying their needs more than 3G. In addition, to the existence of another substitute, which is the forth generation services offered by Israeli providers. Especially that the latter provides competitive packages, prices, and speeds.

Moreover, perceived ease of use has significant positive influence on the perceived usefulness. The perceived usefulness of 3G mobile data services rises if service providers can provide understandable and easy to use services. Further, perceived usefulness has a positive effect on attitude. The more individuals who perceive the benefits of 3G mobile data services the more they form a positive attitude towards it. On the other hand, the attitude towards 3G cellular data services cannot be attributed to individuals' perceptions about how simple and easy it is to use. Subsequently, the indirect effect of both perceived usefulness and perceived ease of use constructs is not significant on the behavioral intention to use 3G mobile data services through the moderating construct attitude.

### 5.1.2 Specific business implications:

This study contributed to defining the factors that influence the Palestinian consumers' intention to use 3G. This contribution can benefit local provider companies to improve their marketing strategies to encourage 3G acceptance and usage.

The results have shown that perceived usefulness does not influence their intention to use 3G. This finding contradicts the TAM and most of the revised literature review. Therefore, providers should focus on promotion in order to communicate the features and benefits of 3G cellular data. Focusing on raising awareness towards this service and its special attributes to make it more convenient to use. In addition, providers should focus on promoting the applications that can be used by the 3G services; especially the least used applications as the results showed in table (5).

Service providers may need to pay attention to the perceived behavioral control construct. They should position the offered service in ways that take into account the quality of the service, coverage, and speed. Consequently, appropriate pricing strategies should be considered in order to reduce the perceptions of high subscription fees compared to the Israeli cellular data providers.

The research results revealed that Palestinian users are affected by subjective norms, which may indicate that the "the word of mouth" influence their usage decision. Therefore, providers should brand their service as a positive experience. Furthermore, based upon the research results it is recommended to concentrate on the enjoyment aspects. Promotion campaigns should build a proper image about the pleasure and entertainment that are associated with using 3G. However, advertising is considered the main element of promotion because it can reach a large audience. They should concentrate on internet advertising as a digital marketing channel, especially social media as it is the highly used applications by Palestinian users, in addition to information and reminder advertising to inform the customers about 3G packages and services along with reminder advertising to stimulate users to continue purchasing the offered packages.

At last, the investment in 3G cellular data services, which took a long time, has not gained Palestinian customers preferences compared to services offered by Israeli' providers. Thus, local telecommunication companies should offer competitive and motivating services to increase usage rates. In addition, The Ministry of Communication and Information Technology should monitor package prices periodically besides monitoring the offered services and ensuring that it meets the customers' needs. In addition, the Ministry should devote part of its resource for raising the awareness about these services at both the individual and business levels.

## 5.2 Limitations

Based on the empirical results, there are a number of limitations in this study. The first is concerned with data gathering, because of the limited consumer behavior researches towards technology devices and services in Palestine. In addition, there is a lack of statistical publications regarding the rate of adoption and the number of 3G mobile data users. There was the obstacle to reach the research sample that included respondents who have used and currently use 3G cellular data.

The second limitation was observed during the distribution of questionnaires where many people were using Israeli SIM cards. As a result, the time taken to fill in the questionnaires by the respondents who adopted 3G data services from local companies required more time than planned.

## 5.3 Directions for future research:

The first direction for future research is to include the awareness factor, to measure individuals' awareness about 3G cellular data benefits and its features that could improve the ability to predict the usage intention. In addition, this research targeted individual respondents; future research can analyze the impact of introducing 3G to businesses.

As discussed earlier, this research was limited to Bethlehem Governorate. To extend the results and have more insights into the similarities and differences between the other cities, similar research is recommended to be conducted to provide high generalizability.

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## 5.4 Conclusion:

This research examined how Palestinian users respond to newly launched cellular data services (3G). The main objective of this research was to determine the factors that influence the consumer's usage behavioral intention.

The research results provided insights about characteristic differences among respondent groups, beliefs, perceptions, and behavioral intentions to use 3G cellular data services. In addition, understanding the factors influencing the consumer's intention to use, assist in directing the marketing strategies towards increasing users' acceptance and spreading this phenomenon.

To conclude, perceived behavioral control, perceived enjoyment, and subjective norms are the factors that influence Palestinian consumers' usage intentions.

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# APPENDICES

## Appendix A

Questionnaire (Arabic Language)


الأخ الكريم، الأخت الكريمة

تحية طيبة و احترام،،،

**يمثل هذا الاستبيان أحد الجوانب الهامة في اعداد أطروحة الماجستير في إدارة الأعمال من جامعة القدس**. والتي تهدف الى دراسة العوامل المؤثرة على سلوك المستخدم إتجاه خدمة الجيل الثالث، والذي قامت شركتا جوال والوطنية بطرحه للاستخدام في بداية العام الحالي 2018. أرجو منكم التكرم بالإجابة على هذه الأسئلة المرفقة **من خلال وضع إشارة ( X ) على الإجابة التي ترونها ملائمة**.

يرجى العلم أن الإجابة على هذا الاستبيان محاطة بالسرية التامة ولا تستخدم إلا في اغراض إنجاز الرسالة. شاكرة لكم مقدماً ما تقدم منكم من إجابات و ما بذلتموه من جهد في إنجاز هذا الاستبيان و الوصول إلى أفضل النتائج.

**شكرا لتعاونكم وحسن استجابتكم،،،**

**القسم الأول : معلومات العامة**

**يرجى الإجابة على الأسئلة التي تتضمن معلومات عامة بوضع إشارة ( X )**

**1- الجنس :**

☐ ذكر ☐ أنثى

**2- العمر:**

☐ أقل من 30 سنة ☐ من 31 إلى 40 سنة ☐ من 41 إلى 50 ☐ أكثر من 50 سنة

**3- المؤهل العلمي:**

☐ **دبلوم** ☐ **بكالوريوس**

☐ **ماجستير** ☐ **دكتوراة**

☐ **غير ذلك**

**4- معدل الدخل الشهري:**

☐ أقل من 2000 شيكل ☐ من 2001- 4000 شيكل

☐ من 4001- 6000 شيكل ☐ من 6001- 8000 شيكل

☐ أكثر من 8001 شيكل

**5- المهنة:**

☐ موظف ☐ أعمال حرة

☐ طالب ☐ أخرى

**6- مكان السكن:**

☐ بيت لحم ☐بيت جالا ☐الريف الشرقي (التعامرة, زعترة)

☐بيت ساحور ☐مخيمات ☐ الريف الغربي (بتير, نحالين)

