The Effect of Mobile Phone Application on E-Service Quality in Retail Stores; From Customer Viewpoint.

أثر تطبيق الهاتف المحمول على جودة الخدمة الإلكترونية في متاجر التجزئة: من وجهة نظر الزبون.

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Authorization

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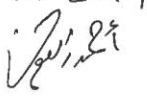
Signature: 

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Examination Committee's Decision

This thesis of the student Ahmad Mohammad Zaitoun, which studies **"The Effect of Mobile Phone Application on E-Service Quality in Retail Stores: From Customer Viewpoint"** has been defined, accepted and approved on 29/01/2019.

Committee Members:

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1	Dr. Abdel-Aziz Ahmad Sharabati	Supervisor and Member	
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I am honestly grateful for my supportive supervisor, ***Dr. Abdel-Aziz Ahmad Sharabati****, who has always helped me whenever I ran into a trouble spot or a question about my research or writing. He consistently allowed this paper to be my own work but steered me to the right direction.*

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Ahmad Mohammad Zaitoun

Dedication

I dedicate this work to my dear family, to the spirit of my father, whose words still accompany me wherever I go and my mother who have been my source of inspiration and gave me strength when I thought of giving up, who continually provide her moral, spiritual, emotional, and helped me day and night during this work. Special thanks to my brother and sisters.

I really cannot express my gratitude and thanks with words to my lovely family and friends; so, I extend my deepest appreciation to them.

Ahmad Mohammad Zaitoun

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The Effect of Mobile Phone Application on E-Service Quality in Retail Stores: From Customer Viewpoint.

Prepared by:
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Abstract

Purpose: Mobile phone application has appeared as a key technology tool for organizations to retain customers and provide the expected services, which attempt to serve customers and accomplish the standards of services provided by online purchasing to achieve e-service quality. Therefore, this study aims to investigate the effect of mobile phone application sub-variables (usability, availability, information, security, and privacy) on e-service quality of retail stores.

Design/Methodology/Approach: To actualize this study. Data were collected from 210 customer by questionnaire, from 20 retail stores in Amman, Jordan. After confirming the normality, validity and reliability of the tool, the descriptive analysis carried out, and the correlation between variables checked. Finally, the effect tested by multiple regression.

Findings: results show that customers agree on the high importance of mobile phone application sub-variables, usability rated the highest importance, followed by information, then privacy, security, availability, respectively. Moreover, the respondents agree to the high importance of e-service quality dimensions, shows that respondents highly agree on e-service quality dimensions. Ease of use has rated highest importance, followed by fulfilment, then effectiveness, responsiveness, reliability, respectively.

Practical and Managerial Implications: Integrating mobile phone application in retail business is becoming mandatory not as a choice only, for its benefits for retail stores and customers. Therefore, including mobile phone application in retail stores' process to serve customers as expected is important.

Limitations/Recommendations: The current study was conducted on Jordanian retail stores. Therefore, it recommends future researchers to collect more data over a longer period of time to check the current model validity and measuring instrument. It also recommends carrying out similar studies on other areas in Jordan and outside Jordan to ensure that results can be generalizable.

Originality/Value: This study is one of the few studies to investigate the effect of mobile phone application on e-service quality of retail stores; from customer viewpoint in the world, the study model was developed from various sources to formulate a new idea of mobile phone application and e-service quality.

Keywords: Mobile Phone Application, E-Service Quality, Retail Stores.

أثر تطبيق الهاتف المحمول على جودة الخدمة الإلكترونية في متاجر التجزئة: من وجهة نظر الزبون.

إعداد:
أحمد محمد زيتون
إشراف:
الدكتور عبد العزيز أحمد الشرباتي

الملخص

الغرض: برز تطبيق الهاتف المحمول كأداة تكنولوجية رئيسية للمؤسسات للاحتفاظ بالعملاء وتقديم الخدمات المتوقعة، والتي تهدف الى خدمة العملاء وتحقيق معايير الخدمات المقدمة لهم عندما يقومون بالشراء عبر الإنترنت لتحقيق جودة الخدمة الإلكترونية. وبالتالي تهدف هذه الدراسة الى بحث إثر المتغيرات الفرعية لتطبيق الهاتف المحمول (قابلية الاستخدام، مدى التوفر للاستخدام، المعلومات، الحماية، الخصوصية) على جودة الخدمة الإلكترونية لمتاجر التجزئة.

التصميم/الاجراءات: من أجل تطبيق هذه الدراسة. جمعت البيانات من 210 زبون ممن يقومون بالشراء من 20 متجر تجزئة في عمان، الاردن بواسطة الاستبانة. وبعد التأكد من التوزيع الطبيعي للإجابات وصدق وثبات الأداة، تم إجراء التحليل الوصفي والتحقق من الارتباط بين المتغيرات. وأخيرًا، تم اختبار الأثر بواسطة الانحدار المتعدد.

النتائج: أظهرت النتائج أن زبائن متاجر التجزئة يتفقون على اهمية عالية لكافة متغيرات تطبيق الهاتف المحمول، حيث ان قابلية الاستخدام حصلت على أكبر اهمية من وجهة نظر الزبائن، تليها المعلومات التي يوفرها تطبيق الهاتف المحمول ومن ثم الخصوصية، وجاء بعدها مدى امان استخدام الهاتف المحمول، واخيرا مدى توفر تطبيق الهاتف المحمول لاستخدام من قبل الزبائن.

التطبيقات العملية والإدارية: أصبح اليوم استخدام تطبيق الهاتف المحمول في تجارة التجزئة إجباري وليس اختياري. بما في ذلك منفعة لتجار التجزئة والزبائن. لهذا ادخال تطبيق الهاتف المحمول في عمليات تجارة التجزئة لخدمة الزبون كما هو متوقع من قبله امر مهم للغاية.

المحددات/التوصيات: تم إجراء هذه الدراسة على متاجر التجزئة في عمان، الاردن. لذلك توصي هذه الدراسة إجراء أبحاث مستقبلية لجمع المزيد من البيانات على مدار فترة أطول للتحقق من صدق وثبات النموذج الحالي وأداة القياس. توصى الدراسة بإجراء مزيد من الأبحاث لتشمل مناطق اخرى في الأردن وخارج الأردن للتأكد من إمكانية تعميم النتائج.

الأصالة / القيمة: هذه الدراسة هي من الدراسات القليلة التي تبحث موضوع أثر تطبيق الهاتف المحمول على جودة الخدمة الالكترونية في متاجر التجزئة: من وجهة نظر الزبون في العالم. تم تطوير انموذج الدراسة من عدة مصادر مختلفة لصياغة فكرة جديدة عن تطبيق الهاتف المحمول وجودة الخدمة الالكترونية.

الكلمات المفتاحية: تطبيق الهاتف المحمول، جودة الخدمة الالكترونية، متاجر التجزئة.

Chapter One: Background of The Study

Introduction:

Today, people can order whatever they want to from anywhere they wish anytime. Internet saves a lot of effort to buy goods and provides unique services by using different tools to do the job such as computers, laptops, and mobile phones, these tools can fulfil customer needs and expectations, it takes a click to get goods wherever customers want. With the evolving mobile devices that are becoming necessary to customers. Nowadays, customers are using mobile phone applications in their smartphones heavily and they consider them as a modern tool to satisfy their needs as well as, to find new services available in the market. Retailers find that to keep their competitive states it is mandatory to use this modern tool to communicate with their customers and to meet their expectations. The competition is evolving to reach customers. Therefore, companies need to update their communication tools regularly to be able to reach their customers and convey their messages more effectively. Retail stores are competing to keep their customers and retain them for a long time through unique services, which will lead to maintain market share and increase growth. Recently, a new concept appeared on the surface, E-service quality, which leads to attention that even services that are introduced by electronic services using the internet or online shopping need to meet customer expectations to compete against rivals in the marketplace.

Many studies had discussed the use of modern technology to keep and reach out to new customers with unique services, Jeon, et. al. (2012) said that the recent technology development related to electronic devices applications created many changes in all aspects of our life. Bahrami, et. al. (2012) stated that new advances in technology can help organizations to contact, reach customers, and provide feedback to act quickly in markets. As mentioned in the introduction that customers use different tools to

communicate Meskini, et. al. (2013) found that mobile is the favourite communications tool used by people around the world and it has many applications that satisfy customer needs. Moreover, Prabhavathy, et. al. (2015) stated that in modern life individuals are more reliant on mobile rather than any other electronic devices, mobiles act like mini - laptops with the mobile communication facility. Azizi, et. al. (2016) said that competition among companies is increasing, and to be able to sustain the business, companies should develop unique services. Seelan and Anuar (2017) stated that technology could create competitive advantage such as using mobile application.

Kastner, et. al. (2010) mentioned that mobile phone application supports customers' purchases and help to save their money and time. Fraser, et. al. (2011) said that there is an added value for firms that use mobile applications for its operation and can help firms to be more competitive in the market. According to Ibrahim, et. al. (2014) using mobile phone application can give to business and persons unique advantage by the availability of the products compression all day online, also it can expand market share and generate more profit to the business. Heffner, et. al. (2015) stated that mobile phone applications (apps) can be used as an advantage because of the low prices of the app and providing real -time services. At the same time, Jung and Yim (2016) stated that mobile apps are easy to use for communication to create excellent service to customers. Bilgihan, et. al. (2016) said that customers that use online shopping are feeling satisfied and can get them a good experience with reflects the firms to gain the advantage in the market. The Statistic Portal Website (2017) reported that the customers used mobile application heavily to get information about products/services. For example, during March 2017, customers downloaded 2.8 million applications (apps) via Android (Google Play), while customers downloaded 2.2 million Apple's Application Storethrough Apple's Application

Store, finally 1.5 million downloaded from Windows Store, Amazon Appstore, and Blackberry World.

When using a new technology like mobile application there are some standards to be applied like (Service quality), the first introduction of service quality was by Parasuraman, et. al (1988) he mentioned 22 items for measure service quality and called it (SERVQUAL) for evaluating customer perception of service quality in retailing companies. With the passage of years and the increasing usage of electronic services and online shopping, this concept has evolved into E-Service quality. Many researchers discussed this concept such as Cristobal, et. al. (2007) stated that online shopping makes customer loyalty hard to gain and it needs service quality to satisfy customers. Li and Suomi (2009) mentioned that E-service quality is important to retain and gain new customers and in order to achieve that companies need to make sure to provide better service through their online shopping channels. Agrawal, et. al. (2014) said that E-service plays a major role to reach success to companies that offering online shopping and enhance their services quality to reach customer's satisfaction to gain loyalty. According to Al-Nasser, et. el. (2015) E-service quality has a significant impact on customer trust when using online shopping tools such as mobile phone application, also he considered trust as the most important element to have successful online shopping for customers.

Based on the mentioned above introduction, this study aims to investigate the effect of Mobile Phone Application sub-variables (Usability, Availability, Information, Security, and Privacy) on E-Service Quality dimensions of retail stores in Amman-Jordan

Study Purpose and Objectives:

The purpose of the study is to investigate the effect of Mobile Phone Application sub-variables (Usability, Availability, Information, Security and Privacy) on E-Service Quality dimensions of retail stores in Amman-Jordan of retail Stores.

The Main objective of this study is to use the upcoming results to recommend retail stores owners on how to develop a mobile phone application that can keep their customers and affect the e-service quality of retail stores. The objectives can be summarized as follows:

1. Provide recommendations to retail stores in Amman, Jordan on the effects of using mobile phone application on their e-service quality.

2. Provide a framework for future studies in the Arab world.

3. Build a conceptual framework about mobile phone application and e-service quality that future studies could benefit from it.

4. Provide recommendations for future work to use the developed model of this study by a previous literature review on other industries that have similarity with the retail industry.

Study Significance and Importance:

The current study is one of the few studies about this topic, which was conducted in Amman-Jordan and/or the world. It may provide a bit of advice to business owners about the use of mobile phone application as modern technology to develop their business and could affect the e-service quality of retail stores. The results may be proper to other industries that have similarities with the retail industry; also, it can be a base for other studies in the future. There are few studies discuss the effect of using mobile phone application in business from the customer viewpoint. Therefore, this study will have a contribution to building further studies on this topic that can be used in other industries. The researcher is working as a direct manager in a retail store that has seen a drawback in it is customers retain process, the results of this study can be used to give a sound

recommendation to business owners on the effect of using new technology (mobile phone application) to enhance service quality and retain customers.

The importance of this study is to examine the role of using new technology (mobile phone application) and its effect on the service quality provided by online retail stores from the customer viewpoint. Moreover, it provides advice to retail stores about using mobile phone application in their businesses to enhance the service provided by them to customers to retain them and gain new customers.

Study Problem Statement:

The competition among retail stores in Jordan is increasing to offer new and better services to customers. At the same time, other industries are using mobile phone applications to gain and keep customers, which can provide fast response, delivery and give better service to retain customers. After interviewing retail stores managers in Amman, they stated that there is a gap between the employees knowledge and customers' expectations, in other words the employees should have a proper training about what they have in the store such as the goods, prices, time for delivery, and exact amount of the stock in the store to satisfy customers need and meet their expectations, mobile phone application could fulfil this gap by gathering this information in one place, as mentioned by many studies mobile phone application could achieve that, such as Pandhared and Joglekar (2010) stated that mobile phone application allows fast response to customer needs. It reduces delivery time and cost. Piotrowicz and Cuthbertson (2014) stated that the use of smartphones is increasing, which give new opportunities and challenges for retailers. Meihami and Meihami (2014) stated that the use of new technology helps organizations to compete and survive in the marketplace. Goetsch and Davis (2014) added that nowadays there are many challenges facing all organizations worldwide and companies need to adopt new solutions to face challenges. Knego, et. al. (2015)

mentioned that mobile could create huge opportunities to improve the business and create added value in the retail industry. Ramanathan, et. al. (2015) explained that using new technology in retail business provide a unique business model to gain and retain customers, which create a competitive advantage. Das, et. al. (2017) said in globally competitive markets, if an organization does not move fast to use new digital technology, it may lose a lot in the market. Balaji et. al. (2017) stated that information technology development is rapidly changing the retail industry and retailers must adapt that technology to survive in the marketplace. BergstrÖmet, et. al. (2017) discussed that there is a gap in retail digitalization research and the consumers' interaction and sense -making of digital devices in a retailing environment.

Therefore, the aim of this study is to investigate the effect of mobile phone application on E-service quality of retail stores in Amman, Jordan.

Study Questions:

The current study is dedicated to answering the following main question:

1. Do Mobile Phone Application sub-variables (Usability, Availability, Information, Security, and Privacy) affect E-Service Quality dimensions of retail stores in Amman-Jordan?

Based on Mobile Phone Applications sub-variables the main question is divided into the following sub-questions;

1.1. Does Mobile Phone Application Usability affect E-Service Quality dimensions of retail stores in Amman-Jordan?

1.2. Does Mobile Phone Application Availability affect E-Service Quality dimensions of retail stores in Amman-Jordan?

1.3. Does Mobile Phone Application Information affect E-Service Quality dimensions of retail stores in Amman-Jordan?

1.4. Does Mobile Phone Application Security affect E-Service Quality dimensions of retail stores in Amman-Jordan?

1.5. Does Mobile Phone Application Privacy affect E-Service Quality dimensions of retail stores in Amman-Jordan?

Study Hypothesis:

The above questions will be answered by testing the following hypothesis:

Main Hypothesis:

H_{01}: Mobile Phone Application sub-variables (Usability, Availability, Information, Security, and Privacy) do not affect E-Service Quality dimensions of retail stores in Amman Jordan, at a level of significance ($\alpha \leq 0.05$).

Based on Mobile Phone Application sub-variables the main hypothesis can be divided into the following sub-hypotheses:

$H_{01.1}$: Mobile Phone Application Usability does not affect E-Service Quality dimensions of retail stores in Amman Jordan, at a level of significance ($\alpha \leq 0.05$).

$H_{01.2}$: Mobile Phone Application Availability does not affect E-Service Quality dimensions of retail stores in Amman Jordan, at a level of significance ($\alpha \leq 0.05$).

$H_{01.3}$: Mobile Phone Application Information does not affect E-Service Quality dimensions of retail stores in Amman Jordan, at a level of significance ($\alpha \leq 0.05$).

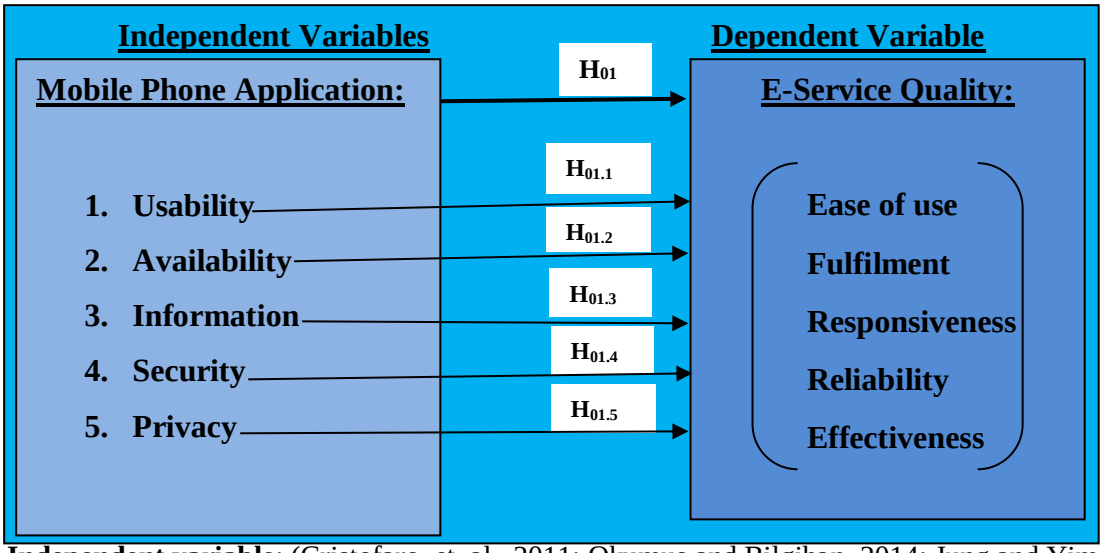
$H_{01.4}$: Mobile Phone Application Security does not affect E-Service Quality dimensions of retail stores in Amman Jordan, at a level of significance ($\alpha \leq 0.05$).

$H_{01.5}$: Mobile Phone Application Privacy does not affect E-Service Quality dimensions of retail stores in Amman Jordan, at a level of significance ($\alpha \leq 0.05$).

Study Model:

Based on problem statement and its questions the following model has been developed to study the effect of Mobile Phone Application on E-Service Quality, as shown in model (1.1).

Model (1.1): Study Model



Independent variable: (Cristofaro, et. al., 2011; Okumus and Bilgihan, 2014; Jung and Yim, 2015; Kim, et. al., 2016; Okumus, et. al., 2015. Kim, et. al., 2016; Pentina, et. al., 2016).
Dependent variable: (Parasuraman, et. al., 2005; Agrawal, et. al., 2014; Li and Suomi, 2009)

Operational and Procedural Definitions of Terms:

Mobile Phone Application: designed software that can be downloaded through the internet by users on their mobile phone to use it in a specific task to satisfy their needs.

Usability: the degree to which a mobile phone application is enjoyable to use, simple to learn, can be accessed easily, and can provide needed and fast service.

Availability: the ability of a mobile phone application to be continually available, can correct mistakes, reply to user requests, and run in fast time to serve users.

Information: the degree to which mobile phone application can provide complete, accurate, updated, and clear information that user can benefit from it.