☐ مدينة الدوحة ☐ مدينة الخضر

**7- بين مدى استخدام التطبيقات التالية على هاتفك الذكي:**

| التطبيق/المقياس | عال جدا | عال | متوسط | منخفض | متدن جدا |
|---|---|---|---|---|---|
| البريد الالكتروني(الايميل) | | | | | |
| تطبيقات التواصل الاجتماعي(فيسبوك،انستغرام،...) | | | | | |
| تطبيقات الالعاب والتسلية | | | | | |
| تصفح الانترنت | | | | | |
| قراءة كتب،مجلات, ومقالات | | | | | |
| التسوق الالكتروني | | | | | |
| تطبيقات السفر | | | | | |
| التطبيقات البنكية | | | | | |
| مشاهدة الافلام والاستماع الى الأغاني | | | | | |
| تحميل الملفات | | | | | |
| إجراء المكالمات الهاتفية | | | | | |
| GPS نظام تحديد المواقع العالمي(مثل تطبيقات المواصلات | | | | | |
| تطبيق كاميرات المراقبة | | | | | |

**أخرى**
**الرجاء التحديد:**

_____
_____
_____

**القسم الثاني : فيما يلي مجموعة من العبارات تتعلق بالعوامل المؤثرة على استخدام الجيل الثالث من الاتصالات ( 3G) وهو عبارة عن الحصول على خدمة الانترنت خارج المنزل, وذلك مقارنة مع الوضع السابق, يرجى التكرم باختيار الإجابة المناسبة بعد قراءة العبارات الآتية:**

| | العبارات | أوافق بشدة | أوافق | محايد | لا أوافق | لا أوافق بشدة |
|---|---|---|---|---|---|---|
| 1 | اصبح استخدام الخدمة سهلا | | | | | |
| 2 | اصبح استخدام التطبيقات اسهل مع خدمة 3G | | | | | |
| 3 | اصبح الاستخدام اكثر وضوحا | | | | | |
| 4 | اصبح الاستخدام سريع الفهم | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 5 | يعزز الاستخدام المكانة الاجتماعية | | | | | |
| 6 | جاء استخدام الخدمة بنصيحة الاصدقاء | | | | | |
| 7 | يعتقد زملائي في العمل/الدراسة ان استعمال الخدمة خيار ذكي | | | | | |
| 8 | اثرت العائلة بشكل ايجابي على قرار الاستخدام | | | | | |
| 9 | تلعب وظيفتك دورا في استخدام الخدمة | | | | | |
| 10 | استخدام الخدمة يفيد في مجال البحث | | | | | |
| 11 | تحسن الخدمة من من اداءك الوظيفي | | | | | |
| 12 | استفيد من الخدمة في وقت الفراغ | | | | | |
| 13 | توفر الخدمة وسيلة تسلية | | | | | |
| 14 | تعتبر الخدمة مشوقة | | | | | |
| 15 | تعتبر رسوم الاشتراك مناسبة للخدمات التي احصل عليها | | | | | |
| 16 | استخدام الخدمة مكلف | | | | | |
| 17 | اعتقد بأنها خيار مجدي اقتصاديا اكثر من الانترنت المنزلي | | | | | |
| 18 | جودة الخدمة تساهم في استمرار الاسنخدام | | | | | |
| 19 | نوعية الخدمة تساهم في استمرار الاستخدام | | | | | |
| 20 | تغطية الشبكة تساهم في استمرار الاستخدام | | | | | |
| 21 | سرعة الخدمة تسهل الاستخدام | | | | | |
| 22 | لديك النية في الاستمرار في استعمال 3G خلال الثلاثة اشهر القادمة | | | | | |
| 23 | لديك النية في تكرار الاستخدام | | | | | |
| 24 | تفضل استخدام WIFIبدلا من خدمة 3G | | | | | |

**القسم الثالث: بين مدى موافقتك على الانتقال من تكنولوجيا الجيل الثاني الى الجيل الثالث حسب البنود التالية:**

| البنود | 2G | 3G | أوافق بشدة | أوافق | محايد | لا أوافق | لا أوافق بشدة |
|---|---|---|---|---|---|---|---|
| **التغطية** | نطاق ضيق | نطاق اوسع | | | | | |
| **مدى التوافق** | لا يتوافق مع الهواتف الذكية | يتوافق مع الهواتف الذكية | | | | | |
| **الامان** | درجة متوسطة من الحماية | درجة عالية من الحماية | | | | | |
| **السرعة** | سرعة قليلة | سرعة كبيرة | | | | | |
| **الميزات** | خدمات وتطبيقات محدودة | خدمات و تطبيقات اكبر | | | | | |

الطالبة: رنين يوسف
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الهاتف المحمول: 0568709003

# Appendix B

Statistical Tables

| Number | | | Frequency | Percentage |
|---|---|---|---|---|
| 1 | Gender | Male | 203 | 50.5% |
| | | Female | 199 | 49.5% |
| 2 | Age | Less Than 30 | 237 | 59.0% |
| | | 30 – 40 | 103 | 25.6% |
| | | 41 – 50 | 43 | 10.7% |
| | | More than 50 | 19 | 4.7% |
| 3 | Academic qualification | Diploma | 66 | 16.4% |
| | | Bachelor | 219 | 54.5% |

| | | | | |
|---|---|---|---|---|
| | | Master | 48 | 11.9% |
| | | PHD | 5 | 1.2% |
| | | Other | 64 | 15.9% |
| 4 | Average month salary | Less than 2000 | 144 | 35.8% |
| | | 2000 – 4000 | 161 | 40.0% |
| | | 4001 – 6000 | 61 | 15.2% |
| | | 6001 – 8000 | 23 | 5.7% |
| | | More than 8000 | 13 | 3.2% |
| 5 | Occupation | Employee | 213 | 53.0% |
| | | Free Business | 54 | 13.4% |
| | | Student | 112 | 27.9% |
| | | Other | 23 | 5.7% |
| 6 | Address | Bethlehem | 70 | 17.4% |
| | | Beitjala | 74 | 18.4% |
| | | Eastern countryside | 61 | 15.2% |
| | | Beitsahoor | 106 | 26.4% |
| | | Refugee camps | 32 | 8.0% |
| | | Western Countryside | 13 | 3.2% |
| | | Al-Doha | 39 | 9.7% |
| | | Al-Khader | 7 | 1.7% |

Characteristics of participants according to the demographic distribution

| Number | Person | Sign | Field | Number | Field | Person | Sign |
|---|---|---|---|---|---|---|---|
| 1 | .810** | 0.00 | Perceived ease of use | 5 | Subjective norms | .756** | 0.00 |
| 2 | .819** | 0.00 | | 6 | | .752** | 0.00 |
| 3 | .830** | 0.00 | | 7 | | .691** | 0.00 |
| 4 | .689** | 0.00 | | 8 | | .726** | 0.00 |

| Number | Person | Sign | Field | Number | Person | Sign | Field |
|---|---|---|---|---|---|---|---|
| 9 | .820** | 0.00 | Perceived Usefulness | 12 | Perceived enjoyment | .772** | 0.00 |
| 10 | .698** | 0.00 | | 13 | | .808** | 0.00 |
| 11 | .736** | 0.00 | | 14 | | .808** | 0.00 |
| 15 | .431** | 0.00 | Perceived Behavioral control | 22 | Behavioral Intention | .882** | 0.00 |
| 16 | .396** | | | 23 | | .889** | 0.00 |
| 17 | .573** | | | 24 | attitudes | 1 | 0.00 |
| 18 | .716** | | | | | | |
| 19 | .682** | | | | | | |
| 20 | .644** | | | | | | |
| 21 | .641** | | | | | | |

Pearson correlation coefficient and statistical significance

| Cronbach's Alpha | N of Items |
|---|---|
| 0.865 | 24 |

Cronbach Alpha

| | Mean | Std. Deviation | Degree |
|---|---|---|---|
| Social | 4.23 | .914 | High |
| Phone | 4.01 | 1.136 | High |
| Browsing | 4.00 | .907 | High |
| Watching | 3.59 | 1.233 | Medium |
| Email | 3.53 | 1.205 | Medium |
| Download | 3.31 | 1.211 | Medium |
| Games | 3.27 | 1.315 | Medium |
| Reading | 2.94 | 1.131 | Medium |
| Camera | 2.84 | 1.469 | Medium |
| GPS | 2.80 | 1.259 | Low |
| Banking | 2.65 | 1.345 | Low |
| E-shopping | 2.58 | 1.298 | Low |
| Travel | 2.34 | 1.293 | Low |

Means and standard deviation arranged by descending order for Smart phone apps

| | Mean | Std. Deviation | Degree |
|---|---|---|---|
| Perceived ease of use | 4.00 | .65 | High |
| Perceived enjoyment | 3.90 | .74 | High |
| Attitudes | 3.88 | 1.01 | High |
| Behavioral Intention | 3.83 | .90 | High |
| Perceived Usefulness | 3.71 | .81 | High |
| Perceived Behavioral control | 3.66 | .59 | Medium |
| Subject norms | 3.40 | .78 | Medium |
| Total | 3.73 | .49 | High |

Means and standard deviation for the factors

| | | Mean | Std. Deviation | Degree |
|---|---|---|---|---|
| Perceived ease of use | Easy to use 3G | 4.10 | .859 | high |
| | Using applications has become easier with 3G | 4.07 | .831 | high |
| | Using 3G is clear | 4.07 | .766 | high |
| | Easy to understand | 3.77 | .870 | high |
| Subject norms | My Colleagues think 3G is a smart choice | 3.52 | 1.034 | Medium |
| | Using 3G enhances my social role | 3.39 | 1.062 | Medium |
| | Family has a positive influence on using 3G | 3.36 | 1.088 | Medium |
| | Friends advised me to use 3G | 3.34 | 1.115 | Medium |
| Perceived Usefulness | 3G is beneficial in research | 3.82 | 1.041 | high |
| | 3G improves job performance | 3.66 | 1.066 | Medium |
| | My job induce me to use 3G | 3.65 | 1.125 | Medium |
| Perceived enjoyment | Using 3G in free time | 4.11 | .875 | high |
| | 3G is entertaining | 3.96 | .872 | high |
| | 3G is interesting | 3.64 | 1.065 | Medium |
| Perceived Behavioral control | Speed of service affect its use | 4.03 | .939 | high |
| | Network coverage is the most important factors affecting the use of 3G | 4.00 | .923 | high |
| | You are satisfied with the quality of service | 3.95 | .883 | high |
| | The quality of services provided meets my needs | 3.80 | .962 | high |
| | Using the service is expensive for me | 3.36 | 1.165 | Medium |
| | 3G is more feasible than home internet | 3.28 | 1.160 | Medium |
| | Subscription fees are appropriate for the services I receive | 3.21 | 1.192 | Medium |
| Behavioral Intention | You have the intention to continue to use 3G over the next three months | 3.85 | 1.012 | high |
| | You have the intention to frequently use 3G | 3.83 | 1.041 | high |
| Attitudes | Prefer Wi-Fi over 3G | 3.89 | 1.016 | high |

Descriptive table

| | Mean | Std. Deviation | Degree |
|---|---|---|---|
| Coverage | 4.08 | .917 | High |
| Features | 4.01 | .875 | High |
| Speed | 3.98 | .849 | High |
| Compatibility | 3.98 | .872 | High |
| Security | 3.87 | .937 | High |

Means and standard deviation (Comparison between 2G and 3G)

| Fields | Gender | N | Mean | Std. Deviation | t | Sig |
|---|---|---|---|---|---|---|
| Perceived ease of use | MALE | 203 | 3.9901 | .62924 | -.363 | .717 |
| | FEMALE | 199 | 4.0138 | .67756 | | |
| Subjective norms | MALE | 203 | 3.4015 | .80424 | -.071 | .944 |
| | FEMALE | 199 | 3.4070 | .76963 | | |
| Perceived Usefulness | MALE | 203 | 3.6929 | .86578 | -.503 | .615 |
| | FEMALE | 199 | 3.7337 | .75283 | | |
| Perceived enjoyment | MALE | 203 | 3.9392 | .73355 | 1.050 | .294 |
| | FEMALE | 199 | 3.8610 | .76041 | | |
| Perceived Behavioral control | MALE | 203 | 3.6875 | .62277 | .827 | .409 |
| | FEMALE | 199 | 3.6382 | .57211 | | |
| Behavioral Intention | MALE | 203 | 3.8177 | .94334 | -.458 | .647 |
| | FEMALE | 199 | 3.8593 | .87490 | | |
| Attitude | MALE | 203 | 3.8227 | 1.05684 | -1.305 | .193 |
| | FEMALE | 199 | 3.9548 | .97077 | | |
| Total | MALE | 203 | 3.7389 | .49154 | .106 | .916 |
| | FEMALE | 199 | 3.7337 | .50140 | | |

Independent sample T-test

| Test of Homogeneity of Variances | | | | |
|---|---|---|---|---|
| | Levene Statistic | df1 | df2 | Sig. |
| **Perceived ease of use** | 2.833 | 3 | 398 | .038 |
| **Subjective norms** | .129 | 3 | 398 | .943 |
| **Perceived Usefulness** | .440 | 3 | 398 | .724 |
| **Perceived enjoyment** | .971 | 3 | 398 | .406 |
| **Perceived Behavioral control** | 1.068 | 3 | 398 | .362 |
| **Behavioral Intention** | .537 | 3 | 398 | .657 |
| **Attitude** | 1.741 | 3 | 398 | .158 |
| | .420 | 3 | 398 | .739 |