Security: the degree to which a mobile phone application can be secure in terms of providing an inaccessible password to protect user data and payments from loss or theft.

Privacy: the degree to which a mobile phone application gets permission from users about their personal data and at the same time protect it from exposing or manipulate.

E-Service Quality: the degree to which a mobile phone application or website can meet user expectations in terms of ease of use, fulfilment, responsive, reliable, and effective.

Ease of Use: the user ability to easily understand, access, interact, and find his interest in mobile phone application in a friendly user interface.

Fulfilment: the user ability to obtain smooth transactions, fulfil his needs, and meet his expectations in terms of getting individual attention on a mobile phone application anytime he wants.

Responsiveness: the degree to which a mobile application can serve users in terms of speed, fast response, solving complaints, and can correct errors immediately.

Reliability: the degree to which user can rely and complete tasks on mobile phone application in terms of providing the correct service as requested from the first time, deliver the expected service on time and every time.

Effectiveness: the ability of a mobile application to do the right things as requested by the user in terms of achieving user's goals, completing transactions and easily navigating inside the mobile application.

Study Limitations and Delimitations:

Study Limitation:

Human Limitation: This study carried out on 210 customers who usually purchase their goods from 20 retail stores out of 44 in Amman, Jordan.

Place Limitation: The study carried out in Amman, Jordan.

Time Limitation: This study was carried out during the first semester of 2018/2019.

Study Delimitation:

This study aims to investigate the effect of Mobile Phone Application on E-Service Quality of retail stores in Amman, Jordan. Generalizing its results on other industries and/or countries is questionable, so this study is limited for retail stores in Al-Rwabi district Amman. This study tried to include more mobile phone application sub-variables, but still, there are many other sub-variables not used. Moreover, the current study did not include all e-service quality dimensions.

Chapter Two: Theoretical and Conceptual Framework and Literature Review

Introduction:

This chapter includes variables definitions, the relationship between variables, previous models, previous studies and what differentiate this study from previous studies.

Definitions and Components of Independent Variable (Mobile Phone Application):

Mobile Phone Application: Islam, et. al. (2010) said it is a set of program/software that runs on mobile devices to perform certain tasks for users and it is easy to use, user-friendly, and inexpensive. Franko and Tirrell (2011) defined applications on a mobile phone as independent software that can be downloaded and run from innovative smartphones throw applications stores. Lee, et. al. (2012) said that mobile application is a program designed to accomplish specific function and it can start by downloading it from different application stores to serve users and/or other applications. Charani, et. al. (2012) said it is a technological tool for identifying opportunities, which lead to taking strategic action for organizations. Glynn, et. al. (2014) stated that it is a software application designed to operate on smartphones to give automatic feedback, visual appearing graphics display, and have goal setting functionality to users.

In summary, mobile phone application defined as the designed software that can be downloaded through the internet by users on their mobile phone to use it in a specific task to satisfy their needs.

Usability: ISO 9241-11 defined usability as “the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use”. Holzinger, (2005) said it is the ability of the system to be easy to use and acceptable by users to carry out specific tasks in a specific

environment. Coursaris and Kim (2011) defined usability the degree users can employ a specific technology instrument with relative ease in order to accomplish a specific goal within a context of use. Gutierrez, et. al. (2011) said that it is a graphical platform that could display information for application users and show to users how they interact with it. Nayebi, et. al. (2012) defined usability as the ability of the mobile application to be more efficient to use, easy to learn and provide user satisfaction. Ginsburg et. al. (2016) said it is the degree to which mobile application can be used and navigated by users for its intended goal.

In summary, usability defined as the degree to which a mobile phone application is enjoyable to use, simple to learn, can be accessed easily and can provide needed and fast service.

Availability: Zeng, et. al. (2004) said it is the available amount of time of a system, which is ready to serve users as intended. Toma and Foxvog (2006) defend availability as the extent to which a user can interact with a system in terms of time and location whenever the user wants. Galster and Bucherer (2008) the ability of a system to do the required tasks and being operational and accessible anytime required functioning. Papageorgiou, et. al. (2010) the percentage of successful requests of a system in a time-period. Santouridis, et. al. (2012) defined availability as the degree to which mobile application technical functions is working to facilitate customer purchase from an online shop easily and without errors like misleading links, dissatisfied customers which lead to not using mobile applications again.

In summary, availability defined as the ability of a mobile phone application to be continually available, can correct mistakes, reply to user requests, and run in fast time to serve the user.

Information: Madden (2000) said it is stimulus originating in one system that affects the interpretation by another system either the second system's relationship to the first or of the relationship the two systems share with a given environment. Data that can be given meaning when using a system, which integrated with other information to have an understanding. Sonnenberg (2010) said that information in mobile phone application is related to users that they can benefit from it should be presented on time and prioritize where appropriate. Appelbaum (2010) said any communicated data that is used to be in touch with users, and different users should understand data. Enck, et. al. (2014) said information is dynamic and can be difficult to identify even when sent in the clear messages.

In summary, information defined as the degree to which mobile phone application can provide complete, accurate, updated, and clear information that user can benefit from it.

Security: Mbogo (2010) said it is one of the primary factors that relate to the intention to use a smartphone application to secure their payments. Brooks (2010) stated that security in smartphone application is the ability of users to safely and confidently benefit from the potential and convenience offered by mobile platforms. Chin, et. al. (2012) definition of security the oriented methods to protect user sensitive data within a digital environment. Sarwar and Soomro (2013) said it is the ability to control the access of an application thorough smartphone to Sucre the information of the user. Carter, et. al. (2016) defined security the ability of an application to secure user information and without any exposing this information to another third party.

In summary, security defined as the degree to which a mobile phone application can be secure in terms of providing an inaccessible password to protect user data and payments from loss or theft.

Privacy: Parasuraman, et. al. (2005) said that privacy is the extent to which the application is safe and protects user information. Mbogo (2010) stated that privacy relates to personal information of the user that should be not exposed. Cristofaro, et. al. (2011) divided privacy into two categories to protect user information in smartphone application first, related to sharing information with others without using private data. Two, related to location and time that determining user location without revealing personal information. Limiting personal information exposure when installing an application. Chin, et. al. (2012) said it is the degree to which users believing that they can be performing sensitive tasks on an application without any concerns. Qin, et. al. (2014) defined privacy it is a kind of personal data exist on smartphones application that users prefer keeping in private, and usually not easy to obtain from the public.

In summary, privacy defined as the degree to which a mobile phone application gets permission from users about their personal data and at the same time protect it from exposing or manipulate.

Definitions and Components of the Dependent Variable (E-Service Quality):

E-Service Quality: Zeithaml, et. al. (2000) said that it is the degree of an online site enables efficient and effective shopping purchasing and delivering products and services. Santos (2003) defend e-service quality as the customers overall judgment and evaluation of the excellence and quality of e-service offerings in the virtual marketplace. Rolland and Freeman (2010) said it is the degree to which an application or website enables effective and efficient online shopping, facilitating purchases and receipt of products and services, and how it delivered to customers throughout the whole experience from initial contact to the fulfilment of the service. Al-Nuaimi, et. al. (2013) definition of e-service quality as a system that provides performance to generate value and benefits for

users over a systematic process that is implemented by a software network. Dan, et. al. (2015) said it is how to meet customer expectations without the need to rely on human-to-human interaction.

In summary, e-service quality defined as the degree to which a mobile phone application or website can meet user expectations in terms of ease of use, fulfilment, responsive, reliable, and effective.

Ease of Use: Dahlberg, et. al. (2003) said ease of use include ease of learning, ease of control, understanding and flexibility of new technology by users. Lee and Park (2008) said that ease of use is the extent to which a user can use a specific system without any extra effort. Islam, et. al. (2010) stated that it is to the ability of a user to use application from anywhere and anytime they need to access without help. Jen and Hung (2010) defined ease of use as the degree to which mobile phone application is easily understood and anyone can use it. Lim, et. al. (2011) said that ease of use is the minimum effort that can user put in using technology and understand it including applications in the Smartphone. Okumus and Bilgihan (2014) said that it is the way, which mobile phone application can easily operate and comprehend by users. Jung and Yim (2016) defined ease of use as a motivation to use the application more frequently.

In summary, ease of use is defined as the user ability to easily understand, access, interact, and find his interest in mobile phone application in a friendly user interface.

Fulfilment: Parasuraman, et. al. (2005) said it is the degree of the technology tool promises to deliver an order and availability of an item are fulfilled. Li and Suomi (2009) defined fulfilment as giving customers correct information about available products and being flexible to customer demand to gain customer satisfaction, which is the goal of current technology tool. Alanezi, et. al. (2011) said it is the degree of performing promised service in promised time during online shopping website, such as calling the

customers and providing the confidence of delivering the right service. Santouridis, et. al. (2012) definition is keeping the service accurate and order fulfillment are important elements of e-service quality that lead to customer satisfaction or dissatisfaction in online shopping. Ahmad, et. al. (2016) said it is the degree of a website can uphold promises to customers to serve them as expected, which lead to customer satisfaction.

In summary, fulfilment defined as the user ability to obtain smooth transactions, fulfil his needs and meet his expectations in terms of getting individual attention on a mobile phone application anytime he wants.

Responsiveness: Li and Suomi (2009) said it is about providing prompt services to customers through the virtual marketplace and being available when customers have questions or issues to complete their purchases without ant interruptions. Green and Pearson (2011) defined responsiveness as the existence of feedback to users and the availability of response from the site developers as quickly as possible. Agrawal, et. al. (2014) stated that responsiveness is related to the service quality that delivers to customers and should include flexible, fast, accurate and consistent service delivered. Al-Nasser, et. al. (2015) said it is the degree to which an application is timely responsive and use the resources for help in case of issues or questions. Jung and Yim (2016) defend responsiveness as the ability of an application to perform tasks quickly, without errors, and according to user need.

In summary, responsiveness defined as the degree to which a mobile application can serve users in terms of speed, fast response, solving complaints, and can correct errors immediately.

Reliability: Cristobal, et. al. (2007) said it is the degree of a website can perform promised service to customers dependably and accurately. Sohn and Tadisina (2008) defend reliability as the ability of a system to provide trust to customers when purchasing

online and perform the promised service to customers dependably and consistently. Li and Suomi (2009) stated that reliability is the extent to which an application is accurate, complete, truthful, keeping promises, and always available to provide services to users. Agrawal, et. al. (2014) said it is about the frequency of upgrading the online application and fast reply to customers' questions and accuracy of transactions. Zehir and Narcıkara (2016) said reliability is related to the technical functioning of the online site, mainly the extent to which it is available and functioning correctly.

In summary, reliability defined as the degree to which user can rely and complete tasks on mobile phone application in terms of providing the correct service as requested from the first time, deliver the expected service on time and every time.

Effectiveness: Edigheji (2008) stated that it is the degree to which services provided to customer meets its base goal. Rahman, et. al. (2010) said it is the capability of a system, website, application, to success in achieving a given goal. Coursaris and Kim (2011) said it is the precision and perfection with, specified users can achieve goals in a particular environment. Harrison, et. al. (2013) stated that it is the degree to which mobile application can complete tasks as requested from the user in a specified context and it can be measured by evaluating whether the set of tasks completed or not. Toften (2015) said effectiveness meaning the extent to which organizational goals and objectives are achieved

In summary, effectiveness defined as the ability of a mobile application to do the right things as requested by the user in terms of achieving user goals, completing transactions and easily navigate inside the mobile application.

Relationships between Independent and Dependent Variables:

Many previous studies had been reviewed to find the correlation between variables, but few studies are related to this topic especially in the Arab world, study

variables were selected from several studies that indicate a possible effect of independent variable on the dependent variable. Lee and Park (2008) said that the adoption of mobile information technology influenced market performance in a business-to-business setting. Chen and Zhao (2008) stated that using a mobile business model could be effective through the implementation of mobile business in firms to acquire unique Services. Casagranda, et. al. (2011) mentioned that using internet-based technology as a marketing instrument can support the creating of expected services by customers. Limburg (2012) said that internet-based technologies could gain strategic benefits through distinctive IT applications. Persaud and Azhar (2012) stated that that customer shopping style, brand trust, and value are important issues to motivate customers to use mobile marketing through their smartphones.

Onobrakpeya and Stanley (2016) said that there is a relationship between using high-tech products including smartphone in providing a sustainable competitive advantage. Arcand, et. al. (2017) stated that mobile application had become mandatory in banking businesses to service their clients in the best way and to provide them with the service they are accepting. Karjaluoto, et. al. (2018) mentioned that mobile services have reinvented businesses models and provide customers with service delivery they needed, in addition, mobile services have facilitated the access of information by customers and all of that can be done through mobile applications.

Thakur (2018) added that the huge changes on technologies in the twenty-one century especially in the retail industry regarding e-retailers make it hard to gain customer satisfaction and loyalty at the same time he mentioned that e-service quality could evolve customers experience and the way they navigate through mobile application in order to gain their satisfaction and loyalty. Tsai, et. al. (2018) said that mobile applications have become an important issue to organizations to contact with their customers to provide

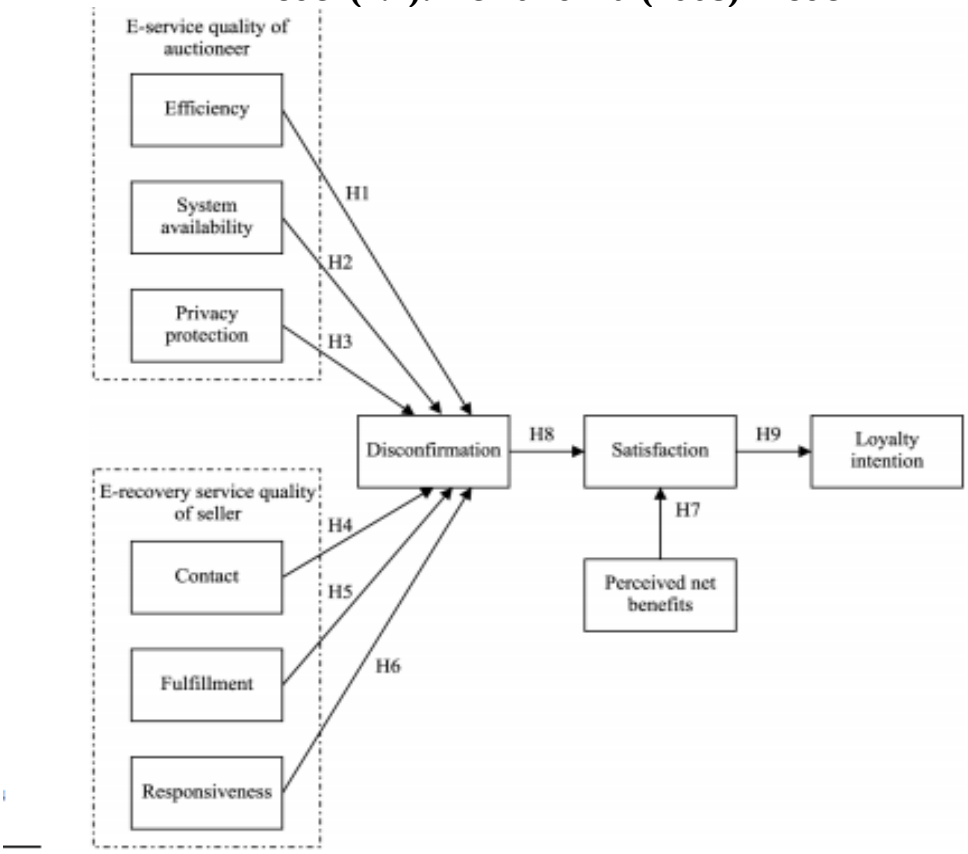
them with services as well as to enhance the service quality offered to customers to gain their satisfaction and loyalty. At the same time, Kaur (2018) said that the huge development of internet technology and mobile applications have transferred the organizations' direction to gain customer satisfaction by enhancing e-service quality.

In summary, few studies investigated the effect of mobile phone application on E-service quality or service quality, so this current study will contribute to building awareness about the usage of mobile phone application and its effect on the service quality provided by retail stores.

Previous Models:

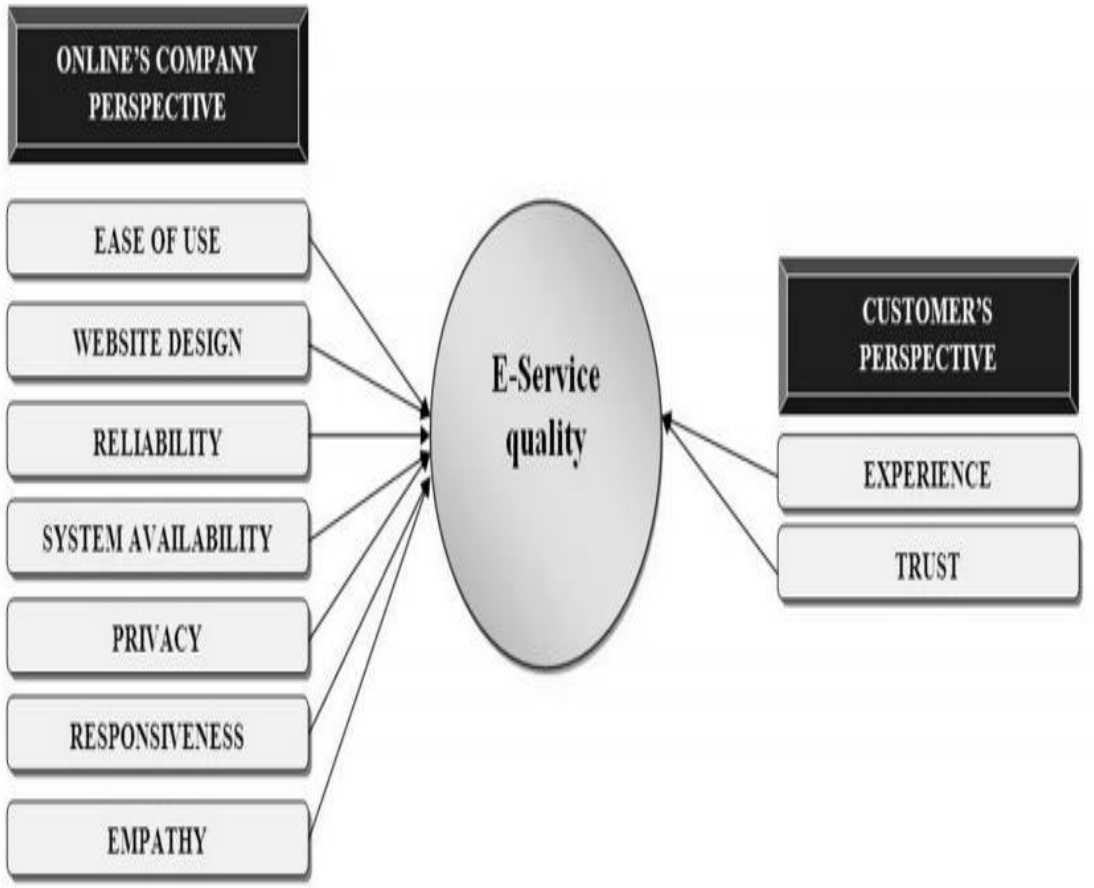
Yen and Lu (2008) model: this model explains the e-service quality of an online environment from the auctioneer and seller viewpoint to investigate loyalty intention, also this model divided e-service quality to two perspectives both have different dimensions and find their influence on disconfirmation separately and their effect on satisfaction.