Test of Homogeneity of Variances

| | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Perceived ease of use | Between Groups | 2.564 | 3 | .855 | 2.020 | .111 |
| | Within Groups | 168.372 | 398 | .423 | | |
| | Total | 170.936 | 401 | | | |
| Subjective norms | Between Groups | 2.530 | 3 | .843 | 1.368 | .252 |
| | Within Groups | 245.408 | 398 | .617 | | |
| | Total | 247.938 | 401 | | | |
| Perceived Usefulness | Between Groups | 5.784 | 3 | 1.928 | 2.974 | .032** |
| | Within Groups | 258.016 | 398 | .648 | | |
| | Total | 263.800 | 401 | | | |
| Perceived enjoyment | Between Groups | 3.703 | 3 | 1.234 | 2.232 | .084 |
| | Within Groups | 220.094 | 398 | .553 | | |
| | Total | 223.798 | 401 | | | |
| Perceived Behavioral control | Between Groups | 1.834 | 3 | .611 | 1.719 | .163 |
| | Within Groups | 141.563 | 398 | .356 | | |
| | Total | 143.396 | 401 | | | |
| Behavioral Intention | Between Groups | 7.328 | 3 | 2.443 | 2.999 | .031** |
| | Within Groups | 324.162 | 398 | .814 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Total | 331.490 | 401 | | | |
| Attitude | Between Groups | 1.373 | 3 | .458 | .441 | .724 |
| | Within Groups | 412.590 | 398 | 1.037 | | |
| | Total | 413.963 | 401 | | | |
| TOTAL | Between Groups | 2.324 | 3 | .775 | 3.203 | .023** |
| | Within Groups | 96.261 | 398 | .242 | | |
| | Total | 98.584 | 401 | | | |

ANOVA Test

**Multiple Comparisons**

Dependent Variable: TOTAL

LSD

| (I) Age | (J) Age | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| less than 30 | 30 - 40 | .01730 | .05804 | .766 | -.0968 | .1314 |
| | 41 - 50 | .10435 | .08152 | .201 | -.0559 | .2646 |
| | more than 50 | .34267* | .11726 | .004 | .1121 | .5732 |
| 30 – 40 | less than 30 | -.01730 | .05804 | .766 | -.1314 | .0968 |
| | 41 - 50 | .08705 | .08929 | .330 | -.0885 | .2626 |
| | more than 50 | .32537* | .12279 | .008 | .0840 | .5668 |
| 41 – 50 | less than 30 | -.10435 | .08152 | .201 | -.2646 | .0559 |
| | 30 - 40 | -.08705 | .08929 | .330 | -.2626 | .0885 |
| | more than 50 | .23832 | .13548 | .079 | -.0280 | .5047 |

| | | | | | | |
|---|---|---|---|---|---|---|
| more than 50 | less than 30 | -.34267* | .11726 | .004 | -.5732 | -.1121 |
| | 30 – 40 | -.32537* | .12279 | .008 | -.5668 | -.0840 |
| | 41 – 50 | -.23832 | .13548 | .079 | -.5047 | .0280 |

| | | N | Mean | Std. Deviation |
|---|---|---|---|---|
| PEOU | less than 30 | 237 | **4.04** | .60 |
| | 30 – 40 | 103 | **3.97** | .79 |
| | 41 – 50 | 43 | **4.00** | .51 |
| | more than 50 | 19 | **3.67** | .66 |
| SN | less than 30 | 237 | **3.45** | .79 |
| | 30 – 40 | 103 | **3.35** | .80 |
| | 41 – 50 | 43 | **3.31** | .73 |
| | more than 50 | 19 | **3.14** | .70 |
| | Total | 402 | **3.40** | .78 |
| PU | less than 30 | 237 | **3.73** | .79 |
| | 30 – 40 | 103 | **3.70** | .85 |
| | 41 – 50 | 43 | **3.82** | .74 |
| | more than 50 | 19 | **3.19** | .70 |
| PE | less than 30 | 237 | **3.92** | .75 |
| | 30 – 40 | 103 | **3.94** | .74 |
| | 41 – 50 | 43 | **3.80** | .77 |
| | more than 50 | 19 | **3.50** | .52 |
| PBC | less than 30 | 237 | **3.67** | .62 |
| | 30 – 40 | 103 | **3.72** | .57 |
| | 41 – 50 | 43 | **3.53** | .51 |

| | | | | |
|---|---|---|---|---|
| | more than 50 | 19 | **3.47** | .48 |
| BIOU | less than 30 | 237 | **3.89** | .91 |
| | 30 – 40 | 103 | **3.89** | .85 |
| | 41 – 50 | 43 | **3.63** | 1.01 |
| | more than 50 | 19 | **3.34** | .76 |
| ATT | less than 30 | 237 | **3.92** | 1.04 |
| | 30 – 40 | 103 | **3.86** | 1.04 |
| | 41 – 50 | 43 | **3.74** | .84 |
| | more than 50 | 19 | **3.84** | .83 |
| TOTAL | less than 30 | 237 | **3.76** | .47 |
| | 30 – 40 | 103 | **3.75** | .54 |
| | 41 – 50 | 43 | **3.66** | .46 |
| | more than 50 | 19 | **3.42** | .45 |

Descriptive table (Age)

| Test of Homogeneity of Variances | | | | |
|---|---|---|---|---|
| | Levene Statistic | df1 | df2 | Sig. |
| **Perceived ease of use** | .540 | 4 | 397 | .706 |
| **Subjective norms** | .984 | 4 | 397 | .416 |
| **Perceived Usefulness** | .397 | 4 | 397 | .811 |
| **Perceived enjoyment** | 1.073 | 4 | 397 | .369 |
| **Perceived Behavioral control** | .580 | 4 | 397 | .677 |
| **Behavioral Intention** | 2.504 | 4 | 397 | .042 |
| **Attitude** | 1.182 | 4 | 397 | .318 |
| **Total** | .281 | 4 | 397 | .891 |

Test of Homogeneity of Variances

**ANOVA**

| | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| **Perceived ease of use** | Between Groups | 3.192 | 4 | .798 | 1.889 | **.112** |
| | Within Groups | 167.744 | 397 | .423 | | |
| | Total | 170.936 | 401 | | | |
| **Subjective norms** | Between Groups | .581 | 4 | .145 | .233 | **.920** |
| | Within Groups | 247.357 | 397 | .623 | | |
| | Total | 247.938 | 401 | | | |
| **Perceived Usefulness** | Between Groups | 7.974 | 4 | 1.994 | 3.094 | **.016**** |
| | Within Groups | 255.826 | 397 | .644 | | |
| | Total | 263.800 | 401 | | | |
| **Perceived enjoyment** | Between Groups | 1.223 | 4 | .306 | .545 | **.702** |
| | Within Groups | 222.574 | 397 | .561 | | |
| | Total | 223.798 | 401 | | | |
| **Perceived Behavioral control** | Between Groups | 2.153 | 4 | .538 | 1.513 | **.198** |
| | Within Groups | 141.243 | 397 | .356 | | |
| | Total | 143.396 | 401 | | | |
| **Behavioral Intention** | Between Groups | 6.683 | 4 | 1.671 | 2.042 | **.088** |
| | Within Groups | 324.807 | 397 | .818 | | |
| | Total | 331.490 | 401 | | | |
| **Attitude** | Between Groups | 4.187 | 4 | 1.047 | 1.014 | **.400** |
| | Within Groups | 409.776 | 397 | 1.032 | | |
| | Total | 413.963 | 401 | | | |
| TOTAL | Between Groups | 1.769 | 4 | .442 | 1.813 | **.125** |
| | Within Groups | 96.816 | 397 | .244 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Total | 98.584 | 401 | | | |