Model (2.1): Yen and Lu (2008) Model



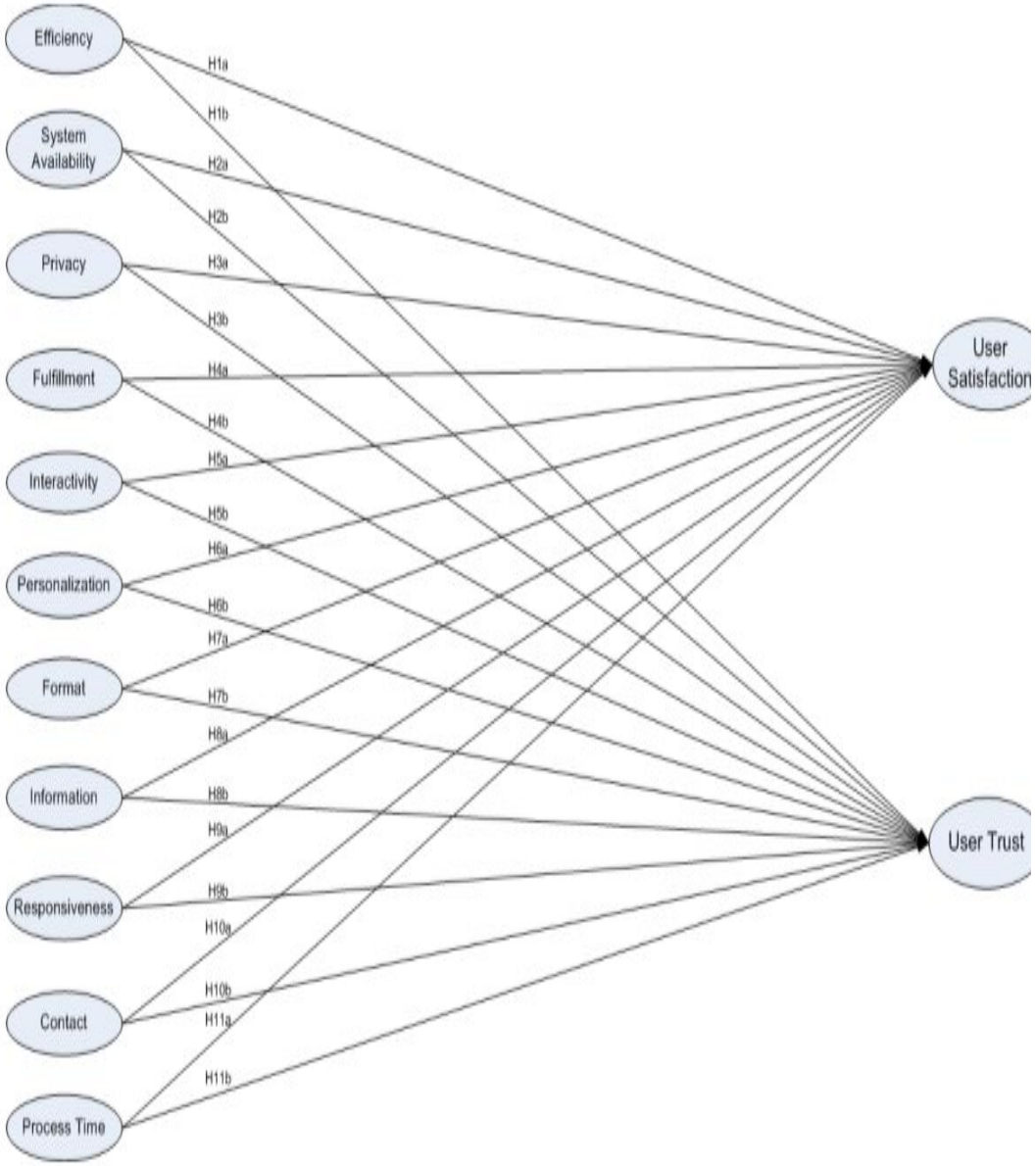
Cotirlea (2011) model: this model explains how companies adopt new technology to communicate with their customers especially in the tourism sector, the model involves 11 dimensions that may influence E-service from an online company perspective, also the model tries to investigate, experience and from a customer perspective. After examinations, there was a positive direct influence from three basic dimensions, which are reliability, empathy and responsiveness.

Model (2.2): Cotirlea (2011) Model



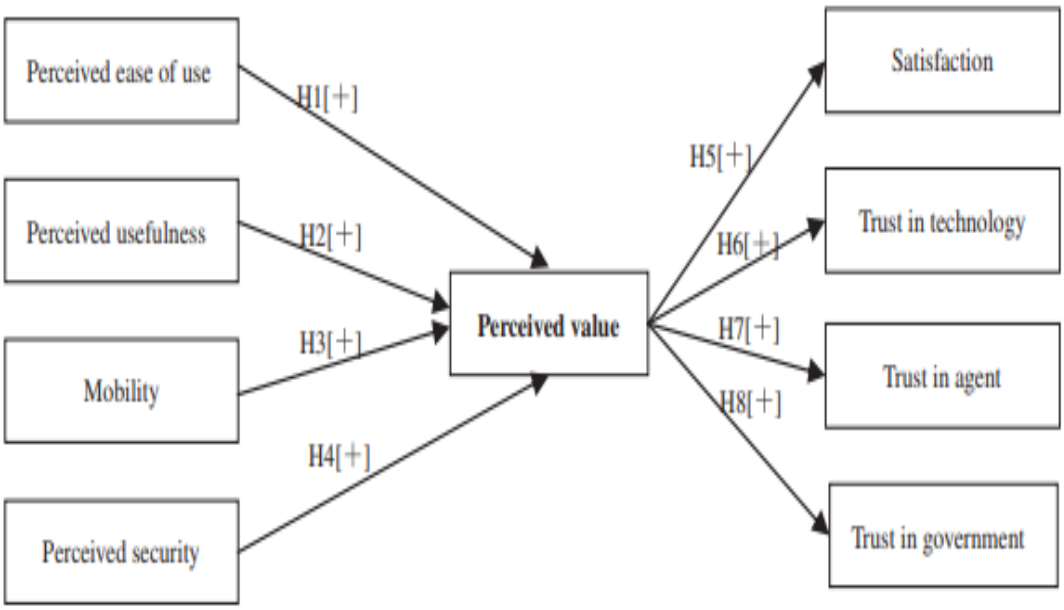
Alanezi, et. al. (2011) model: this model was developed theoretically to measure the effect of e-government eleven dimensions proposed above on two performance measures user satisfaction and user trust in the results of this model e-government dimensions was depended on the quality of service provided to citizens, which eventually will lead to user satisfaction and user trust.

Model (2.3): Alanezi, et. al. (2011) Model



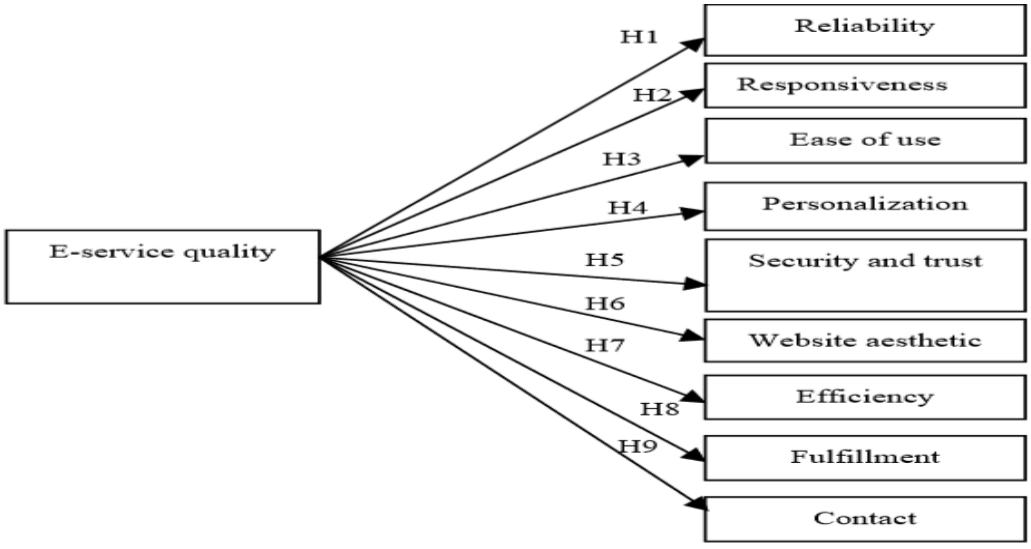
Wang (2014) model: this model investigates the consequences and antecedents of perceived value in mobile government and continuous using by users, the independent variable mobile, which include ease of use, usefulness. Mobility, security, and dependent variable include technology acceptance model (TAM) explaining the possible influence of mobile government using on acceptance of users to this technology. After analyzing model results shows that perceived value has a strong impact on satisfaction and trust of using the technology.

Model (2.4): Wang (2014) Model



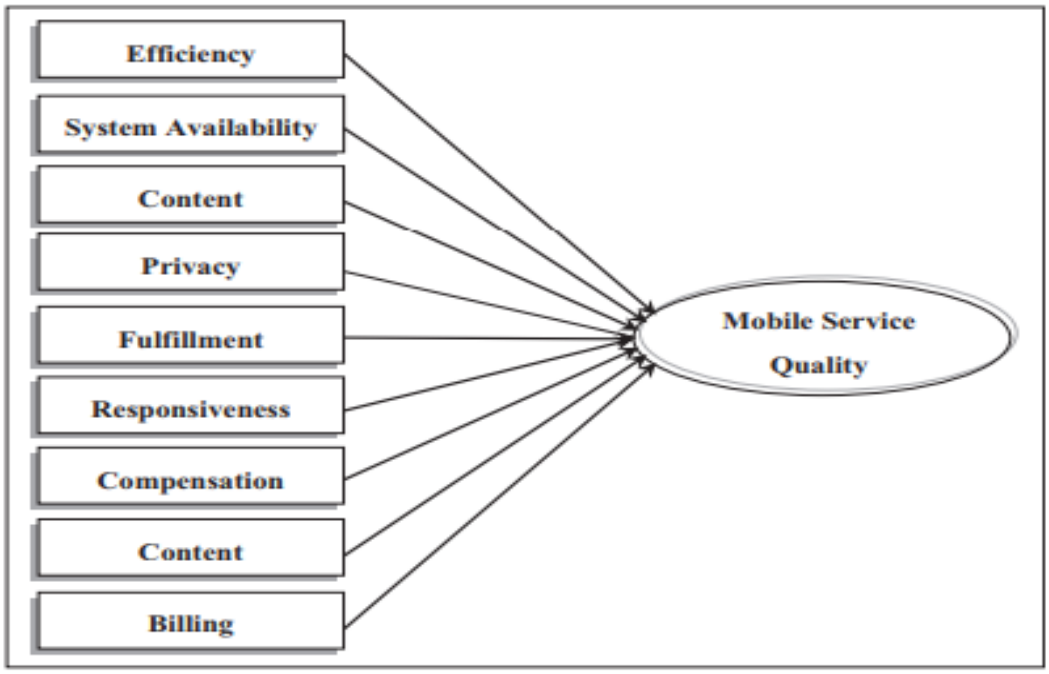
Agrawal, et. al. (2014) model: this model was developed to measure the e-service quality in the Indian banking sector, the proposed 9 dimensions above were evaluated by previous literature reviews in related areas. The main objective of this model is the build a proper scale to measure e-service quality to improve the quality of service in Indian banking services, which will eventually lead to improving effectiveness and efficiency, which lead to user satisfaction and to gain a competitive advantage to the banking sector.

Model (2.5): Agrawal, et. al. (2014) Model



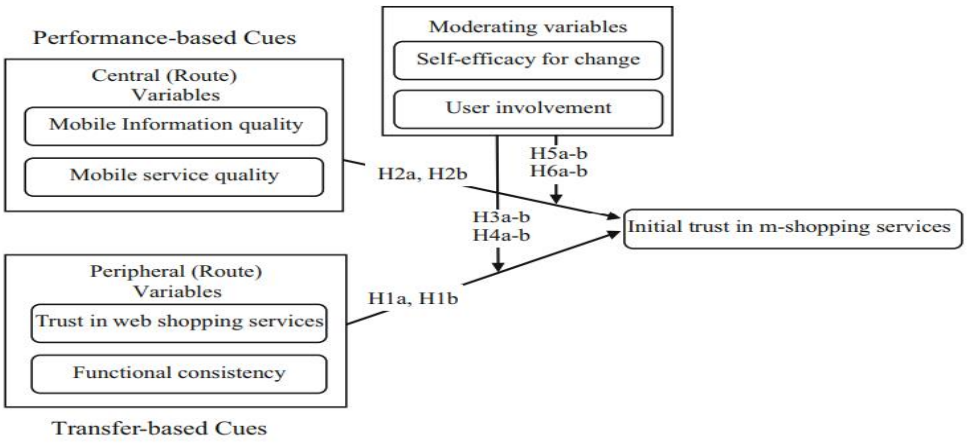
Huang, et. al. model (2015): this model includes nine factors that measure mobile service quality from customers opinion, the model consists of three factors that were not discussed in literature reviews such as compensation, content, and billing. The result of this model the service quality provided by mobile found to be very stapled to provide services to customers in terms of nine factors mentioned in the model above.

Model (2.6): Huang, et. al. (2015) Model



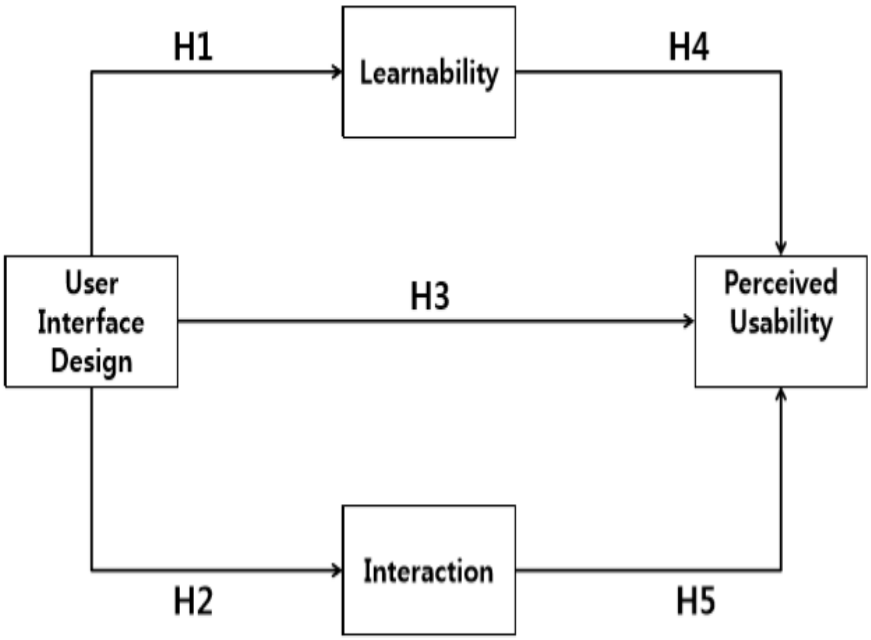
Yang (2015) model: this model investigates the effect of transfer based, performance-based trust building cues on mobile shopping services. The model examines one level performance-based cues that is central route variables mobile information quality and mobile service quality that may have a positive effect on initial trust in mobile shopping services. The next level is peripheral route variables trust in web shopping services and functional consistency that may also have a positive effect on initial trust in mobile shopping services. The last level is moderating variables that include self-efficacy for change and user involvement that may have a negative effect on the initial trust as explained in the study.

Model (2.7): Yang (2015) Model



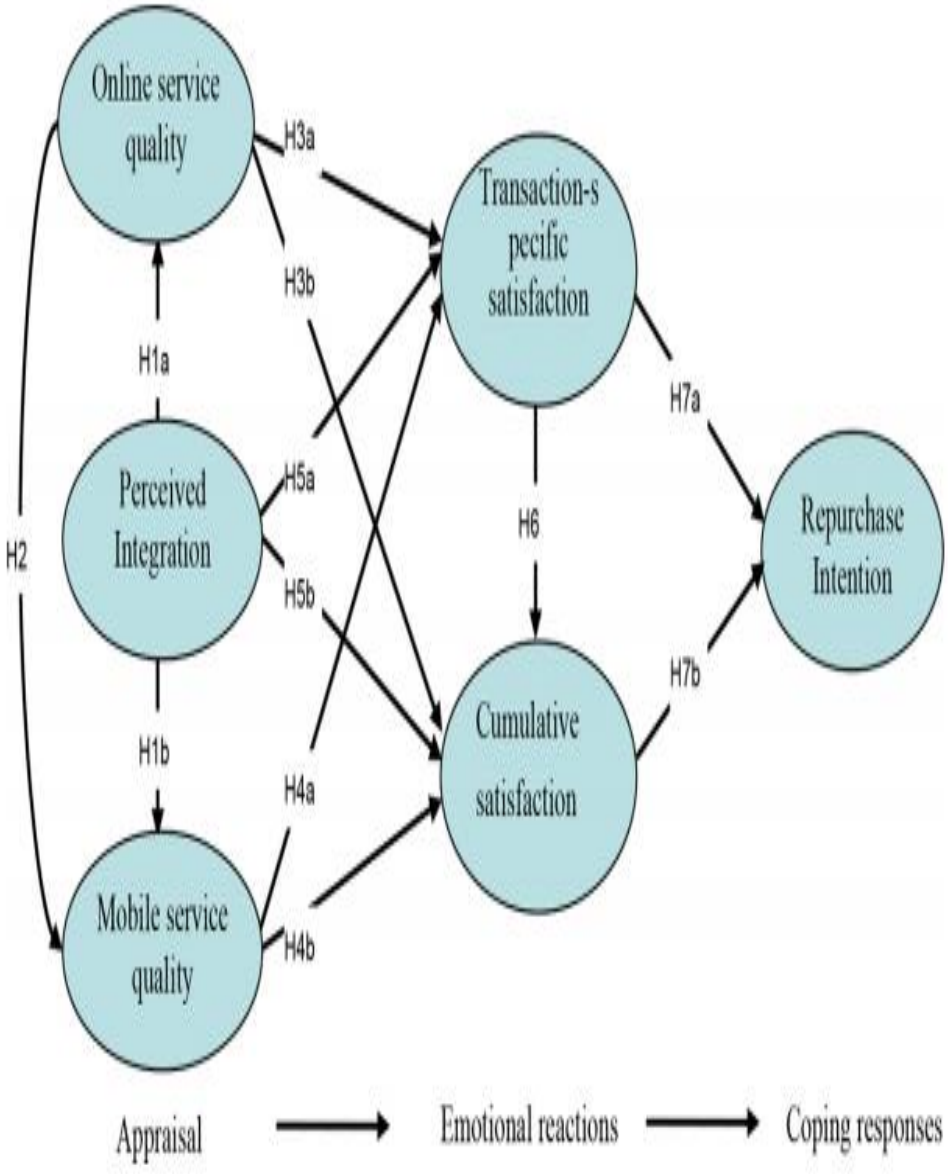
Jung and Yim (2016) model: This model examine how user interface design for smartphone applications could influence the perceived usability of applications by mediating variables that include the learnability of applications and the interaction with applications.

Model (2.8): Jung and Yim Model (2016)



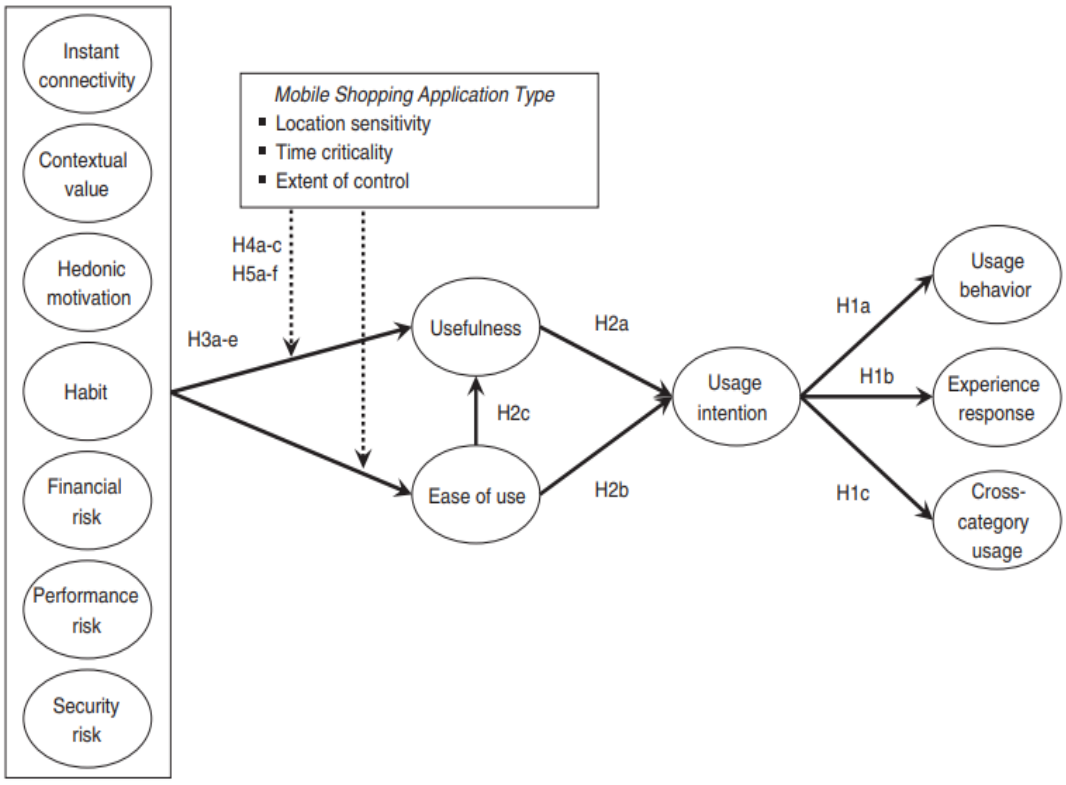
Yang, et. al. (2017) model: this model examines factors that determine repurchase intention via online and retail aspects. The model focus on the effect of channel integration on customer self- regulatory process. The result of this model the channel integration had a positive strong impact on the service quality appraisal in online and mobile shopping also the findings that retailers can enhance customers' service quality perceptions by integrating their individuals' marketing channels.

Model (2.9): Yang, et. al. (2017) Model



Hubert, et. al. (2017) model: this model investigates in one hand the relationship between usage, usefulness and ease of use. On the second hand, it examines the benefits of using mobile shopping application, which include instant connectivity, hedonic value and contextual value. Habit related to customer characteristics, security risk, performance, and financial related to risk facets, which all can influence usage behaviour, experience and cross-category usage by customers on mobile shopping.

Model (2.10): Hubert, et. al. (2017) Model



Wang, et. al. (2019) model: this model investigates customer continuous intention about mobile services from the perspective of mobile service quality, inertia and satisfaction. The mobile service quality contains three dimensions, interaction quality, environmental quality and outcome quality. Those dimensions of service quality have a strong relationship with satisfaction, which the last can be measured by the performance of service should exceed customer expectations, which eventually will lead to continually intention to use mobile services

Model (2.11): Wang, et. al. (2019) Model

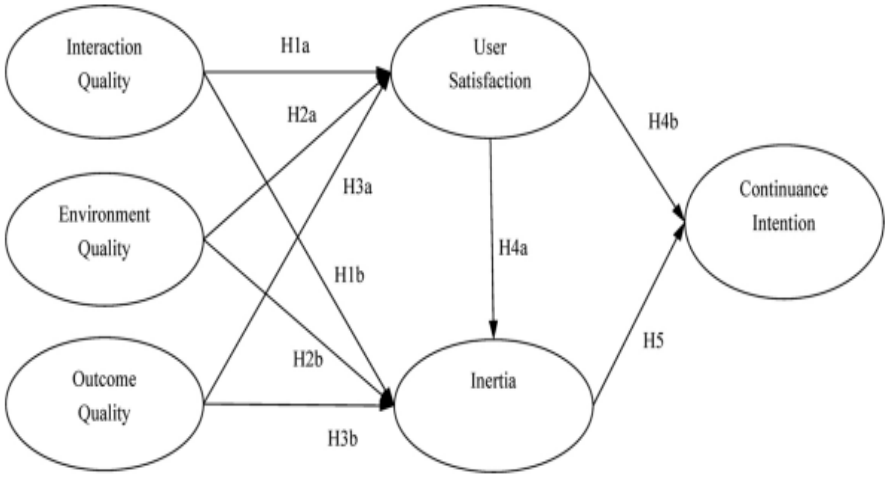


Fig. 1. The research model.

In summary, many models have discussed the effect of mobile phone application in various businesses, and they are related to customer satisfaction. If the customers are satisfied with the service provided to them, the quality is high in both cases face-to-face service and on e-shopping service. This study is trying to investigate the effect of mobile phone application on e-service quality in retail stores, from the customer viewpoint. Moreover, until now there is no model including all mobile phone application sub-variables or e-service quality dimensions. As shown in the previous model's different studies used different variables. This study tried to combine some of mobile phone application sub-variables used by different previous studies.

Previous Studies:

Lee, et. al. (2003) study titled **"Technology, service quality, and customer loyalty in hotels"**, aimed to investigate the use of modern tools to enhance the service quality that hotels offer to customers to gain customer loyalty. Data collected from 30 managers out of 70, which include 44 percent of the sample by a questionnaire. Results showed that there is a growing demand from customers to use modern technology tools

to improve the quality of service offered by hotels, also using technology can improve efficiencies, maintain a relationship with customers, gain competitive advantage and increase sales. The study recommends that including modern technology in hotel service is mandatory to gain customers loyalty and enhance the hotel services to customers.

Ribbink, et. al. (2004) study titled **"Comfort your online customer: quality, trust and loyalty on the internet"**, aimed to examine the role of customer evaluations of e-service and e-trust in explaining customer loyalty to online retailers. Data collected from 184 customers out of 350 by an online questionnaire. The Likert five-point scale used to rate participant answers. Hypotheses were tested by using means of partial least squares (PLS). Results showed that e-quality, e-satisfaction, and e-trust positively and directly influence e-loyalty of online customers, but other quality dimensions (e-scope, customization, ease of use, and responsiveness) did not have a direct effect on the e-loyalty. The Study recommended that any online website should emphasize on e-quality and e-satisfaction to gain customers trust and loyalty.

Lee and Lin (2005) study titled **"Customer perceptions of e-service quality in online shopping"**, aimed to develop a research model to investigate the relationship between E-service quality dimensions and overall service quality of online shopping. Data collected from 297 online consumers by questionnaire. Data was tested using confirmatory factor analysis was used to test the reliability and validity of the model, structural equation modelling technique was used to examine the research model. Results showed that the dimensions of web site design, responsiveness reliability, and trust affect overall service quality and customer satisfaction. The Study recommended using different methodologies like focus group and interviews to investigate n service quality and customer purchase behavior in online shopping contexts.

Trabold, et. al. (2006) study titled **"Comparing e-service performance across industry sectors Drivers of overall satisfaction in online retailing"**, aimed to investigate whether the e-service success in online retailing is similar or different by industry sector. Data collected from an online e-service rating site, which is specialized in the online retailing industry. Data was tested by using ridge regression and SPSS to identify if there are observations that have missing data values for individual firms. Results showed that many dimensions of online service performance were similar in their effect across all sectors, several dimensions exhibited sector-by-sector performance differences. The Study recommended that the dimensions that frequently differ across sectors included, ease of returns, refunds, privacy experience and price perceptions should be included in any online retail store.

Cristobal, et. al. (2007) study titled **"Perceived e-service quality (PeSQ) Measurement validation and effects on consumer satisfaction and web site loyalty"**, aimed to develop a multiple-item scale for measuring e-service quality and to study the effect of perceived quality on consumer satisfaction levels and the level of web site loyalty. Data collected from 461 online customers by questionnaire who had visited or purchased the service offered by the internet at least one time over the three past months when study applied. Results showed that perceived quality has a positive and direct effect on the degree of consumer web site satisfaction. Moreover, the degree of satisfaction acts positively and directly on the consumer web site loyalty levels shown. The Study recommended that in the design of an online shop, offering enough information to compare products and make a good choice is very important.

Lee and Park (2008) study titled "**Mobile technology usage and B2B market performance under mandatory adaption**", aimed to investigate the relationship between adaption of mobile information technology and market performance in Business

to business setting study include variables to investigate Usefulness, ease of use, loss of control and customer satisfaction. Data collected from 452 retailers by a survey and the response rate was 100%. The relationship tested by using structural equation modelling and covariance structure analysis. Results showed that loss of control has a negative effect on user satisfaction and market performance also showed that usefulness has a positive effect on market performance by using mobile information technology. The Study recommended other potential factors such as innovation, information technology experience, social factors that may have an effect on user training and technical user support.

Chen and Zhao (2008) study titled "**Mobile Business as a Strategic Tool to Acquire Competitive Advantages**", aimed to analyze using mobile business in the logistics industry to provide a sustainable competitive advantage. Data collected form logistic industry in China. Data collected via a survey of firms in the logistics industry in China. Results showed that mobile business could enhance response time, interaction with customers, and provide a competitive advantage. The Study recommended that using a mobile business model can be effective though the implementation of mobile business in firms to acquire competitiveness.

Batagan, et. al. (2009) study titled **"E-Service Quality Management"** aimed to explain that e-services (e-commerce, e-banking, e- government) needs quality management and it discusses the benefits of e-service to users and customers. Data collected from multiple studies that related to e-service sectors. Data tested using quantitative metrics of the quality management framework eliminate the disadvantages of qualitative evaluation. Results showed that e-service offer to user speed, efficiency, flexibility and innovation also e-service available 24/7 and accessible from any location.

The Study recommended that there is a growing need for e-service management and that's what should every organization benefit from it to enhance their services to customers

Shankar, et. al. (2010) study titled "**Mobile Marketing in the Retailing Environment: Current Insights and Future Research Avenues**" aimed to propose a conceptual framework that comprises three key entities the consumer, the mobile, and the retailer. The study is based on discussions generated during the Thought Leadership Conference entitled "Emerging Marketing Perspectives in a Multichannel, Multimedia Retailing Environment". Results showed that mobile marketing has the potential to change the paradigm of retailing from one based on consumers entering the retailing environment to retailers entering the consumer's environment through anytime, anywhere mobile devices. The Study recommended that using new advanced technology will reshape the mobile marketing landscape in the retailing environment in many ways.

Petruzzellis (2010) study titled "**Mobile phone choice: technology versus marketing. The brand effect in the Italian market**", aimed to determine whether technology nowadays is overcome by customer preferences, needs, and how can affect consumer behaviour. Data collected from 403 usable out of 967 users of mobile technology by a questionnaire. The hypothesis was tested by partial using least squares regression model. Results showed that several dimensions that are relevant in customer minds when considering decisions regarding technological products. Brand attitudes do relate positively to consumer intention to use (purchase) specific mobile phones over others. The Study recommended that future studies should focus on the effects of cooperation between mobile operators and mobile manufacturers.

Verkasalo, et. al. (2010) study titled "**Analysis of users and non-users of smartphone applications**", aimed to explore users of three selected mobile applications to find the reason behind using these applications. Data collected from 579 smartphone

users by a web-based survey to investigate the intention to use smartphone applications. The Analysis was tested by using the technology acceptance model. Results showed that there are two major characteristics effect using applications perceived enjoyment and usefulness of the application. The Study recommended that to be able to generalize study results there is a need to include more young users of other mobile applications.

Islam, et. al. (2010) study titled "**Mobile Application and Its Global Impact**", aimed to explore the impact of the mobile application on individuals, business, and social area in modern communication and information age. Data collected from statistical of past and present use of the mobile application from various parts of the global market. Results showed the uses of mobile applications by users is increasing, people are becoming more dependent on mobile rather than any technological tool to communicate and do their business. The Study recommended that there are some areas on the mobile need to be more suitable for the customer to accept it such as screen size, lack of windows, navigation, types of pages accessible and speed.

Ganguli and Roy (2011) study titled "**Generic technology-based service quality dimensions in banking**", aimed to identify the basic service quality dimensions of technology-based banking and to examine the effect of these dimensions on customer satisfaction and customer loyalty. Data collected from 325 students of 336 through an online questionnaire. The related hypotheses were tested using structural equation modelling. Results show that customer service and technology usage easiness and reliability have a positive and significant impact on customer satisfaction and customer loyalty. The Study recommended using different sampling strategy in future studies to be able to generalize study results.

Persaud and Azhar (2012) study titled "**Innovative mobile marketing via smartphones Are consumers ready?"** aimed to investigate consumers' willingness to

accept marketing through their smartphones. Data collected from 428 respondents by an online survey. The data was analyzed through ANOVA and regression analysis. Results showed that customer shopping style, brand trust, and value are important issues to motivate customers to use mobile marketing through their smartphones. The Study recommended that marketers must listen to their customers and develop appropriate strategies rather than simply adapting existing marketing strategies via mobile applications.

Lee, et. al. (2012) study titled "**A Study on the Factors Affecting Smart Phone Application Acceptance**", aimed to study and analyze the factors affecting the use of smartphone application. Data collected from 215 persons who have experience in using smartphone application. The Study used UTAUT (Unified Theory of Acceptance) Model to test hypothesis empirically. Results showed that the factors affecting the intention to use smartphone application were seven levels of promotion condition, flow, social influence, performance expectancy, personalization, and credibility. having a positive effect on the intention to use, which also affect the performance of the application. The Study recommended that to have a good application at least should have four of these factors.

Sarwar and Soomro (2013) study titled "**Impact of Smartphone's on Society**", aimed to investigate how a smartphone is affecting the society and can transform the culture, social life, and the technology exist in the society in a positive or negative way. Data collected from several studies to conclude the positive and negative usage of a smartphone. Results showed that the positive benefits of using a smartphone are tremendous; smartphone can surely be smart if the retailers, society, and technologists understand their responsibility towards usage of these devices smartly to get more benefit in business, education, health and social life. The Study recommended concentrating on

the benefits of using smartphones rather than other misuses of applications on mobile applications to gain the benefits from it.

Jung (2014) study titled "**What a smartphone is to me: understanding user value in using smartphones**", aimed to find the values that can be achieved through smartphones to users and how an application in a smartphone can be personalized. Data collected from 54 smartphone users through interviews. Interviews were analyzed by using a means-end chain approach to understand consumer hierarchical value structure. Results showed that users have diverse goals and values that are associated with using a smartphone. The Study recommended considering the relationship between values when investigating user values in information technology and it also recommended to compare the findings with different information technology context.

Groß (2015) study titled **"Mobile shopping: a classification framework and literature review"**, aimed to classify and organize the gathered knowledge about mobile shopping as revealed in the present literature about retail. Data collected from 81 articles published between 2000 and 2012 around the world in retail literature using a term-based search method. Results showed that the using of advanced technology in the retail environment has increased during the last 10 years in both online distribution and in-store shopping, also customers become more dependent on online shopping rather than traditional shopping. The Study recommended future studies to create a link between mobile shopping themes both within and across the online purchase channel and advanced technology for in-store shopping.

Yang, et. al. (2017) study titled **"Role of channel integration on the service quality, satisfaction, and repurchase intention in a multi-channel (online-cum-mobile) retail environment"**, aimed to identifies factors that affect customer repurchase intention in a mobile -based environment of the retail industry in order to retain

customers. Data collected from 317 customers of one retail store in china by a questionnaire. Hypotheses were tested using structural equation modelling software that is mainly for theoretical studies. Results showed that channel integration has a strong and positive influence on service quality perceptions in the online and mobile environment, which further affect transaction-specific satisfaction and cumulative satisfaction. Moreover, transaction-specific satisfaction has a positive effect on cumulative satisfaction, and both in turn positively influence repurchase intention. The Study recommended that to acquire better results, future studies should examine the different industrial and cultural environments,

Arcand, et. al. (2017) study titled **"Mobile banking service quality and customer relationships"**, aimed to examine the multidimensional concept of mobile banking application or website service quality, which include (privacy, security, design/aesthetics proactivity, enjoyment and sociality and their influence on customer relationship in terms of service quality, which include (satisfaction, trust, and commitment). Data collected from 375 out of 3,806 by online questionnaire and the sample was customers who used smartphone or website application to purchase goods. Hypotheses were tested using multiple scales developed by marketing scholars also seven- point scale was used. Results showed that trust positively and significantly influences satisfaction and commitment; it also showed that the mobile banking application service quality influences trust, commitment and satisfaction of customers. The Study recommended that future studies should also formally test whether results vary in accordance with key financial sector segmentation variables such as age and gender as they were found relevant variables in recent mobile banking adoption.

McLean, et. al. (2018) study titled **"Developing a Mobile Applications Customer Experience Model (MACE)-Implications for Retailers"**, aimed to

investigate the variables that may influence the customer experience during the use of retailer's mobile application. Data collected from 1024 out of 1410 customer in the UK. Data tested using structural equation modelling also the sample was customers who used smartphone application at least for the past 6 months. Results showed that customer is still demanding of new technology for service delivery, also results show the importance of utilitarian factors that influence customers to experience mobile application for retailers to serve them without having a long time using the application to satisfy their needs. The Study recommended using different variables that may influence e-commerce applications and can improve customer experience.

Tsai, et. al. (2018) study titled **"Upgrading service quality of mobile banking",** aimed to investigate the opinions of customers and experts and employed to determine the key factors for the superior service quality in a mobile application. Data collected from 508 out of 737 users of mobile banking by questionnaire using a five-point Likert scale. Data tested using contract validity, discriminate validity, and convergent validity. Results showed that users of mobile banking highly emphasize system availability, privacy, compensations, and assurance one the service quality provided by the mobile application, moreover the study found that users of mobile banking pay more attention to the interests and rights of themselves to be more secure and protected while using mobile banking. The Study recommended that in order to understand the effects of mobile banking on service quality; future studies should include more users of different countries to have a clear understanding.

Kaur (2018) study titled **"Exploring the Determinants of E-Service Quality in E-Retailing",** aimed to examine E-retail impact on E-service quality, which affects customer perception of the service provided by the internet or electronic devices. Data collected from 452 out of 500 customers by questionnaire. Data tested using factor

analysis technique and structural equation model, the questionnaire was ranked by five-point Likert scale. Results showed that there are six factors influencing customer perception of e-retailing, which are personalization, ease of use, website design, reliability, security and responsiveness. The Study recommended that the population of online customers is large and in order to gain accurate results the sample should be bigger.

Balaji, et. al. (2018) study titled **"User Acceptance of IoT Applications in Retail Industry"** aimed to investigate the consumer adaption of the internet of things (IoT) applications in retail industry. Data collected from 289 out of 350 actual retail customers by questionnaire. Data tested using structural equation modelling. Results showed that there are key factors affecting customer acceptance of the internet application, which enhance the customer experience of using applications to find their needs as they are accepting. The key factors are retail reputation, ease of use, usefulness, task -technology fit, and initial trust those factors have a significant impact on the customer attitude toward using applications and (IoT) in retail stores. The Study recommended driving the intention of customers to use applications (IoT) in retail stores retailers should emphasize on the pre-mentioned five factors to gain customer acceptance of e-retailing.

What Differentiate the Current Study from Previous Studies?