**Multiple Comparisons**

Dependent Variable: PU

LSD

| (I) Qualification | (J) Qualification | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval |
|---|---|---|---|---|---|
| | | | | | Lower Bound |
| Diploma | Ba | .05742 | .11272 | .611 | -.1642 |
| | Ma | -.26326 | .15228 | .085 | -.5626 |
| | PHD | .15758 | .37235 | .672 | -.5744 |
| | Other | .26799 | .14083 | .058 | -.0089 |
| Ba | Diploma | -.05742 | .11272 | .611 | -.2790 |
| | Ma | **-.32068*** | .12794 | .013 | -.5722 |
| | PHD | .10015 | .36307 | .783 | -.6136 |
| | Other | .21057 | .11407 | .066 | -.0137 |
| Ma | Diploma | .26326 | .15228 | .085 | -.0361 |
| | Ba | **.32068*** | .12794 | .013 | .0692 |
| | PHD | .42083 | .37723 | .265 | -.3208 |
| | Other | **.53125*** | .15328 | .001 | .2299 |
| PHD | Diploma | -.15758 | .37235 | .672 | -.8896 |
| | Ba | -.10015 | .36307 | .783 | -.8139 |
| | Ma | -.42083 | .37723 | .265 | -1.1625 |
| | Other | .11042 | .37276 | .767 | -.6224 |
| Other | Diploma | -.26799 | .14083 | .058 | -.5449 |
| | Ba | -.21057 | .11407 | .066 | -.4348 |

| | | | | | |
|---|---|---|---|---|---|
| | Ma | **-.53125*** | .15328 | .001 | -.8326 |
| | PHD | -.11042 | .37276 | .767 | -.8432 |

| | | N | Mean | Std. Deviation |
|---|---|---|---|---|
| PEOU | Diploma | 66 | 4.00 | .57 |
| | Ba | 219 | 4.04 | .63 |
| | Ma | 48 | 4.06 | .71 |
| | PHD | 5 | 3.75 | .66 |
| | Other | 64 | 3.81 | .72 |
| SN | Diploma | 66 | 3.44 | .81 |
| | Ba | 219 | 3.37 | .78 |
| | Ma | 48 | 3.43 | .86 |
| | PHD | 5 | 3.25 | .39 |
| | Other | 64 | 3.44 | .74 |
| PU | Diploma | 66 | 3.75 | .76 |
| | Ba | 219 | 3.70 | .80 |
| | Ma | 48 | 4.02 | .84 |
| | PHD | 5 | 3.60 | .59 |
| | Other | 64 | 3.48 | .82 |
| PE | Diploma | 66 | 3.89 | .67 |
| | Ba | 219 | 3.86 | .78 |
| | Ma | 48 | 4.03 | .76 |
| | PHD | 5 | 3.93 | .49 |
| | Other | 64 | 3.92 | .69 |
| PBC | Diploma | 66 | 3.73 | .56 |

| | | | | |
|---|---|---|---|---|
| | Ba | 219 | 3.64 | .58 |
| | Ma | 48 | 3.79 | .63 |
| | PHD | 5 | 3.68 | .32 |
| | Other | 64 | 3.54 | .64 |
| BIOU | Diploma | 66 | 3.82 | .73 |
| | Ba | 219 | 3.81 | .97 |
| | Ma | 48 | 4.16 | .91 |
| | PHD | 5 | 3.90 | .89 |
| | BIOU Other | 64 | 3.69 | .77 |
| ATT | Diploma | 66 | 3.98 | .95 |
| | Ba | 219 | 3.85 | 1.04 |
| | Ma | 48 | 4.02 | 1.08 |
| | PHD | 5 | 4.40 | .54 |
| | Other | 64 | 3.75 | .94 |
| TOTAL | Diploma | 66 | 3.77 | .46 |
| | Ba | 219 | 3.72 | .48 |
| | Ma | 48 | 3.87 | .57 |
| | PHD | 5 | 3.69 | .34 |
| | Other | 64 | 3.63 | .49 |

Descriptive table (Academic qualification)

| Test of Homogeneity of Variances | | | | |
|---|---|---|---|---|
| | Levene Statistic | df1 | df2 | Sig. |
| Perceived ease of use | 1.190 | 4 | 397 | .315 |
| Subjective norms | 1.288 | 4 | 397 | .274 |
| Perceived Usefulness | .516 | 4 | 397 | .724 |
| Perceived enjoyment | 2.315 | 4 | 397 | .057 |
| Perceived Behavioral control | 1.902 | 4 | 397 | .109 |
| Behavioral Intention | 4.811 | 4 | 397 | .001 |
| Attitude | 2.476 | 4 | 397 | .044 |
| Total | 1.256 | 4 | 397 | .287 |

Test of Homogeneity of Variances

ANOVA

| | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Perceived ease of use | Between Groups | 1.350 | 4 | .338 | .790 | .532 |
| | Within Groups | 169.586 | 397 | .427 | | |
| | Total | 170.936 | 401 | | | |
| Subjective norms | Between Groups | 1.240 | 4 | .310 | .499 | .737 |
| | Within Groups | 246.698 | 397 | .621 | | |
| | Total | 247.938 | 401 | | | |
| Perceived Usefulness | Between Groups | 8.858 | 4 | 2.215 | 3.448 | .009* |
| | Within Groups | 254.942 | 397 | .642 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Total | 263.800 | 401 | | | |
| Perceived enjoyment | Between Groups | 1.021 | 4 | .255 | .455 | .769 |
| | Within Groups | 222.776 | 397 | .561 | | |
| | Total | 223.798 | 401 | | | |
| Perceived Behavioral control | Between Groups | 1.214 | 4 | .304 | .847 | .496 |
| | Within Groups | 142.182 | 397 | .358 | | |
| | Total | 143.396 | 401 | | | |
| Behavioral Intention | Between Groups | 6.100 | 4 | 1.525 | 1.861 | .117 |
| | Within Groups | 325.390 | 397 | .820 | | |
| | Total | 331.490 | 401 | | | |
| Attitude | Between Groups | 4.434 | 4 | 1.108 | 1.075 | .369 |
| | Within Groups | 409.529 | 397 | 1.032 | | |
| | Total | 413.963 | 401 | | | |
| TOTAL | Between Groups | .929 | 4 | .232 | .944 | .438 |
| | Within Groups | 97.656 | 397 | .246 | | |
| | Total | 98.584 | 401 | | | |

Salary ANOVA Table

**Multiple Comparisons**

**Dependent Variable: PU**

**LSD**

| (I) Salary | (J) Salary | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval |
|---|---|---|---|---|---|
| | | | | | Lower Bound |
| less than 2000 | 2000 – 4000 | .12813 | .09191 | .164 | -.0526 |

| | | | | | |
|---|---|---|---|---|---|
| | 4001 – 6000 | **-.26351*** | .12242 | .032 | -.5042 |
| | 6001 – 8000 | -.19485 | .17994 | .280 | -.5486 |
| | more 8000 | -.29630 | .23207 | .202 | -.7525 |
| 2000 - 4000 | less than 2000 | -.12813 | .09191 | .164 | -.3088 |
| | 4001 – 6000 | **-.39164*** | .12048 | .001 | -.6285 |
| | 6001 – 8000 | -.32298 | .17863 | .071 | -.6742 |
| | more 8000 | -.42443 | .23105 | .067 | -.8787 |
| 4001 - 6000 | less than 2000 | **.26351*** | .12242 | .032 | .0228 |
| | 2000 – 4000 | **.39164*** | .12048 | .001 | .1548 |
| | 6001 – 8000 | .06866 | .19608 | .726 | -.3168 |
| | more 8000 | -.03279 | .24480 | .894 | -.5140 |
| 6001 - 8000 | less than 2000 | .19485 | .17994 | .280 | -.1589 |
| | 2000 – 4000 | .32298 | .17863 | .071 | -.0282 |
| | 4001 – 6000 | -.06866 | .19608 | .726 | -.4541 |
| | more 8000 | -.10145 | .27806 | .715 | -.6481 |
| more 8000 | less than 2000 | .29630 | .23207 | .202 | -.1599 |
| | 2000 – 4000 | .42443 | .23105 | .067 | -.0298 |
| | 4001 – 6000 | .03279 | .24480 | .894 | -.4485 |
| | 6001 – 8000 | .10145 | .27806 | .715 | -.4452 |

| | | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean |
|---|---|---|---|---|---|---|
| | | | | | | Lower Bound |
| PEOU | less than 2000 | 144 | 4.0521 | .66366 | .05531 | 3.9428 |
| | 2000 - 4000 | 161 | 3.9348 | .63030 | .04967 | 3.8367 |
| | 4001 - 6000 | 61 | 4.0369 | .65802 | .08425 | 3.8684 |
| | 6001 - 8000 | 23 | 4.0870 | .54151 | .11291 | 3.8528 |
| | more 8000 | 13 | 3.9615 | .94011 | .26074 | 3.3934 |
| SN | less than 2000 | 144 | 3.3976 | .77854 | .06488 | 3.2693 |
| | 2000 - 4000 | 161 | 3.3618 | .76490 | .06028 | 3.2427 |
| | 4001 - 6000 | 61 | 3.4549 | .91687 | .11739 | 3.2201 |
| | 6001 - 8000 | 23 | 3.5870 | .70553 | .14711 | 3.2819 |
| | more 8000 | 13 | 3.4423 | .64674 | .17937 | 3.0515 |
| PU | less than 2000 | 144 | 3.7037 | .72272 | .06023 | 3.5847 |
| | 2000 - 4000 | 161 | 3.5756 | .82242 | .06482 | 3.4476 |
| | 4001 - 6000 | 61 | 3.9672 | .82933 | .10619 | 3.7548 |
| | 6001 - 8000 | 23 | 3.8986 | .94514 | .19707 | 3.4898 |
| | more 8000 | 13 | 4.0000 | .96225 | .26688 | 3.4185 |
| PE | less than 2000 | 144 | 3.8889 | .70848 | .05904 | 3.7722 |
| | 2000 - 4000 | 161 | 3.8737 | .72929 | .05748 | 3.7602 |
| | 4001 - 6000 | 61 | 3.9071 | .91516 | .11717 | 3.6727 |
| | 6001 - 8000 | 23 | 4.0725 | .75181 | .15676 | 3.7474 |
| | more 8000 | 13 | 4.0256 | .51750 | .14353 | 3.7129 |
| PBC | less than 2000 | 144 | 3.6002 | .56656 | .04721 | 3.5069 |
| | 2000 - 4000 | 161 | 3.6921 | .57445 | .04527 | 3.6027 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 4001 - 6000 | 61 | 3.6651 | .73257 | .09380 | 3.4775 |
| | 6001 - 8000 | 23 | 3.7764 | .54624 | .11390 | 3.5402 |
| | more 8000 | 13 | 3.7912 | .62710 | .17393 | 3.4123 |
| BIOU | less than 2000 | 144 | 3.7604 | .87500 | .07292 | 3.6163 |
| | 2000 - 4000 | 161 | 3.9037 | .83388 | .06572 | 3.7739 |
| | 4001 - 6000 | 61 | 3.6967 | 1.17359 | .15026 | 3.3961 |
| | 6001 - 8000 | 23 | 3.9783 | .92292 | .19244 | 3.5792 |
| | BIOU more 8000 | 13 | 4.3077 | .52195 | .14476 | 3.9923 |
| ATT | less than 2000 | 144 | 3.8403 | 1.02188 | .08516 | 3.6719 |
| | 2000 - 4000 | 161 | 3.8447 | 1.05213 | .08292 | 3.6810 |
| | 4001 - 6000 | 61 | 4.1311 | 1.04044 | .13321 | 3.8647 |
| | 6001 - 8000 | 23 | 3.9130 | .79275 | .16530 | 3.5702 |
| | more 8000 | 13 | 3.7692 | .59914 | .16617 | 3.4072 |
| TOTAL | less than 2000 | 144 | 3.7141 | .47332 | .03944 | 3.6362 |
| | 2000 - 4000 | 161 | 3.7096 | .47820 | .03769 | 3.6352 |
| | 4001 - 6000 | 61 | 3.7821 | .59926 | .07673 | 3.6286 |
| | 6001 - 8000 | 23 | 3.8714 | .45382 | .09463 | 3.6751 |
| | more 8000 | 13 | 3.8590 | .49609 | .13759 | 3.5592 |