This study is one of a few studies, which investigates the effect of Mobile Phone Application on E-Service Quality in Amman, Jordan retail stores. Most of the previous studies were conducted to find the using of mobile phone application as a tool to satisfy customers and gain their loyalty, without investigating sub-variables on the mobile application, this study divided mobile phone application into five sub-variables to investigate their effects on e-service quality of retail stores. The results of this study could be helpful to be employed immediately, in which it should be conducted in Amman-Jordan.

Almost all previous studies have investigated the effect of using a mobile application on customer satisfaction and loyalty; this study will examine the role of the mobile application to enhance service quality provided by electronic devices.

Chapter Three: Study Methodology (Methods and Procedures):

Study Design:

The current study is considered as descriptive and cause/effect study. It aims to study the effect of Mobile Phone Application sub-variables: Usability, Availability, Information, Security and Privacy on E-Service Quality dimensions (Ease of Use, Fulfillment, Responsiveness, Reliability, and Effectiveness) at Amman, Jordan retail stores. This study begins with a literature review, expert's interviews to develop a questionnaire, which used to collect the data. The collected data checked and coded on SPSS 20. Then normality, validity and reliability test, and the correlation between variables checked, finally, multiple regression used to test the hypothesis.

Study Population, Sample and Unit of Analysis:

Population and Sample: the population of the study is customers, who are purchasing their goods from a retailer in Al-Rwabi, Amman, Jordan, which counted 44 retail stores. The sample selected from the population by using convenience-sampling type.

Unit of Analysis: Unit of analysis composed from customers who are regularly purchasing their goods from the retail stores in Al-Rwabi distract Amman, Jordan, as shown in appendix (6).

Data Collection Methods (Tools):

For this study, data collected from two sources:

Secondary data: collected from books, researches, articles, dissertations, thesis, working papers, journals, and the Internet.

Primary data: the questionnaire is used to fulfil the purpose of this study.

The Questionnaire:

The questionnaire developed based on the hypothesis and research model, which will include three sections.

Questionnaire Variables:

The questionnaire includes three sections as follows:

Demographic Dimensions: Gender, age, Education, Social status, Number of family members and Income.

Independent Variable (Mobile Phone Application): Which includes the following sub-variables: Usability, Availability, Information, Security and Privacy. Each sub-variable is measured by five items.

Dependent Variable (E-Service Quality): Which includes the following dimensions: Ease of Use, Fulfilment, Responsiveness, Reliability, and Effectiveness. Each dimension is measured by five items.

All sub-variables and dimensions will be measured by suitable questions rated by five Likert scales to measure customers' perception, ranging from value 1 (strongly disagree) to value 5 (strongly agree) used all over the questionnaire.

Data Analysis Methods:

The questionnaires were distributed to customers who are purchasing their goods from 20-retail stores at Al-Rwabi district in Amman, Jordan, who accepted cooperation in this study out of 44 retail stores and they were available at the time of implementing this study. Three hundred questionnaires were distributed to customers, 227 were returned, and 17 questionnaires were excluded due to incompleteness, so, only 210 questionnaires were suitable for further analysis, then the completed questionnaires were coded against SPSS 20.

Validity Test:

Three methods used to confirm validity: content validity was assured through using different sources to collect the data such as books, researches, articles, dissertations, thesis, working papers, journals, and the Internet. Face validity was confirmed via the panel of judge committee (referee) as indicated in appendix (1). Then Principal Component Factor Analysis with KMO was used to test construct validity, if factor loading for each item within its group is more than 35%, then construct validity is assumed (Hair, et. al. 2014). While Kaiser-Meyer-Olkin (KMO) is used to measure sampling adequacy, KMO values between 0.8 and 1 indicate that high sampling adequacy and 0.6 considered acceptable (Ferguson and Cox 1993). Bartlett's Test of Sphericity (BTS) of samples indicates samples harmony, and variance percentage explains the power of explanation when significance is less than 0.05 (95% confidence level), this indicates the usefulness factor analysis (Williams, et. al. 2010).

Independent Variable (Mobile Phone Application):

Table (3.1) shows that the factor loading of Mobile Phone Application sub-variables rated between 0.697 and 0.837. Moreover, KMO has rated 82.7%, which indicates good adequacy, and the Chi2 is 382.151, which indicates the fitness of model, also, the test produced an explanatory value of 59.971, which explains 59.97% of the variance. Finally, the significance of Bartlett's Sphericity is less than 0.05. Based on these results the construct validity is assumed.

Table (3.1): Principal Component Factor Analysis Mobile Phone Application:

Item	Factor1	KMO	Chi^2	BTS	Var%	Sig.
USA	0.697	0.827	382.151	10	59.971	0.000
AVA	0.815					
INF	0.837					
SEC	0.828					
PRI	0.679					

Principal Component Analysis.

Usability:

Table (3.2) shows that the factor loading of each item within the Usability group has related between 0.637 and 0.822. KMO has rated 79.5%, which indicates good adequacy, and the Chi2 293.036, which indicates the fitness of model, and the test produced an explanatory value of 54.529, which explains 54.53% of the variance. Finally, the significance of Bartlett's Sphericity is less than 0.05. Based on these results the construct validity is assumed.

Table (3.2): Principal Component Factor Analysis for Usability:

Item	Factor1	KMO	Chi^2	BTS	Var%	Sig.
USA1	0.637	0.795	293.036	10	54.529	0.000
USA2	0.763					
USA3	0.822					
USA4	0.780					
USA5	0.674					

Principal Component Analysis.

Availability:

Table (3.3) shows that the factor loading of each item within the Availability group has related between 0.577 and 0.734. KMO has rated 78.3%, which indicates good adequacy, and the Chi2 167.297, which indicates the fitness of model, and the test produced an explanatory value of 46.656, which explains 46.65% of the variance. Finally, the significance of Bartlett's Sphericity is less than 0.05. Based on these results the construct validity is assumed.

Table (3.3): Principal Component Factor Analysis for Availability items:

Item	Factor1	KMO	Chi^2	BTS	Var%	Sig.
AVA1	0.577	0.783	167.297	10	46.656	0.000
AVA2	0.706					
AVA3	0.701					
AVA4	0.734					
AVA5	0.687					

Principal Component Analysis.

Information:

Table (3.4) shows that the factor loading of each item within the Information group has related between 0.680 and 0.783. KMO has rated 82.8%, which indicates good adequacy, and the Chi2 281.241, which indicates the fitness of model, and the test produced an explanatory value of 55.300, which explains 55.3% of the variance. Finally, the significance of Bartlett's Sphericity is less than 0.05. Based on these results the construct validity is assumed.

Table (3.4): Principal Component Factor Analysis for Information items:

Item	Factor1	KMO	Chi^2	BTS	Var%	Sig.
INF1	0.764	0.828	281.241	10	55.300	0.000
INF2	0.727					
INF3	0.783					
INF4	0.759					
INF5	0.680					

Principal Component Analysis.

Security:

Table (3.5) shows that the factor loading of each item within the Security group has related between 0.733 and 0.816. KMO has rated 81.5%, which indicates good adequacy, and the Chi^2 355.200, which indicates the fitness of model, and the test produced an explanatory value of 58.771, which explains 58.77% of the variance. Finally, the significance of Bartlett's Sphericity is less than 0.05. Based on these results the construct validity is assumed.

Table (3.5): Principal Component Factor Analysis Security items:

Item	Factor1	KMO	Chi^2	BTS	Var%	Sig.
SEC1	0.745	0.815	355.200	10	58.771	0.000
SEC2	0.758					
SEC3	0.816					
SEC4	0.733					
SEC5	0.778					

Principal Component Analysis.

Privacy:

Table (3.6) shows that the factor loading of each item within the Privacy group has related between 0.662 and 0.829. KMO has rated 79.3%, which indicates good adequacy, and the Chi2 329.425, which indicates the fitness of model, and the test produced an explanatory value of 56.714, which explains 56.71% of the variance. Finally, the significance of Bartlett's Sphericity is less than 0.05. Based on these results the construct validity is assumed.

Table (3.6): Principal Component Factor Analysis Privacy items:

Item	Factor1	KMO	Chi^2	BTS	Var%	Sig.
PRI1	0.705	0.793	329.425	10	56.714	0.000
PRI2	0.662					
PRI3	0.829					
PRI4	0.770					
PRI5	0.788					

Principal Component Analysis.

Dependent variable (E-Service Quality):

Table (3.7) shows that the factor loading of E-Service Quality Dimensions has related between 0.808 and 0.870. KMO has rated 85.1%, which indicates good adequacy, and the Chi2 564.971, which indicates the fitness of model, and the test produced an explanatory value of 69.021, which explains 69.02% of the variance. Finally, the significance of Bartlett's Sphericity is less than 0.05. Based on these results the construct validity is assumed.

Table (3.7): Principal Component Factor Analysis for E-Service Quality:

Item	Factor1	KMO	Chi^2	BTS	Var%	Sig.
EAS	0.819	0.851	564.971	10	69.021	0.000
FUL	0.870					
RES	0.844					
REL	0.808					
EFF	0.811					

Principal Component Analysis.

Ease of Use:

Table (3.8) shows that the factor loading of each item within Ease of Use group has related between 0.751 and 0.807. KMO has rated 83.8%, which indicates good adequacy, and the Chi2 363.826, which indicates the fitness of model, and the test produced an explanatory value of 60.135, which explains 60.13% of the variance. Finally, the significance of Bartlett's Sphericity is less than 0.05. Based on these results the construct validity is assumed.

Table (3.8): Principal Component Factor Analysis for Ease of Use items:

Item	Factor1	KMO	Chi^2	BTS	Var%	Sig.
EAS1	0.789					
EAS2	0.807					
EAS3	0.751	0.838	363.826	10	60.135	0.000
EAS4	0.770					
EAS5	0.759					

Principal Component Analysis.

Fulfilment:

Table (3.9) shows that the factor loading of each item within the Fulfillment group has related between 0.606 and 0.811. KMO has rated 76.3%, which indicates good adequacy, and the Chi2 286.757, which indicates the fitness of model, and the test produced an explanatory value of 53.443, which explains 53.44% of the variance. Finally, the significance of Bartlett's Sphericity is less than 0.05. Based on these results the construct validity is assumed.

Table (3.9): Principal Component Factor Analysis for Fulfillment items:

Item	Factor1	KMO	Chi^2	BTS	Var%	Sig.
FUL1	0.766	0.763	286.757	10	53.443	0.000
FUL2	0.811					
FUL3	0.746					
FUL4	0.606					
FUL5	0.710					

Principal Component Analysis.

Responsiveness:

Table (3.10) shows that the factor loading of each item within the Responsiveness group has related between 0.624 and 0.771. KMO has rated 70.5%, which indicates good adequacy, Chi2 298.686, which indicates the fitness of the model, and the test produced an explanatory value of 50.989, which explains 50.98% of the variance. Finally, the significance of Bartlett's Sphericity is less than 0.05. Based on these results the construct validity is assumed.

Table (3.10): Principal Component Factor Analysis for Responsiveness items:

Item	Factor1	KMO	Chi^2	BTS	Var%	Sig.
RES1	0.624	0.705	298.686	10	50.989	0.000
RES2	0.718					
RES3	0.771					
RES4	0.764					
RES5	0.683					

Principal Component Analysis.

Reliability:

Table (3.11) shows that the factor loading of each item within the Reliability group has related between 0.628 and 0.791. KMO has rated 79.5%, which indicates good adequacy, and the Chi2 284.788, which indicates the fitness of model, and the test produced an explanatory value of 54.273, which explains 54.27% of the variance. Finally, the significance of Bartlett's Sphericity is less than 0.05. Based on these results the construct validity is assumed.

Table (3.11): Principal Component Factor Analysis for Reliability items:

Item	Factor1	KMO	Chi^2	BTS	Var%	Sig.
REL1	0.722	0.795	284.788	10	54.273	0.000
REL2	0.791					
REL3	0.787					
REL4	0.628					
REL5	0.743					

Principal Component Analysis.

Effectiveness:

Table (3.12) shows that the factor loading of each item within the Effectiveness group has related between 0.675 and 0.793. KMO has rated 81.4%, which indicates good

adequacy, and the Chi2 269.704, which indicates the fitness of model, and the test produced an explanatory value of 54.275, which explains 54.27% of the variance. Finally, the significance of Bartlett's Sphericity is less than 0.05. Based on these results the construct validity is assumed.

Table (3.12): Principal Component Factor Analysis for Effectiveness items:

Item	Factor1	KMO	Chi^2	BTS	Var%	Sig.
EFF1	0.715	0.814	269.704	10	54.275	0.000
EFF2	0.675					
EFF3	0.738					
EFF4	0.793					
EFF5	0.756					

Principal Component Analysis.

Reliability Test:

(Cronbach's Alpha coefficients of internal consistency) used to test the consistency and suitability of the measuring tools, the reliable tools have a Cronbach's alpha above 0.70 and accepted if it is exceeding 0.60 (Hair, et. al. 2014). Table (3.13) shows that Mobile Phone Application Sub-Variables Cronbach's alpha ranges between 0.712 and 0.821. Moreover, it is for E-Service Quality Dimensions between 0.757 and 0.831, as shown in table (3.13) all sub-variables and dimensions are above 0.60, therefore reliability is assumed:

Table (3.13): Reliability Test for all variables:

No.	Variable	No. of Items/Sub-variables	Cronbach's Alpha
1	Usability	5	0.787
2	Availability	5	0.712
3	Information	5	0.797
4	Security	5	0.821
5	Privacy	5	0.805
	Total Mobile Phone Application	**5 Sub-Variables**	**0.829**
1	Ease of Use	5	0.831
2	Fulfillment	5	0.777
3	Responsiveness	5	0.757
4	Reliability	5	0.784
5	Effectiveness	5	0.789
	Total E-Service Quality	**5 Dimensions**	**0.887**

Demographic Characteristics of Respondents:

The following section describes the respondents' characteristics. Frequency and percentage of participants include Gender, age, education, social status, Number of Family Members, and Income.

Gender:

Table (3.14) shows that the majority of respondents are males, where 151 (71.9%), followed by females 59 with (28.1%) of respondents, this shows that the males who purchase goods from the 22 retailers are the highest respondents from females.

Table (3.14): Respondents Gender

		Frequency	Percent
Gender	Male	151	71.9
	Female	59	28.1
	Total	**210**	**100.0**

Age:

Table (3.15) shown that the majority of respondents ages are between (25-35) years (55.7%), with 117 respondents followed by respondents between (35-45) years (21%), with 44 respondents followed by respondents between (45 or more) years (11.9%), with 25 respondents, finally respondents between (18-25) years (11.4%) with 24 respondents.

Table (3.15.): Respondents Age

		Frequency	Percent
Age	18-25	24	11.4
	25-35	117	55.7
	35-45	44	21.0
	45 or more than	25	11.9
	Total	**210**	**100.0**

Education:

Table (3.16) shows that the majority of respondents holds a bachelor's degree with 108 respondents (51.4%), followed by 92 respondents holds diploma degree with (43.8%), followed by 8 respondents holds master's degree with (3.8%), finally 2 respondents holds PHD degree with (1%).

Table (3.16): Respondents Education

		Frequency	Percent
Education	Diploma	92	43.8
	Bachelor	108	51.4
	Master	8	3.8
	PHD	2	1.0
	Total	**210**	**100.0**

Social Status:

Table (3.17) shows that the majority of respondents are married with 113 respondents (53.8%), followed by 97 respondents were single (46.2%).

Table (3.17): Respondents Social Status

		Frequency	Percent
Social Status	Married	113	53.8
	Single	97	46.2
	Total	**210**	**100.0**

The Number of Family Members:

Table (3.18) shows that the majority of respondents married and have (five or more) members in the family with 85 respondents (40.5%), followed by 62 respondents (29.5%) have four members in the family, followed by 43 respondents (20.5%) have three members in the family; finally, 20 respondents (9.5%) have two members.

Table (3.18): Respondents Number of Family Members

		Frequency	Percent
No. of Family Members	2	20	9.5
	3	43	20.5
	4	62	29.5
	5 or more than	85	40.5
	Total	**210**	**100.0**

Income:

Table (3.19) shows that the majority of respondents have 500 or less as an income with 78 respondents (37.2%), followed by 74 respondents (35.2%) have an income between 500 and 750, followed by 39 respondents (18.6%) have an income between 750 and 1000, finally 19 respondents (9%) have an income of more than 1000.

Table (3.19): Respondents Income

		Frequency	Percent
Income	Less of 500	78	37.2
	500-750	74	35.2
	750-1000	39	18.6
	More than 1000	19	9.0
	Total	**210**	**100.0**

Chapter Four: Data Analysis

Introduction:

This chapter includes data descriptive statistical analysis of respondents' perception, Person Bivariate Correlation matrix to test the relationship between Mobile Phone Application sub-variables with each other, E-Service quality dimensions with each other, and between Mobile Phone Application variable and sub-variables with E-Service Quality dimensions, finally multiple regression to check hypothesis.

Descriptive Statistical Analysis:

For further analysis of the respondent's perception, the mean, standard deviation, t-value, ranking and importance are used, also the degree of each sub-variable importance for dimensions and items.

The importance of each item was calculated using the following formula:

5-1/3= 1.33

Therefore, the importance of each item will be divided into three categories as following, between 3.67 and 5.00 high importance, between 2.34 and 3.66 medium importance, and finally between 1.00 and 2.33 will be low importance.

Independent variable (Mobile Phone Application):

Table (4.1) shows that the means of Mobile Phone Application sub-variables ranges between 3.79 and 4.11 with a standard deviation between 0.67 and 0.84, this explains that respondents agree on the high importance of Mobile Phone Application sub-variables. The average mean of Mobile Phone Application sub-variables is 3.92 with a standard deviation of 0.57, which shows that respondents agree on the high importance of Mobile Phone Application sub-variables, where the average of t-value=23.27 is more

than T-tabulated=1.96. Table (4.1) shows that usability has rated high importance, followed by information, then privacy, security, availability, respectively.

Table (4.1): Mean, Standard Deviation, t-value, Ranking and Importance of Mobile Phone Application Sub-Variable

No.		M	S.D	t	Sig.	Rank	Imp.
1	Usability	4.11	0.72	22.44	0.00	1	High
2	Availability	3.79	0.67	16.94	0.00	5	High
3	Information	3.98	0.73	19.53	0.00	2	High
4	Security	3.80	0.84	13.90	0.00	4	High
5	Privacy	3.92	0.76	17.73	0.00	3	High
	Mobile Phone Application	**3.92**		**23.27**	**0.00**		**High**

T-tabulated=1.960

Usability:

Table (4.2) shows that the means of Usability items ranges between 3.96 and 4.27 with a standard deviation between 0.92 and 1.05. This explains that respondents agree on the high importance of all usability items. The average mean of usability items is 4.11 with a standard deviation of 0.71, which shows that respondents agree on the high importance of usability sub-variable, where the average of t-value=22.44 is more than T-tabulated 1.96.

Table (4.2): Mean, Standard Deviation, t-value, Ranking and Importance Usability items

No.		M	S.D	t	Sig.	Rank	Imp.
1	The mobile application interface provides enjoyment while use it.	4.07	0.97	15.94	0.00	3	High
2	The mobile application simple enough to learn.	3.96	1.05	13.30	0.00	5	High
3	The mobile application includes easily accessibility.	4.22	0.95	18.41	0.00	2	High
4	The mobile application provides fast services.	4.27	0.92	19.90	0.00	1	High
5	The mobile application meets user needs.	4.06	0.95	16.00	0.00	4	High
	Total Usability	**4.11**		**22.44**	**0.00**		**High**

T-tabulated=1.960

Availability:

Table (4.3) shows that the means of Availability items ranges between 3.51 and 4.09 with a standard deviation between 0.92 and 1.05. This explains that respondents agree on the high importance of Availability items. The average mean of Availability sub-

variable is 3.78 with a standard deviation of 0.67, shows that respondents agree on the high importance of Availability, where the average of t-value=16.94 is more than T-tabulated=1.96.