Descriptive table (Salary)

| Test of Homogeneity of Variances | | | | |
|---|---|---|---|---|
| | Levene Statistic | df1 | df2 | Sig. |
| Perceived ease of use | 1.016 | 3 | 398 | .385 |
| Subjective norms | .902 | 3 | 398 | .440 |
| Perceived Usefulness | 2.015 | 3 | 398 | .111 |

| | | | | |
|---|---|---|---|---|
| Perceived enjoyment | .432 | 3 | 398 | .730 |
| Perceived Behavioral control | .623 | 3 | 398 | .600 |
| Behavioral Intention | 4.810 | 3 | 398 | .003 |
| Attitude | 2.040 | 3 | 398 | .108 |
| Total | .602 | 3 | 398 | .614 |

| | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Perceived ease of use | Between Groups | 2.855 | 3 | .952 | 2.253 | .082 |
| | Within Groups | 168.081 | 398 | .422 | | |
| | Total | 170.936 | 401 | | | |
| Subjective norms | Between Groups | 2.743 | 3 | .914 | 1.484 | .218 |
| | Within Groups | 245.195 | 398 | .616 | | |
| | Total | 247.938 | 401 | | | |
| Perceived Usefulness | Between Groups | .781 | 3 | .260 | .394 | .757 |
| | Within Groups | 263.019 | 398 | .661 | | |
| | Total | 263.800 | 401 | | | |
| Perceived enjoyment | Between Groups | 3.026 | 3 | 1.009 | 1.818 | .143 |
| | Within Groups | 220.772 | 398 | .555 | | |
| | Total | 223.798 | 401 | | | |
| Perceived Behavioral control | Between Groups | 1.629 | 3 | .543 | 1.525 | .208 |
| | Within Groups | 141.767 | 398 | .356 | | |
| | Total | 143.396 | 401 | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Behavioral Intention | Between Groups | .695 | 3 | .232 | .279 | .841 |
| | Within Groups | 330.795 | 398 | .831 | | |
| | Total | 331.490 | 401 | | | |
| Attitude | Between Groups | 4.033 | 3 | 1.344 | 1.305 | .272 |
| | Within Groups | 409.929 | 398 | 1.030 | | |
| | Total | 413.963 | 401 | | | |
| TOTAL | Between Groups | .840 | 3 | .280 | 1.140 | .333 |
| | Within Groups | 97.745 | 398 | .246 | | |
| | Total | 98.584 | 401 | | | |

Occupation ANOVA Table

| | | N | Mean | Std. Deviation |
|---|---|---|---|---|
| PEOU | Employee | 213 | 3.9566 | .65709 |
| | Free Busniss | 54 | 3.9213 | .68306 |
| | Student | 112 | 4.1362 | .64714 |
| | Other | 23 | 3.9565 | .49228 |
| SN | Employee | 213 | 3.3779 | .77612 |
| | Free Busniss | 54 | 3.2546 | .84743 |
| | Student | 112 | 3.5067 | .78590 |
| | Other | 23 | 3.5000 | .70308 |
| PU | Employee | 213 | 3.6792 | .78498 |
| | Free Busniss | 54 | 3.7593 | .90980 |
| | Student | 112 | 3.7679 | .81875 |

| | | | | |
|---|---|---|---|---|
| | Other | 23 | 3.6522 | .80075 |
| PE | Employee | 213 | 3.8341 | .73017 |
| | Free Busniss | 54 | 3.9753 | .73787 |
| | Student | 112 | 4.0149 | .76640 |
| | Other | 23 | 3.7826 | .78887 |
| PBC | Employee | 213 | 3.6848 | .57201 |
| | Free Busniss | 54 | 3.5185 | .69172 |
| | Student | 112 | 3.6645 | .60722 |
| | Other | 23 | 3.7950 | .52723 |
| BIOU | Employee | 213 | 3.8592 | .85029 |
| | Free Busniss | 54 | 3.7593 | 1.01749 |
| | Student | 112 | 3.8170 | 1.01119 |
| | Other | 23 | 3.9348 | .64499 |
| ATT | Employee | 213 | 3.9296 | .96628 |
| | Free Busniss | 54 | 3.6481 | 1.06678 |
| | Student | 112 | 3.8929 | 1.06844 |
| | Other | 23 | 4.0435 | 1.06508 |
| TOTAL | Employee | 213 | 3.7216 | .49923 |
| | Free Busniss | 54 | 3.6543 | .50778 |
| | Student | 112 | 3.7958 | .50352 |
| | Other | 23 | 3.7754 | .37537 |

Descriptive table (occupation)

| Test of Homogeneity of Variances | | | | |
|---|---|---|---|---|
| | Levene Statistic | df1 | df2 | Sig. |
| Perceived ease of use | 1.748 | 7 | 394 | .096 |

| | | | | |
|---|---|---|---|---|
| Subjective norms | 1.748 | 7 | 394 | .097 |
| Perceived Usefulness | .870 | 7 | 394 | .530 |
| Perceived enjoyment | .413 | 7 | 394 | .894 |
| Perceived Behavioral control | .871 | 7 | 394 | .530 |
| Behavioral Intention | 1.920 | 7 | 394 | .065 |
| Attitude | 1.842 | 7 | 394 | .078 |
| Total | .822 | 7 | 394 | .569 |

| | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Perceived ease of use | Between Groups | 7.951 | 7 | 1.136 | 2.746 | .009** |
| | Within Groups | 162.985 | 394 | .414 | | |
| | Total | 170.936 | 401 | | | |
| Subjective norms | Between Groups | 9.237 | 7 | 1.320 | 2.178 | .035** |
| | Within Groups | 238.700 | 394 | .606 | | |
| | Total | 247.938 | 401 | | | |
| Perceived Usefulness | Between Groups | 6.066 | 7 | .867 | 1.325 | .237 |
| | Within Groups | 257.734 | 394 | .654 | | |
| | Total | 263.800 | 401 | | | |
| Perceived enjoyment | Between Groups | 5.345 | 7 | .764 | 1.377 | .213 |
| | Within Groups | 218.453 | 394 | .554 | | |
| | Total | 223.798 | 401 | | | |
| Perceived Behavioral control | Between Groups | 2.619 | 7 | .374 | 1.047 | .397 |
| | Within Groups | 140.777 | 394 | .357 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Total | 143.396 | 401 | | | |
| Behavioral Intention | Between Groups | 24.782 | 7 | 3.540 | 4.548 | .000** |
| | Within Groups | 306.708 | 394 | .778 | | |
| | Total | 331.490 | 401 | | | |
| Attitude | Between Groups | 20.197 | 7 | 2.885 | 2.887 | .006** |
| | Within Groups | 393.765 | 394 | .999 | | |
| | Total | 413.963 | 401 | | | |
| TOTAL | Between Groups | 4.561 | 7 | .652 | 2.730 | .009** |
| | Within Groups | 94.024 | 394 | .239 | | |
| | Total | 98.584 | 401 | | | |