Table (4.3): Mean, Standard Deviation, t-value, Ranking and Importance Availability items

No.		M	S.D	t	Sig.	Rank	Imp.
1	The mobile application constantly available to use.	4.09	0.94	16.80	0.00	1	High
2	The mobile application available to correct mistakes anytime.	3.70	1.05	9.59	0.00	4	High
3	The mobile application provides responses to requests.	3.72	0.98	10.61	0.00	3	High
4	The mobile application runs in fast time.	3.96	0.92	14.99	0.00	2	High
5	The mobile application runs without errors.	3.51	1.02	7.22	0.00	5	Medium
	Total Availability	**3.78**		**16.94**	**0.00**		**High**

T-tabulated=1.960

Information:

Table (4.4) shows that the means of Information items ranges between 3.94 and 4.07 with a standard deviation between 0.93 and 1.03. This explains that respondents agree on the high importance of Information items. The average mean of Information items is 3.98 with a standard deviation of 0.72, shows that respondents agree on the high importance of Information items, where the average of t-value=19.53 is more than T-tabulated=1.96.

Table (4.4): Mean, Standard Deviation, t-value, Ranking and Importance Information items

No.		M	S.D	t	Sig.	Rank	Imp.
1	The mobile application provides complete information.	3.96	1.03	13.47	0.00	1	High
2	The mobile application includes accurate information.	4.02	0.96	15.43	0.00	4	High
3	The mobile application contains updated information	4.07	0.97	15.83	0.00	3	High
4	The mobile application provides clear information.	3.94	0.93	14.56	0.00	2	High
5	The mobile application present useful information on time.	3.97	0.99	14.01	0.00	5	High
	Total Information	**3.98**		**19.53**	**0.00**		**High**

T-tabulated=1.960

Security:

Table (4.5) shows that the means of Security items ranges between 3.58 and 3.98 with a standard deviation between 1.00 and 1.24. This explains that respondents agree on the high importance of Security items. The average mean of Security items is 3.80 with a standard deviation of 0.83, shows that respondents agree on the high importance of Security, where the average of t-value=13.90 is more than T-tabulated=1.96.

Table (4.5): Mean, Standard Deviation, t-value, Ranking and Importance Security items

No.		M	S.D	t	Sig.	Rank	Imp.
1	The mobile application is secure to use.	3.58	1.24	6.73	0.00	5	Medium
2	The mobile application includes secure password.	3.98	1.02	13.92	0.00	1	High
3	The mobile application secures payments.	3.91	1.04	12.63	0.00	3	High
4	The mobile application security terms available to review.	3.96	1.00	13.91	0.00	2	High
5	The mobile application protects data from theft.	3.64	1.17	7.87	0.00	4	Medium
	Total Security	**3.80**		**13.90**	**0.00**		**High**

T-tabulated=1.960

Privacy:

Table (4.6) shows that the means of Privacy items ranges between 3.87 and 4.00 with a standard deviation between 0.96 and 1.07. This explains that respondents agree on the high importance of Privacy items.

Table (4.6): Mean, Standard Deviation, t-value, Ranking and Importance Privacy items

No.		M	S.D	t	Sig.	Rank	Imp.
1	The mobile application gets permission to use personal information.	3.99	1.07	13.40	0.00	2	High
2	The mobile application preserves the personal data.	4.00	0.98	14.63	0.00	1	High
3	The mobile application protects location information.	3.87	0.97	12.90	0.00	5	High
4	The mobile application protects information from exposing.	3.88	1.05	11.90	0.00	4	High
5	The mobile application protects personal messages	3.96	0.96	14.44	0.00	3	High
	Total Privacy	**3.92**		**17.73**	**0.00**		**High**

T-tabulated=1.960

The average mean of Privacy items is 3.92 with a standard deviation of 0.75, shows that respondents agree on the high importance of Privacy, where the average of t-value=17.73 is more than T-tabulated=1.96.

Dependent Variable (E-Service Quality):

Table (4.7) shows that the means of E-Service Quality dimensions range between 3.72 and 4.02 with a standard deviation between 0.68 and 0.73, this explains that respondents agree on the high importance of E-Service Quality dimensions. The average mean of E-Service Quality dimensions is 3.89, with a standard deviation of 0.58, shows that respondents agree on the high importance of E-Service Quality dimensions, where the average of t-value=21.95 is more than T-tabulated=1.96. Table (4.7) shows that Ease of use has rated highest importance, followed by fulfilment, then effectiveness, responsiveness, reliability, respectively.

Table (4.7): Mean, Standard Deviation, t-value, Ranking and Importance of E-Service Quality dimensions

No.		**M**	**S.D**	**t**	**Sig.**	**Rank**	**Imp.**
1	Ease of Use	4.02	0.71	20.88	0.00	1	High
2	Fulfillment	3.97	0.68	20.62	0.00	2	High
3	Responsiveness	3.76	0.73	15.08	0.00	4	High
4	Reliability	3.72	0.71	14.68	0.00	5	High
5	Effectiveness	3.95	0.68	20.16	0.00	3	High
	E-Service Quality	**3.89**		**21.95**	**0.00**		**High**

T-tabulated=1.960

Ease of Use:

Table (4.8) shows that the means of Ease of Use items ranges between 3.91 and 4.09 with a standard deviation between 0.80 and 1.05. This explains that respondents agree on the high importance of Ease of Use items. The average mean of Ease of Use items is 4.02 with a standard deviation of 0.71, shows that respondents agree on the high importance of Ease of Use items, where the average of t-value=20.88 is more than T-tabulated=1.96.

Table (4.8): Mean, Standard Deviation, t-value, Ranking and Importance of Ease of Use items

No.		M	S.D	t	Sig.	Rank	Imp.
1	The user understands mobile application easily.	3.91	1.05	12.48	0.00	5	High
2	The mobile application provides friendly interface.	4.02	0.80	18.38	0.00	4	High
3	The user finds mobile application accessible easily	4.09	0.91	17.36	0.00	1	High
4	The user finds his interests on the application easily.	4.07	0.89	17.24	0.00	3	High
5	The user interacts with mobile application easily.	4.08	0.91	17.18	0.00	2	High
	Total Ease of Use	**4.02**		**20.88**	**0.00**		**High**

T-tabulated=1.960

Fulfilment:

Table (4.9) shows that the means of Fulfilment items ranges between 3.95 and 4.26 with a standard deviation between 0.85 and 1.01. This explains that respondents agree on the high importance of all Fulfillment items. The average mean of Fulfillment items is 3.97 with a standard deviation of 0.68, shows that respondents agree on the high importance of Fulfillment items, where t-value=20.62 is more than T-tabulated=1.96.

Table (4.9): Mean, Standard Deviation, t-value, Ranking and Importance of Fulfillment items

No.		M	S.D	t	Sig.	Rank	Imp.
1	The user gets smooth transactions on mobile application.	3.95	1.01	13.65	0.00	2	High
2	The user finds his needs on mobile application.	3.95	0.93	14.77	0.00	3	High
3	The mobile application meets user expectation.	3.84	0.90	13.55	0.00	5	High
4	The mobile application gives individual attention.	3.90	0.99	13.02	0.00	4	High
5	The user interacts with mobile application anytime.	4.26	0.85	21.33	0.00	1	High
	Fulfilment	**3.97**		**20.62**	**0.00**		**High**

T-tabulated=1.960

Responsiveness:

Table (4.10) shows that the means of Responsiveness items ranges between 3.41 and 4.17 with a standard deviation between 0.94 and 1.12. This explains that respondents

agree on the high importance of Responsiveness items. The average mean of Responsiveness items is 3.76 with a standard deviation of 0.73, shows that respondents agree on the high importance of Responsiveness items, where the average of t-value=15.08 is more than T-tabulated=1.96.

Table (4.10): Mean, Standard Deviation, t-value, Ranking and Importance of Responsiveness items

No.		M	S.D	t	Sig.	Rank	Imp.
1	The mobile application gives prompt service.	4.17	0.94	17.86	0.00	1	High
2	The mobile application provides fast response.	4.06	0.94	16.37	0.00	2	High
3	The mobile application solves user complaints immediately.	3.41	1.10	5.33	0.00	5	Medium
4	The mobile application deal with user requests immediately.	3.78	1.03	10.90	0.00	3	High
5	The mobile application solves errors immediately.	3.45	1.12	5.76	0.00	4	Medium
	Responsiveness	**3.76**		**15.08**	**0.00**		**High**

T-tabulated=1.960

Reliability:

Table (4.11) shows that the means of Reliability items ranges between 3.51 and 3.88 with a standard deviation between 0.88 and 1.09. This explains that respondents agree on the high importance of Reliability items. The average mean of Reliability items is 3.72 with a standard deviation of 0.71, shows that respondents agree on the high importance of Responsiveness items, where the average of t-value=14.68, which indicates that t-value is more than T-tabulated=1.96.

Table (4.11): Mean, Standard Deviation, t-value, Ranking and Importance of Reliability items

No.		M	S.D	t	Sig.	Rank	Imp.
1	The mobile application provides the correct service from the first time.	3.51	1.09	6.77	0.00	5	Medium
2	The mobile application delivers the expected service.	3.75	0.94	11.53	0.00	3	High
3	The mobile application provides service on time.	3.87	0.89	14.18	0.00	2	High
4	The mobile application includes consistent services.	3.88	0.88	14.40	0.00	1	High
5	The user complete purchases through mobile application without errors.	3.69	1.08	9.23	0.00	4	High
	Reliability	**3.72**		**14.68**	**0.00**		**High**

T-tabulated=1.960

Effectiveness:

Table (4.12) shows that the means of Effectiveness items ranges between 3.74 and 4.09 with a standard deviation between 0.82 and 1.03. This explains that respondents agree on the high importance of Effectiveness items. The average mean of Effectiveness items is 3.95 with a standard deviation of 0.68, shows that respondents agree on the high importance of Effectiveness items, where the average of t-value=20.16, which indicates that t-value is more than T-tabulated=1.96.

Table (4.12): Mean, Standard Deviation, t-value, Ranking and Importance of Effectiveness items

No.		M	S.D	t	Sig.	Rank	Imp.
1	The user achieves his goals when using mobile application.	4.09	0.92	17.17	0.00	5	Medium
2	The user transaction can be completed accurately on mobile application.	3.91	0.82	15.91	0.00	3	High
3	The user finds mobile application do the tasks as requested.	4.04	0.88	17.07	0.00	2	High
4	The mobile application complete purchases accurately.	3.74	1.03	10.36	0.00	1	High
5	The user finds mobile application easy to navigate	4.09	0.99	15.82	0.00	4	High
	Effectiveness	**3.95**		**20.16**	**0.00**		**High**

T-tabulated=1.960

The Relationship between Independent and Dependent Variables:

Table (4.13) shows that the relationships between Mobile Phone Application sub-variables (usability, availability, information, security, and privacy) are medium to strong, where r ranging between 0.356 and 0.628. It also shows the relationships between E-Service quality dimensions are very strong, where r ranges between 0.513 and 0.728. Finally, result shows that the relationships between Mobile Phone Application sub-variables and E-Service Quality are strong, where r ranges between 0.507 and 0.681, and the relationship between Mobile Phone Application and E-Service Quality is very strong, where r equals 0.761.

Table (4.13): Bivariate Pearson Correlation between all Variables and Sub-Variables.

No	Variables	1	2	3	4	5	6	7	8	9	10	11	12
1	Usability												
2	Availability	.493**											
		.000											
3	Information	.489**	.628**										
		.000	.000										
4	Security	.411**	.613**	.620**									
		.000	.000	.000									
5	Privacy	.356**	.372**	.453**	.515**								
		.000	.000	.000	.000								
6	Mobile Phone Application	.703**	.794**	.824**	.832**	.705**							
		.000	.000	.000	.000	.000							
7	Ease of Use	.483**	.470**	.610**	.458**	.424**	.631**						
		.000	.000	.000	.000	.000	.000						
8	Fulfillment	.552**	.534**	.670**	.536**	.457**	.710**	.728**					
		.000	.000	.000	.000	.000	.000	.000					
9	Responsiveness	.374**	.598**	.564**	.572**	.419**	.654**	.603**	.666**				
		.000	.000	.000	.000	.000	.000	.000	.000				
10	Reliability	.322**	.483**	.486**	.463**	.400**	.558**	.513**	.575**	.658**			
		.000	.000	.000	.000	.000	.000	.000	.000	.000			
11	Effectiveness	.452**	.496**	.502**	.495**	.408**	.609**	.557**	.628**	.574**	.621**		
		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		
12	E-Service Quality	.524**	.622**	.681**	.608**	.507**	.761**	.819**	.864**	.846**	.813**	.811**	
		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	

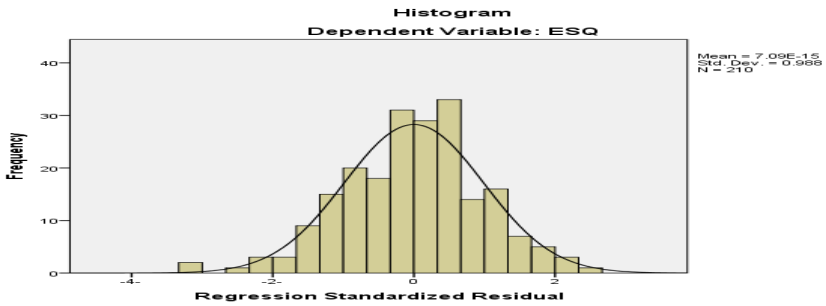
****. Correlation is significant at the 0.01 level (2-tailed)**.

Hypotheses Testing:

After checking validity, reliability and the correlation between Mobile Phone Application and E-Service Quality variables, multiple regression was used to test study hypotheses, also normality, Linearity Test, and independence of errors, multicollinearity (Sekaran, 2016).

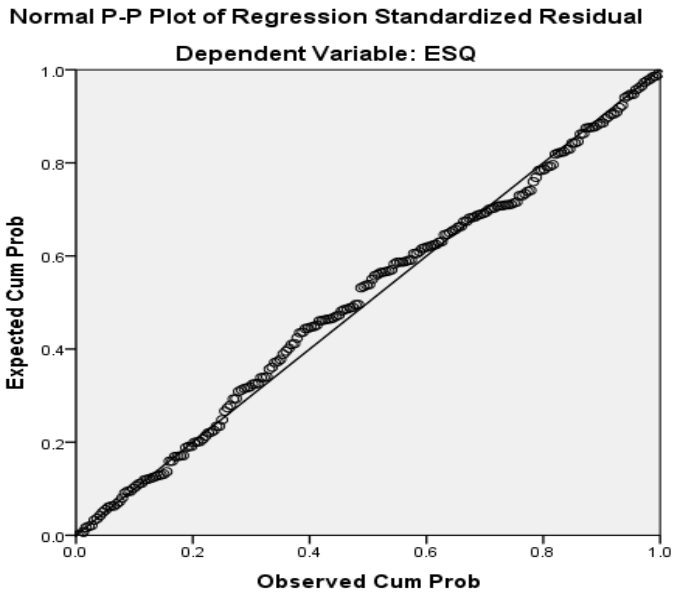
Normality: Figure (4.1) shows that the histogram shape of data follows the normal distribution, this indicates that the residuals do not affect normal distribution.

Figure (4.1): Normality Test



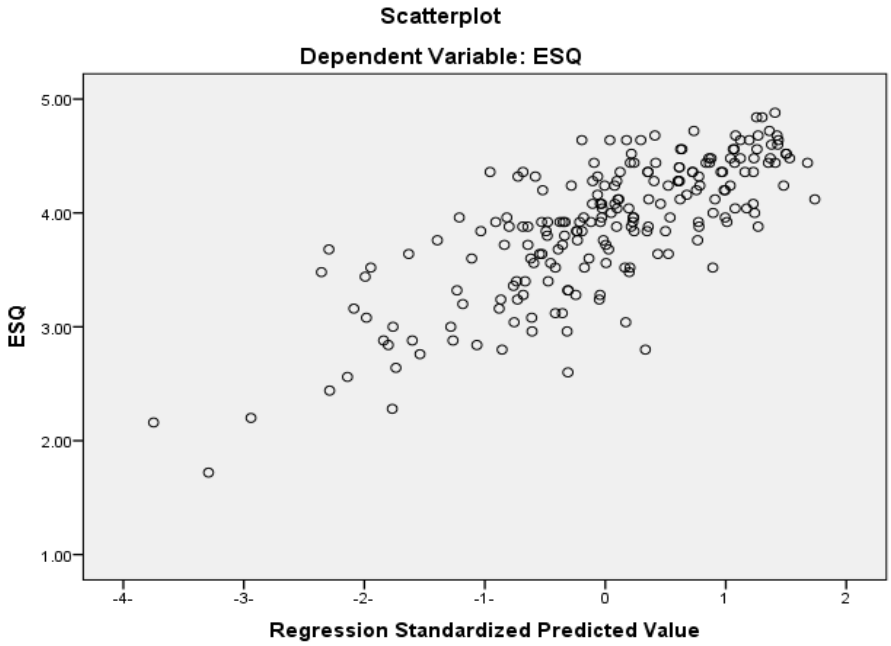
Linearity Test: Figure (4.2) shows that the relationship between independent and dependent variables is linear.

Figure (4.2): Linearity Test



Independence of Errors: Figure (4.3) shows the scatterplot of errors around the mean; also, Durbin-Watson was used to ensure the independence of errors.

Figure (4.3): Scatterplot Test



Multi-Collinearity: Table (4.14) shows the VIF (Variance Inflation Factor) value is less than 10, also the tolerance is more than 10%, therefore the Collinearity model does not violate this assumption. Durbin-Watson is 1.877 and it is below two.

Table (4.14): Durbin-Watson Value and Variance Inflation Rate:

Sub-Variables	Collinearity Statistics		Durbin-Watson
	Tolerance	VIF	
Usability	0.689	1.451	**1.877**
Availability	0.495	2.019	
Information	0.481	2.081	
Security	0.481	2.078	
Privacy	0.694	1.442	

Main hypothesis:

H_{01}: Mobile Phone Application sub-variables (Usability, Availability, Information, Security, and Privacy) do not affect E-Service Quality dimensions of retail stores in Amman Jordan, at a level of significance ($\alpha \leq 0.05$).

Table (4.15) shows that when regressing the five sub-variables of Mobile Phone Application against E-Service Quality dimensions, f value shows the fitness of study model, and R2 shows explanatory power of independent variable on the dependent variable. The model shows that Mobile Phone Application can explain 59% of the variation of E-Service Quality, where (R2=0.590, F=58.787, Sig.=0.000). Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted, which states that Mobile Phone Application sub-variables (Usability, Availability, Information, Security, and Privacy) affect E-Service Quality of retail stores in Amman Jordan, at a level of significance ($\alpha \leq 0.05$).

Table (4.15): Multiple Regression Analysis of Mobile Phone Application Sub-Variables against E-Service Quality.

Model	r	R^2	Adjusted R^2	f	Sig.
1	0.768[a]	0.590	0.580	58.787	0.000[b]

a. Predictors: (Constant), Usability, Availability, Information, Security, and Privacy, b. dependent variable: E-Service Quality.

Table (4.16) shows the effect of a Mobile Phone Application sub-variables on E-Service Quality.

Table (4.16): Multiple Regressions Analysis of Mobile Phone Application Sub-Variables on E-Service Quality (ANOVA).

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.821	0.191		4.304	0.000
	Usability	0.126	0.044	0.154	2.859	0.005
	Availability	0.172	0.055	0.198	3.106	0.002
	Information	0.259	0.052	0.321	4.971	0.000
	Security	0.099	0.045	0.142	2.193	0.029
	Privacy	0.124	0.042	0.160	2.977	0.003

a. dependent variable: E-Service Quality, T-tabulated=1.960

$H_{01.1}$: Mobile Phone Application Usability does not affect E-Service Quality of retail stores in Amman Jordan, at ($\alpha \leq 0.05$).

Table (4.16) shows that there is an effect of Mobile Phone Application (Usability) on E-Service Quality dimensions, where (Beta=0.154, t=2.859, Sig.=0.005, $p<0.05$). Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted, which states that Mobile Phone Application Usability affects E-Service Quality dimensions of retail stores in Amman Jordan, at a level of significance ($\alpha \leq 0.05$).

$H_{01.2}$: Mobile Phone Application Availability does not affect E-Service Quality dimensions of retail stores in Amman Jordan, at a level of significance ($\alpha \leq 0.05$).

Table (4.16) shows that there is an effect of Mobile Phone Application (Availability) on E-Service Quality dimensions, where (Beta=0.198, t=3.106, Sig.=0.002, $p<0.05$). Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted, which states that Mobile Phone Application Availability affects E-Service Quality dimensions of retail stores in Amman Jordan, at a level of significance ($\alpha \leq 0.05$).

$H_{01.3}$: Mobile Phone Application Information does not affect E-Service Quality dimensions of retail stores in Amman Jordan, at a level of significance ($\alpha \leq 0.05$).

Table (4.16) shows that there is a significant effect of Mobile Phone Application (Information) on E-Service Quality, where (Beta=0.321, t=4.971, Sig.=0.000, $p<0.05$). Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted,

which states that Mobile Phone Application Information affects E-Service Quality dimensions of retail stores in Amman Jordan, at a level of significance ($\alpha \leq 0.05$).

$H_{01.4}$: Mobile Phone Application Security does not affect E-Service Quality dimensions of retail stores in Amman Jordan, at a level of significance ($\alpha \leq 0.05$).

Table (4.16) shows that there is an effect of Mobile Phone Application (Security) on E-Service Quality dimensions, where (Beta=0.142, t=2.193, Sig.=0.029, $p<0.05$). Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted, which states that Mobile Phone Application Security affects E-Service Quality dimensions of retail stores in Amman Jordan, at ($\alpha \leq 0.05$).

$H_{01.5}$: Mobile Phone Application Privacy does not affect E-Service Quality dimensions of retail stores in Amman Jordan, at ($\alpha \leq 0.05$).

Table (4.16) shows that there is a significant effect of Mobile Phone Application (Privacy) on E-Service Quality dimensions, where (Beta=0.160, t=2.977, Sig.=0.003, $p<0.05$). Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted, which states that Mobile Phone Application Privacy affects E-Service Quality dimensions of retail stores in Amman Jordan, at ($\alpha \leq 0.05$).

In summary, results show that respondents agree on the high importance of Mobile Phone Application sub-variables usability rated high importance, followed by information, then privacy, security, availability, respectively. Results show that the respondents agree to the high importance of E-Service Quality dimensions, shows that respondents highly agree on E-Service Quality dimensions. Ease of use has rated highest importance, followed by fulfilment, then effectiveness, responsiveness, reliability, respectively.

Results also show that the relationships between Mobile Phone Application sub-variables are medium to strong, and the relationships between E-Service quality

dimensions are very strong, finally, the result shows that the relationships between Mobile Phone Application sub-variables and E-Service Quality are strong, and the relationship between Mobile Phone Application and E-Service Quality is very strong.

Finally, the results of multiple regression analysis show that all Mobile Phone Application sub-variables affect the E-Service Quality, where information has the highest effect, followed by availability, then privacy, usability and security respectively.

The Effect of E-Service Quality Dimensions on Mobile Phone Application:

Table (4.17) shows that when regressing the five dimensions of E-Service Quality against Mobile Phone Application, f value shows the fitness of study model, and R2 shows explanatory power of independent variable on the dependent variable. The model shows that E-Service Quality can explain 59.6% of the variation of Mobile Phone Application, where (R2=0.596, F=60.164, Sig.=0.000). Therefore, the E-Service Quality dimensions affect Mobile Phone Application, at a level of significance ($\alpha \leq 0.05$).

Table (4.17): Multiple Regressions Analysis of E-Service Quality Dimensions against Mobile Phone Application.

Model	r	R^2	Adjusted R^2	f	Sig.
1	0.772[a]	0.596	0.586	60.164	0.000b

a. Predictors: (Constant), Effectiveness, Ease of Use, Reliability, Responsiveness, Fulfillment, b. Dependent Variable: Mobile Phone Application

Table (4.16) shows the effect of a Mobile Phone Application sub-variables on E-Service Quality.

Table (4.18): Multiple Regressions Analysis of E-Service Quality Dimensions against Mobile Phone Application (ANOVA)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.021	0.173		5.896	.000
	Ease of Use	0.114	0.054	0.142	2.111	0.036
	Fulfillment	0.272	0.063	0.324	4.349	0.000
	Responsiveness	0.178	0.054	0.227	3.330	0.001
	Reliability	0.035	0.052	0.044	0.683	0.496
	Effectiveness	0.141	0.053	0.169	2.664	0.008

a. Dependent Variable: Mobile Phone Application, T-tabulated=1.960

Table (4.18) shows that there is an effect for E-Service Quality dimension (Ease of Use) on Mobile Phone Application, at a level of significance ($\alpha \leq 0.05$), where (Beta=0.142, t=2.111, Sig.=0.036, $p<0.05$). There is an effect for E-Service Quality dimension (Fulfillment) on Mobile Phone Application, at a level of significance ($\alpha \leq 0.05$), where (Beta=0.324, t=4.349, Sig.=0.000, $p<0.05$). There is an effect for E-Service Quality dimension (Responsiveness) on Mobile Phone Application, at a level of significance ($\alpha \leq 0.05$), where (Beta=0.227, t=3.330, Sig.=0.001, $p<0.05$). There is an effect for E-Service Quality dimension (Effectiveness) on Mobile Phone Application, at a level of significance ($\alpha \leq 0.05$), where (Beta=0.169, t=2.664, Sig.=0.008, $p<0.05$). There is no significant effect for E-Service Quality dimension (Reliability) on Mobile Phone Application, at a level of significance ($\alpha \leq 0.05$), where (Beta=0.044, t=0.683, Sig.=0.496, $p<0.05$).

Chapter Five: Results' Discussion, Conclusion and Recommendations

Results' Discussion:

The results of this study confirm the importance of mobile phone application sub-variables on e-service quality at retail stores, which provide a base for retail stores and future studies regarding the use of mobile phone application to enhance their services from a customer viewpoint. Results show that respondents agree on the high importance of mobile phone application sub-variables, usability rated high importance, followed by information, then privacy, security, availability. Results also show that the respondents agree to the high importance of e-service quality dimensions, shows that respondents highly agree on e-service quality dimensions. Ease of use has rated highest importance, followed by fulfilment, then effectiveness, responsiveness, reliability, respectively. The study results are supported by previous such as study Kaur (2018) who concluded that usability rated the highest importance within mobile phone application sub-variables by respondents, followed by information which supported by previous studies Ganguli and Roy (2011), and Jung Yim (2016), and Yang (2015), followed by privacy, security, and availability, which supported by previous studies Hubert, et. al. (2017) and Huang, et. al. (2015). Results also show that respondents highly agree on -service quality dimensions, which supported by previous study Agrawal, et. al. (2014). Ease of use rated the highest importance by respondents, which supported by previous studies Cotirlea (2011) and Wang (2014), followed by fulfilment, then effectiveness, responsiveness, reliability, which supported by previous studies Yen and Lu (2008) and Alanezi, et. al. (2011).

Results also show that the relationships between mobile phone application sub-variables are medium to strong, which supported by previous study Onobrakpeya and Stanley (2016), and the relationships between e-service quality dimensions are very strong, which supported by previous study Alanezi, et. al. (2011). Finally, result shows

that the relationships between mobile phone application sub-variables and e-service quality are strong, which supported by previous studies Casagranda, et. al. (2011), Karjaluoto, et. al. (2018), and Thakur (2018), and the relationship between mobile phone application and e-service quality is very strong.

The results of multiple regression analysis show that all mobile phone application sub-variables affect the e-service quality, where information has the highest effect, which supported by previous study Yang (2015), followed by availability, then privacy, usability and security respectively, which supported by previous studies Huang, et. al. (2015) and Agrawal, et. al. (2014).

Conclusion:

The aim of this study is to investigate the effect of mobile phone application on e-service quality at retail stores in Amman from the customer viewpoint. Data collected from 210 customers that regularly purchase their goods from 20 retail stores in Amman, Jordan by questionnaire. After confirming the normality, validity and reliability of the tool, the descriptive analysis carried out, and the correlation between variables checked. Finally, the impact tested by multiple regression to test the study hypotheses. The Conclusion can be summarized in the following points:

Results show that respondents agree on the high importance of mobile phone application sub-variables usability rated the highest importance, followed by information, then privacy, security, availability, respectively, which supported by previous studies. Results show that the respondents agree to the high importance of e-service quality dimensions, shows that respondents highly agree on e-service quality dimensions. Ease of use has rated highest importance, followed by fulfilment, then effectiveness, responsiveness, reliability, respectively. Results also show that the relationships between mobile phone application sub-variables are medium to strong, and the relationships

between e-service quality dimensions are very strong. Moreover, the result shows that the relationships between mobile phone application sub-variables and e-service quality are strong which, and the relationship between a mobile phone application and e-service quality is very strong.

Finally, the results of multiple regression analysis show that all mobile phone application sub-variables affect the e-service quality of retail stores in Amman, Jordan, where information has the highest effect, followed by availability, then privacy, usability and security respectively.

Recommendations:

Recommendations for retail stores in Amman, Jordan.

1. The study recommends that retail stores in Amman should adopt mobile phone application in their businesses to keep their customers against competitors.

2. The study recommends that retail stores in Amman have to emphasis on the usability items of the mobile phone application, which rated the highest importance by respondents.

3. The study recommends that retailer in Amman must include mobile phone application as new technology in their businesses to serve their customers as expected.

4. This study recommends that when developing a mobile phone application for retail stores in Amman must include all sub-variables together because they affect each other.

5. This study recommends reevaluating the retail stores' position about the use of mobile phone application in Amman retailing market to impact on their e-service quality.

6. This study recommends that to develop an effective mobile phone application, retail stores must concentrate on the information sub-variable because it has the highest effect on the service quality provided by electronic devices.

7. The study recommends that retail stores in Amman, using mobile phone application in their businesses to update their application to the results of this study.

Recommendations for Academics and Future Research:

1. The study is carried out on customers who are buying their goods from retail stores in Amman, at Al-Rwabi, the study recommends including customers from other districts to gain correct results.

2. The study is carried out on the retail market in Amman, Jordan. To be able to generalize it is results, the study recommends conducting such a study on the same retail stores in other countries.

3. The study is carried out on the retail industry, the study recommends applying the same variables on other industries that have a similarity with the retail industry.

4. This study was carried out with a limited period; therefore, the study recommends repeating this study after a suitable time to check industry development.

5. The study recommends that there are more variables to include on mobile phone application, which can be done by future studies in the same filed.

6. The study recommends for future studies to include more customers in the sample to ensure the results of this study.

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Appendices:

Appendix (1): Panel of Referees Committee.

No.	Name	Qualification	Organization
1	Prof. Hisham Abu Saimeh	Professor of Computer science	Middle East University
2	Prof. Ahmed Ali Saleh	Associate Prof. Management	Middle East University
4	Dr. Ahmad Al-Saukar	Associate Prof. E-Business	Middle East University
5	Dr. Mohand Abu Hashim	Assistant Prof. E-Business	Middle East University
6	Dr. Amjad Etwaiqat.	Associate Prof. Management	Middle East University
7	Dr. Sameer Al-Jabali	Associate Prof. Marketing	Middle East University
8	Dr. Nasim Matr	Associate Prof. E-Business	Petra University
9	Dr. Arwa Thebean	Assistant Prof. E-Business	Gadara University
10	Dr. Mohammad Al-adaileh	Associate Prof. Management	Middle East University
11	Shaker Mryan	Software Developer	Gadara University

Appendix (2): Referees Committee Letter:

Dear Professor/Doctor…….:

The purpose of this Questionnaire is to investigate the effect of Mobile Phone Application on E-Service Quality in Retail Stores, Amman, Jordan, from the customer Viewpoint.

Kindly referee the attached questionnaire with many thanks. The questionnaire includes (50) paragraph, which directed to the customer to measure their perception on each one.

Please write your suggestions and recommendations on each paragraph opposite to it. Your suggestion and comments will add value to my thesis. I will consider your comments and suggestions in the final version of the questionnaire.

Again, I would like to thank you for your contribution, and if do you have any comment or questions, please contact me on 0798907108.

Thank you for your fruitful contribution

Prepared by Ahmad Mohammad Zaitoun

Supervised by: Dr. Abdel-Aziz A. Sharabati

Appendix (3): Letter and Questionnaire of Respondents (English Version).

جـــامـعـة الـــشرق الأوسـط
MIDDLE EAST UNIVERSITY
Amman - Jordan

The Effect of Mobile Phone Applications on E-Service Quality in Retail Stores: From Customer Viewpoint.

Dear Participant:

This questionnaire is designed to find the effect of "Mobile Phone Application" on the E-service quality at retail stores in Amman, Jordan. It is a requirement of the Master Thesis.

I hope you will evaluate the paragraphs of this questionnaire base on your experience of using mobile applications, which range from (1) Strongly Disagree to (5) strongly Agree please give your suggestions about it and add any comments about the topics that you feel is important for this topic.

We appreciate your participation and guidance for the benefit of this study.

All information is confidential and for scientific research only.

Thanks for your participation and your contribution, and if you have any question, please call (0798907108).

Thank you for your attention.

Researcher: Ahmad Mohammad Zaitoun

Supervisor: Dr. Abdel-Aziz Al Sharabati

Part one: Demographic information

Gender: □Male □Female

Age (years): □18-25 □25-35 □ above 35-45 □above 45

Education: □Diploma □Bachelor □Master □Doctorate

Social status: □ Married □ Signal

Number of family members: □ 2 □ 3 □ 4 □ 5 or more

The following 50 items tap into Mobile Phone Application and its effect on E-Service Quality. Please, answer these questions based on actual and current situation and not on beliefs.

[1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree] based on how you feel about the statement.

Questionnaire

No.	Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5
Mobile Application						
Usability: the degree to which a mobile phone application is enjoyable to use, simple to learn, can be access easily, and can supply needed and fast service.						
1	The mobile application simple to learn.	1	2	3	4	5
2	The mobile application interface provides enjoyment while use it.	1	2	3	4	5
3	The mobile application includes easily accessibility.	1	2	3	4	5
4	The mobile application provides fast services.	1	2	3	4	5
5	The mobile application meets user needs.	1	2	3	4	5
Availability: the ability of a mobile phone application to be continually available, can correct mistake, reply to user requests, and run in fast time to serve user.						
6	The mobile application constantly available to use	1	2	3	4	5
7	The mobile application available to correct mistakes anytime.	1	2	3	4	5
8	The mobile application provides responses to requests.	1	2	3	4	5
9	The mobile application runs in fast time.	1	2	3	4	5
10	The mobile application runs without errors.	1	2	3	4	5
Information: the degree to which mobile phone application can provide complete, accurate, updated, and clear information that user can benefit from it.						
11	The mobile application provides complete information.	1	2	3	4	5
12	The mobile application includes accurate information.	1	2	3	4	5

No.	Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5
13	The mobile application contains updated information	1	2	3	4	5
14	The mobile application provides clear information.	1	2	3	4	5
15	The mobile application present useful information on time.	1	2	3	4	5
Security: the degree to which a mobile phone application can be secure in terms of providing inaccessible password to protect user data and payments from losing or theft.						
16	The mobile application secure to use.	1	2	3	4	5
17	The mobile application includes secure password.	1	2	3	4	5
18	The mobile application secures payments.	1	2	3	4	5
19	The mobile application security terms available to review.	1	2	3	4	5
20	The mobile application protects data from theft.	1	2	3	4	5
Privacy: the degree to which a mobile phone application gets permission from users about their personal data and in the same time protect it from exposing or manipulate.						
21	The mobile application gets permission to use personal information.	1	2	3	4	5
22	The mobile application preserves the personal data.	1	2	3	4	5
23	The mobile application protects location information.	1	2	3	4	5
24	The mobile application protects information from exposing.	1	2	3	4	5
25	The mobile application protects personal messages	1	2	3	4	5
E-Service Quality						
Ease of Use: the degree to which a mobile phone application or website can meet user expectations in terms of ease of use, fulfillment, responsive, reliable, and effective.						
26	The user understands mobile application easily.	1	2	3	4	5
27	The mobile application provides friendly interface.	1	2	3	4	5
28	The user finds mobile application accessible easily	1	2	3	4	5
29	The user finds his interests on the application easily.	1	2	3	4	5
30	The user interacts with mobile application easily.	1	2	3	4	5
Fulfillment: the user ability to obtain smooth transactions, fulfill his needs, and meet his expectations in terms of a getting individual attention on a mobile phone application anytime he wants.						
31	The user gets smooth transactions on mobile application.	1	2	3	4	5
32	The user finds his needs on mobile application.	1	2	3	4	5
33	The mobile application meets user expectation.	1	2	3	4	5

No.	Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5
34	The mobile application gives individual attention.	1	2	3	4	5
35	The user interacts with mobile application anytime.	1	2	3	4	5
Responsiveness: the degree to which a mobile application can serve users in terms of speed, fast response, solving complaints, and can correct errors immediately.						
36	The mobile application gives prompt service.	1	2	3	4	5
37	The mobile application provides fast response.	1	2	3	4	5
38	The mobile application solves user complaints immediately.	1	2	3	4	5
39	The mobile application deal with user requests immediately.	1	2	3	4	5
40	The mobile application solves errors immediately.	1	2	3	4	5
Reliability: the degree to which user can rely and complete tasks on mobile phone application in terms of providing the correct service as requested from the first time, deliver the expected service on time and every time.						
41	The mobile application provides the correct service from the first time.	1	2	3	4	5
42	The mobile application delivers the expected service.	1	2	3	4	5
43	The mobile application provides service on time.	1	2	3	4	5
44	The mobile application includes consistent services.	1	2	3	4	5
45	The user complete purchases through mobile application without errors.	1	2	3	4	5
Effectiveness: the ability of a mobile application to do the right things as requested by user in terms of achieving user goals. Completing transactions and easily navigate inside mobile application.						
46	The user achieves his goals when using mobile application.	1	2	3	4	5
47	The user transaction can be completed accurately on mobile application.	1	2	3	4	5
48	The user finds mobile application do the tasks as requested.	1	2	3	4	5
49	The mobile application complete purchases accurately.	1	2	3	4	5
50	The user finds mobile application easy to navigate	1	2	3	4	5

Appendix (4): Letter and Questionnaire of respondents (Arabic Version):

جـــامـعـــة الـــشـرق الأوسـط
MIDDLE EAST UNIVERSITY
Amman - Jordan

استبانه حول معرفة أثر تطبيق الهاتف المحمول على جودة الخدمة الالكترونية في متاجر التجزئة: من وجهة نظر الزبون

عزيزي المشارك:

هذه الاستبانه لغرض معرفة أثر "تطبيقات الهاتف المحمول" على "جودة الخدمة الإلكترونية" في متاجر التجزئة في عمان، الأردن وهي من متطلبات رسالة الماجستير.