ANOVA table for Address

**Multiple Comparisons**

Dependent Variable: TOTAL

LSD

| (I) Adress | (J) Adress | Mean Difference (I-J) | Std. Error | Sig. |
|---|---|---|---|---|
| Bethlehem | Beitjala | -.04324 | .08145 | .596 |
| | Eastern Countryside | .16107 | .08556 | .061 |
| | Beitsahour | **-.17461*** | .07524 | .021 |
| | Refugee camp | -.04349 | .10424 | .677 |
| | Weastern Countryside | -.06282 | .14753 | .670 |
| | Al Doha | -.02009 | .09761 | .837 |
| | Al Khader | .03929 | .19365 | .839 |
| Beitjala | Bethlehem | .04324 | .08145 | .596 |

| | | | | |
|---|---|---|---|---|
| | Eastern Countryside | **.20431*** | .08448 | .016 |
| | Beitsahour | -.13136 | .07400 | .077 |
| | Refugee camp | -.00025 | .10336 | .998 |
| | Weastern Countryside | -.01958 | .14691 | .894 |
| | Al Doha | .02316 | .09666 | .811 |
| | Al Khader | .08253 | .19317 | .669 |
| Eastern Countryside | Bethlehem | -.16107 | .08556 | .061 |
| | Beitjala | **-.20431*** | .08448 | .016 |
| | Beitsahour | **-.33567*** | .07851 | .000 |
| | Refugee camp | -.20456 | .10663 | .056 |
| | Weastern Countryside | -.22389 | .14923 | .134 |
| | Al Doha | -.18115 | .10016 | .071 |
| | Al Khader | -.12178 | .19494 | .533 |
| Beitsahour | Bethlehem | **.17461*** | .07524 | .021 |
| | Beitjala | .13136 | .07400 | .077 |
| | Eastern Countryside | **.33567*** | .07851 | .000 |
| | Refugee camp | .13112 | .09853 | .184 |
| | Weastern Countryside | .11179 | .14356 | .437 |
| | Al Doha | .15452 | .09149 | .092 |
| | Al Khader | .21389 | .19064 | .263 |
| Refugee camp | Bethlehem | .04349 | .10424 | .677 |
| | Beitjala | .00025 | .10336 | .998 |
| | Eastern Countryside | .20456 | .10663 | .056 |
| | Beitsahour | -.13112 | .09853 | .184 |

| | | | | |
|---|---|---|---|---|
| | Weastern Countryside | -.01933 | .16067 | .904 |

| | | N | Mean | Std. Deviation |
|---|---|---|---|---|
| PEOU | Bethlehem | 70 | 3.8857 | .64083 |
| | Beitjala | 74 | 4.0845 | .57677 |
| | Eastern Countryside | 61 | 3.7746 | .84002 |
| | Beitsahour | 106 | 4.1533 | .59419 |
| | Refugee camp | 32 | 4.0469 | .55153 |
| | Weastern Countryside | 13 | 4.0962 | .64983 |
| | Al Doha | 39 | 3.9872 | .64110 |
| | Al Khader | 7 | 3.6786 | .37401 |
| SN | Bethlehem | 70 | 3.2893 | .63793 |
| | Beitjala | 74 | 3.3041 | .85535 |
| | Eastern Countryside | 61 | 3.2213 | .76253 |
| | Beitsahour | 106 | 3.6156 | .78238 |
| | Refugee camp | 32 | 3.4297 | .65450 |
| | Weastern Countryside | 13 | 3.5962 | .65779 |
| | Al Doha | 39 | 3.3910 | .95075 |
| | Al Khader | 7 | 3.6071 | .93382 |
| PU | Bethlehem | 70 | 3.7381 | .79226 |
| | Beitjala | 74 | 3.7072 | .71928 |
| | Eastern Countryside | 61 | 3.5027 | .76648 |
| | Beitsahour | 106 | 3.8428 | .88277 |
| | Refugee camp | 32 | 3.5208 | .93109 |
| | Weastern Countryside | 13 | 3.8205 | .67516 |

| | | | | |
|---|---|---|---|---|
| | Al Doha | 39 | 3.7521 | .72434 |
| | Al Khader | 7 | 3.8571 | 1.10315 |
| | Total | 402 | 3.7131 | .81108 |
| PE | Bethlehem | 70 | 3.8333 | .70597 |
| | Beitjala | 74 | 3.8919 | .72382 |
| | Eastern Countryside | 61 | 3.6885 | .69886 |
| | Beitsahour | 106 | 4.0252 | .76939 |
| | Refugee camp | 32 | 3.9375 | .66901 |
| | Weastern Countryside | 13 | 3.9744 | .76330 |
| | Al Doha | 39 | 4.0000 | .84466 |
| PE | Al Khader | 7 | 3.7619 | 1.03126 |
| PBC | Bethlehem | 70 | 3.6612 | .56318 |
| | Beitjala | 74 | 3.6390 | .53044 |
| | Eastern Countryside | 61 | 3.5808 | .60770 |
| | Beitsahour | 106 | 3.7695 | .67657 |
| | Refugee camp | 32 | 3.7366 | .44309 |
| | Weastern Countryside | 13 | 3.5495 | .68969 |
| | Al Doha | 39 | 3.5604 | .61522 |
| | Al Khader | 7 | 3.4898 | .57058 |
| BIOU | Bethlehem | 70 | 3.9500 | .77155 |
| | Beitjala | 74 | 3.8851 | .87799 |
| | Eastern Countryside | 61 | 3.3197 | 1.05685 |
| | Beitsahour | 106 | 4.0755 | .87231 |
| | Refugee camp | 32 | 3.8594 | .76448 |
| | Weastern Countryside | 13 | 3.8462 | .80064 |
| | Al Doha | 39 | 3.7692 | .90935 |

| | | | | |
|---|---|---|---|---|
| | Al Khader | 7 | 3.4286 | .93223 |
| ATT | Bethlehem | 70 | 3.8571 | 1.05344 |
| | Beitjala | 74 | 4.2432 | .77302 |
| | Eastern Countryside | 61 | 3.6721 | 1.04437 |
| | Beitsahour | 106 | 3.7736 | 1.10654 |
| | Refugee camp | 32 | 3.6875 | .96512 |
| | Weastern Countryside | 13 | 3.6154 | 1.19293 |
| | Al Doha | 39 | 4.0513 | .91619 |
| | Al Khader | 7 | 4.5714 | .53452 |
| TOTAL | Bethlehem | 70 | 3.7000 | .46015 |
| | Beitjala | 74 | 3.7432 | .43373 |
| | Eastern Countryside | 61 | 3.5389 | .51262 |
| | Beitsahour | 106 | 3.8746 | .52562 |
| | Refugee camp | 32 | 3.7435 | .40371 |
| TOTAL | Weastern Countryside | 13 | 3.7628 | .46034 |
| | Al Doha | 39 | 3.7201 | .54561 |
| | Al Khader | 7 | 3.6607 | .57706 |

Descriptive table for address