آمل أن تقوم بتقييم فقرات هذه الاستبانه حسب خبرتك السابقة من استخدام تطبيقات الهاتف، والتي تتدرج حسب مقياس ليكرت الخماسي من (1) **لا أوافق بشدة** الى (5) **أوافق بشدة**، يرجى تقديم اقتراحات حول هذا الموضوع وإضافة أي تعليقات حول المواضيع التي تشعر أنها مهمة.

جميع المعلومات سرية ولغايات البحث العلمي فقط.

شكرا" لمشاركتك ومساهمتك، وإذا كان لديك أي سؤال، يرجى الاتصال على (0798907108).

الباحث: أحمد محمد زيتون

المشرف: الدكتور عبد العزيز الشرباتي

الجزء الاول: الخصائص الديموغرافية

النوع الاجتماعي: □ ذكر □ أنثى

العمر: □ 25 – 35 □ بين 35 – 45 □ أكبر من45

المؤهل العلمي: □ دبلوم وما دون □ بكالوريوس □ ماجستير □ دكتوراه

الحالة الاجتماعية: □ متزوج □ أعزب

عدد افراد الاسرة: □ 2 □ 3 □4 □ 5 او اكثر

مستوى الدخل: □ اقل من 500 □ بين 500-750 □ بين 750-1000 □ أكثر من 1000

(الرجاء التأكّدْ من إجابة كُلّ سؤال ووضع دائرة حول الجواب الصحيحَ استِنادًا إلى خبرتك باستخدام تطبيقات الهاتف المحمول وليس بناء على الاعتقاد أو الوضع المثالي تتدرج كل فقرة كالتالي: (1 = غير موافق بشدة.....، 5 موافق بشدة)

الاستبانة

رقم	السؤال	غير موافق بشدة	غير موافق	محايد	موافق	موافق بشدة
		1	2	3	4	5
تطبيق الهاتف المحمول: يتضمن على اولا سهولة الاستخدام، مدى توفر التطبيق للاستخدام، المعلومات التي يوفرها التطبيق، الى اي درجة قد تكون التطبيقات امنة للاستخدام من حيث عدم ضياع المعلومات او السرقة واخيرا الخصوصية التي توفرها التطبيقات للمستخدم من حيث المحافظة على معلوماته الشخصية.						
اولا: قابلية الاستخدام:						
.1	يعتبر تطبيق الهاتف المحمول بسيط للتعلم	1	2	3	4	5
.2	تعتبر واجهة التطبيق ممتعة أثناء الاستخدام.	1	2	3	4	5
.3	يوفر التطبيق سهولة الوصول اليه.	1	2	3	4	5
.4	يوفر التطبيق خدمة سريعة للمستخدم.	1	2	3	4	5
.5	يلبي التطبيق احتياجات المستخدم.	1	2	3	4	5
ثانيا: مدى التوفر للاستخدام						
.6	يعتبر تطبيق الهاتف المحمول متاح باستمرار للاستخدام	1	2	3	4	5
.7	يوفر التطبيق امكانية تصحيح الأخطاء (تعديل الشراء) في أي وقت.	1	2	3	4	5
.8	يوفر التطبيق الردود على استعلامات المستخدم.	1	2	3	4	5
.9	يعمل التطبيق في وقت سريع للاستخدام.	1	2	3	4	5
.10	يعمل التطبيق بدون أخطاء متكررة.	1	2	3	4	5
ثالثا: المعلومات						
.11	يوفر تطبيق الهاتف المحمول معلومات كاملة للمستخدم.	1	2	3	4	5
.12	يوفر التطبيق معلومات دقيقة مثل (GPS).	1	2	3	4	5
.13	يحتوي التطبيق على معلومات محدثة باستمرار.	1	2	3	4	5
.14	يوفر التطبيق معلومات واضحة للمستخدم.	1	2	3	4	5
.15	يوفر التطبيق معلومات مفيدة في الوقت المناسب	1	2	3	4	5
رابعا: الحماية						
.16	يعتبر التطبيق امن للاستخدام.	1	2	3	4	5

رقم	السؤال	غير موافق بشدة	غير موافق	محايد	موافق	موافق بشدة
		1	2	3	4	5
.17	يوفر التطبيق كلمة مرور آمنة للمستخدم.	1	2	3	4	5
.18	يوفر التطبيق حماية لمدفوعات المستخدم.	1	2	3	4	5
.19	يوفر التطبيق شروط الحماية للمستخدم من اجل المراجعة.	1	2	3	4	5
.20	يحمي التطبيق البيانات من السرقة.	1	2	3	4	5
خامسا:	**الخصوصية**					
.21	يطلب التطبيق الاذن لاستخدام المعلومات الشخصية.		2	3	4	5
.22	يحتفظ التطبيق بالبيانات الشخصية للمستخدم.		2	3	4	5
.23	يحمي التطبيق معلومات موقع المستخدم.		2	3	4	5
.24	يحافظ التطبيق بالمعلومات دون كشفها.		2	3	4	5
.25	يوفر التطبيق الحماية لرسائل المستخدم الشخصية		2	3	4	5
جودة الخدمة الالكترونية: وتتضمن خمس متغيرات هم: سهولة الاستعمال، تحقيق الغاية من تطبيقات الهاتف المحمول، استجابة التطبيقات من حيث السرعة والاداء للمستخدمين، الموثوقية وتعني دقة التطبيق من حيث الوقت للخدمة المقدمة للمستخدم، واخيرا مدى فاعلية التطبيق من حيث القيام بالإعمال الصحيحة المطلوبة منه من قبل المستخدم.						
اولا: سهولة الاستعمال						
.26	يفهم المستخدم تطبيق الهاتف المحمول بسهولة.	1	2	3	4	5
.27	يوفر التطبيق واجهة ودية للاستعمال.	1	2	3	4	5
.28	يوفر التطبيق امكانية الوصول إليه بسهولة	1	2	3	4	5
.29	يجد المستخدم اهتماماته من خلال التطبيقات بسهولة.	1	2	3	4	5
.30	يتفاعل المستخدم مع التطبيق بسهولة.	1	2	3	4	5
ثانيا: تحقيق الغاية						
.31	يحصل المستخدم على معاملات سلسة من خلال تطبيق الهاتف المحمول.	1	2	3	4	5
.32	يجد المستخدم احتياجاته من خلال التطبيق بسهولة.	1	2	3	4	5
.33	يلبي التطبيق توقعات المستخدم.	1	2	3	4	5
.34	يوفر التطبيق للمستخدم اهتماما فرديا.	1	2	3	4	5
.35	يتفاعل المستخدم مع التطبيق في أي وقت يريده.	1	2	3	4	5
ثالثا: سرعة الاستجابة						
.36	يوفر تطبيق الهاتف المحمول خدمة سريعة للمستخدم.	1	2	3	4	5
.37	يوفر التطبيق للمستخدم استجابة سريعة.	1	2	3	4	5
.38	يتعامل التطبيق مع شكاوى المستخدم على الفور.	1	2	3	4	5
.39	يتعامل تطبيق الجوال مع طلبات المستخدم على الفور.	1	2	3	4	5
.40	يقدم التطبيق الحلول للأخطاء للمستخدم على الفور.	1	2	3	4	5
رابعا: الموثوقية						
.41	يوفر تطبيق الهاتف المحمول خدمة صحيحة من أول مرة.	1	2	3	4	5
.42	يوفر التطبيق الخدمة المتوقعة للمستخدم.	1	2	3	4	5
.43	يوفر التطبيق الخدمة في الوقت المحدد.	1	2	3	4	5
.44	يوفر التطبيق خدمات متناسقة للمستخدم.	1	2	3	4	5
.45	يوفر التطبيق امكانية اكمال الشراء دون أخطاء.	1	2	3	4	5
خامسا: الفاعلية						
.46	يحقق المستخدم أهدافه عند استخدام تطبيق الهاتف المحمول.	1	2	3	4	5
.47	يوفر التطبيق امكانية إتمام معاملة المستخدم بدقة.	1	2	3	4	5
.48	يرى المستخدم أن تطبيق الهاتف المحمول يقوم بالمهام المطلوبة.	1	2	3	4	5

رقم	السؤال	غير موافق بشدة	غير موافق	محايد	موافق	موافق بشدة
		1	2	3	4	5
.49	يوفر التطبيق امكانية الشراء بدقة للمستخدم.	1	2	3	4	5
.50	يجد المستخدم التطبيق سهل التنقل بداخله.	1	2	3	4	5

Appendix (5): Population: 44 Retail Stores in Amman Jordan, Al-Rwabi District

	Retailer Name	Location	Street
1.	Farah supermarket	Al-Rawabi District	Barakat al zuobi
2.	Hani supermarket	Al-Rawabi District	Suwaybet ben Harmallah
3.	Darna supermarket	Al-Rawabi District	Kareem al zyood
4.	MS supermarket	Al-Rawabi District	ibrahem al qattan
5.	Capital supermarket	Al-Rawabi District	mamdouh al sarayrah
6.	Rafedain supermarket	Al-Rawabi District	princess tharwat al hasan
7.	Khairo supermarket	Al-Rawabi District	saed al sayeh
8.	33 supermarkets	Al-Rawabi District	mamdouh al sarayrah
9.	Aban supermarket	Al-Rawabi District	abdallah ghosheh
10.	Mykonos supermarket	Al-Rawabi District	abdallah ghosheh
11.	Karam supermarket	Al-Rawabi District	mamdouh al sarayrah
12.	Anas supermarket	Al-Rawabi District	al anees
13.	Mohammad al tamam supermarket	Al-Rawabi District	shuhada al haram al ibrahimi
14.	Omar rummaneh supermarket	Al-Rawabi District	mohamad ali al jabari
15.	Al rabeta supermarket	Al-Rawabi District	mamdouh al sarayrah
16.	Hammoudeh supermarket	Al-Rawabi District	Al bara' bin azeb
17.	O&O supermarket	Al-Rawabi District	ibrahem al qattan
18.	K&A supermarket	Al-Rawabi District	ibrahim al ba'ouni
19.	Quick stop supermarket	Al-Rawabi District	princess tharwat al hasan
20.	Al halteh supermarket	Al-Rawabi District	abdallah ghosheh
21.	Mahbobet zayed supermarket	Al-Rawabi District	abd al rahim jaradneh
22.	Rashed abu tawileh supermarket	Al-Rawabi District	mamdouh al sarayrah
23.	Khalek bl bait supermarket	Al-Rawabi District	princess tharwat al hasan
24.	Mini market	Al-Rawabi District	kareem al zyood
25.	Kunzite	Al-Rawabi District	hasan al attar
27.	26. Samih haddadin grocery	Al-Rawabi District	shuhada al haram al ibrahimi
28.	Zait & zatar super stores	Al-Rawabi District	mecca al mukarramah
29.	Naser supermarket	Al-Rawabi District	al madinah al mukarramah
30.	Happy Smile Stores	Al-Rawabi District	abdallah ghosheh
31.	Oskar market	Al-Rawabi District	al bader
32.	Lumi market	Al-Rawabi District	abdallah ghosheh
33.	VIP supermarket	Al-Rawabi District	abdallah ghosheh
34.	Nofal foodstuff	Al-Rawabi District	ibrahem al qattan
35.	Al neimat grocery	Al-Rawabi District	shuhada al haram al ibrahimi
36.	Zero-point supermarket	Al-Rawabi District	Al dardar
37.	Bonjour	Al-Rawabi District	abdallah ghosheh
38.	Majdi yaseen greocery	Al-Rawabi District	Suliman AlKhalili
39.	Shop smart	Al-Rawabi District	Zahran
40.	Al bash mini market	Al-Rawabi District	ibrahem al qattan
41.	Jaara & sakkijha	Al-Rawabi District	mamdouh al sarayrah
42.	Arizona grocery	Al-Rawabi District	suwaybet ben harmallah
43.	Shopping station	Al-Rawabi District	ibrahem al qattan
44.	Shadi.k supermarket	Al-Rawabi District	mamdouh al sarayrah
45.	Al baraq Supermarket	Al-Rawabi District	Barakat al zuobi

Appendix (6): Number of Retail Stores, Distributed, Returned and Valid Questionnaires.

No.	Retailer Name	Location	Distributed	Returned	Invalid	Valid
1	Hani supermarket	Al-Rawabi	13	9	0	9
2	Aban supermarket	Al-Rawabi	15	13	2	11
3	Anas supermarket	Al-Rawabi	11	10	0	10
4	O&O supermarket	Al-Rawabi	15	13	0	13
5	Naser supermarket	Al-Rawabi	14	14	0	14
6	Happy Smile Stores	Al-Rawabi	16	7	0	7
7	Zait & zatar super stores	Al-Rawabi	19	12	2	10
8	Naser supermarket	Al-Rawabi	12	10	3	9
9	Al halteh supermarket	Al-Rawabi	7	7	1	6
10	Rafedain supermarket	Al-Rawabi	15	15	3	12
11	Kunzite	Al-Rawabi	15	9	0	9
12	Oskar market	Al-Rawabi	29	21	3	18
13	Arizona grocery	Al-Rawabi	12	9	0	9
14	Nofal foodstuff	Al-Rawabi	16	8	1	7
15	Al neimat grocery	Al-Rawabi	13	11	1	10
16	VIP supermarket	Al-Rawabi	18	16	0	16
17	Samih haddadin grocery	Al-Rawabi	14	7	0	7
18	Bonjour	Al-Rawabi	16	9	0	9
19	1Lumi market	Al-Rawabi	15	13	1	12
20	Shopping station	Al-Rawabi	15	14	2	12
	Total		300	227	17	**210**

Appendix (7): Original Data Analysis Report:

Frequency Table

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	151	71.9	71.9	71.9
	female	59	28.1	28.1	100.0
	Total	210	100.0	100.0	

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	24	11.4	11.4	11.4
	25-35	117	55.7	55.7	67.1
	35-45	44	21.0	21.0	88.1
	45 or more than	25	11.9	11.9	100.0
	Total	210	100.0	100.0	

Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	diploma	92	43.8	43.8	43.8
	bsc	108	51.4	51.4	95.2
	master	8	3.8	3.8	99.0
	dectora	2	1.0	1.0	100.0
	Total	210	100.0	100.0	

Social Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	married	113	53.8	53.8	53.8
	single	97	46.2	46.2	100.0
	Total	210	100.0	100.0	

No. of Family Members

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	20	9.5	9.5	9.5
	3	43	20.5	20.5	30.0
	4	62	29.5	29.5	59.5
	5 or more than	85	40.5	40.5	100.0
	Total	210	100.0	100.0	

Income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less of 500	75	35.7	35.7	35.7
	500-750	74	35.2	35.2	71.0
	750-1000	39	18.6	18.6	89.5
	more than 1000	19	9.0	9.0	98.6
	5	3	1.4	1.4	100.0
	Total	210	100.0	100.0	

Reliability

/VARIABLES=Use1 Use2 Use3 Use4 Use5

Reliability Statistics

Cronbach's Alpha	N of Items
.787	5

/VARIABLES=Ava1 Ava2 Ava3 Ava4 Ava5

Reliability Statistics

Cronbach's Alpha	N of Items
.712	5

/VARIABLES=Inf1 Inf2 Inf3 Inf4 Inf5

Reliability Statistics

Cronbach's Alpha	N of Items
.797	5

/VARIABLES=Sec1 Sec2 Sec3 Sec4 Sec5

Reliability Statistics

Cronbach's Alpha	N of Items
.821	5

/VARIABLES=Pri1 Pri2 Pri3 Pri4 Pri5

Reliability Statistics

Cronbach's Alpha	N of Items
.805	5

/VARIABLES=Eas1 Eas2 Eas3 Eas4 Eas5

Reliability Statistics

Cronbach's Alpha	N of Items
.831	5

/VARIABLES=Ful1 Ful2 Ful3 Ful4 Ful5

Reliability Statistics

Cronbach's Alpha	N of Items
.777	5

/VARIABLES=Res1 Res2 Res3 Res4 Res5

Reliability Statistics

Cronbach's Alpha	N of Items
.757	5

/VARIABLES=Rel1 Rel2 Rel3 Rel4 Rel5

Reliability Statistics

Cronbach's Alpha	N of Items
.784	5

/VARIABLES=Eff1 Eff2 Eff3 Eff4 Eff5

Reliability Statistics

Cronbach's Alpha	N of Items
.789	5

/VARIABLES=Use Ava Inf Sec Pri

Reliability Statistics

Cronbach's Alpha	N of Items
.829	5

/VARIABLES=Eas Ful Res Rel Eff

Reliability Statistics

Cronbach's Alpha	N of Items
.887	5

Factor Analysis

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.795
Bartlett's Test of Sphericity	Approx. Chi-Square	293.036
	df	10
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.726	54.529	54.529	2.726	54.529	54.529
2	.840	16.803	71.332			
3	.535	10.705	82.037			
4	.515	10.297	92.335			
5	.383	7.665	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
Use1	.637
Use2	.763
Use3	.822
Use4	.780
Use5	.674

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.783
Bartlett's Test of Sphericity	Approx. Chi-Square	167.297
	df	10
	Sig.	.000

Communalities

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.333	46.656	46.656	2.333	46.656	46.656
2	.820	16.390	63.046			
3	.658	13.157	76.203			
4	.611	12.227	88.430			
5	.578	11.570	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
Ava1	.577
Ava2	.706
Ava3	.701
Ava4	.734
Ava5	.687

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.828
Bartlett's Test of Sphericity	Approx. Chi-Square	281.241
	df	10
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.765	55.300	55.300	2.765	55.300	55.300
2	.712	14.245	69.545			
3	.541	10.818	80.363			
4	.514	10.279	90.642			
5	.468	9.358	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
Inf1	.764
Inf2	.727
Inf3	.783
Inf4	.759
Inf5	.680

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.815
Bartlett's Test of Sphericity	Approx. Chi-Square	355.200
	df	10
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.939	58.771	58.771	2.939	58.771	58.771
2	.768	15.367	74.138			
3	.481	9.618	83.756			
4	.411	8.214	91.970			
5	.401	8.030	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
Sec1	.745
Sec2	.758
Sec3	.816
Sec4	.733
Sec5	.778

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.793
Bartlett's Test of Sphericity	Approx. Chi-Square	329.425
	df	10
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.836	56.714	56.714	2.836	56.714	56.714
2	.767	15.334	72.048			
3	.623	12.452	84.500			
4	.405	8.093	92.594			
5	.370	7.406	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
Pri1	.705
Pri2	.662
Pri3	.829
Pri4	.770
Pri5	.788

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.838
Bartlett's Test of Sphericity	Approx. Chi-Square	363.826
	df	10
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.007	60.135	60.135	3.007	60.135	60.135
2	.661	13.226	73.361			
3	.497	9.934	83.294			
4	.441	8.819	92.113			
5	.394	7.887	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
Eas1	.789
Eas2	.807
Eas3	.751
Eas4	.770
Eas5	.759

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.763
Bartlett's Test of Sphericity	Approx. Chi-Square	286.757
	df	10
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.672	53.443	53.443	2.672	53.443	53.443
2	.856	17.130	70.573			
3	.587	11.746	82.318			
4	.541	10.824	93.143			
5	.343	6.857	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
Ful1	.766
Ful2	.811
Ful3	.746
Ful4	.606
Ful5	.710

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.705
Bartlett's Test of Sphericity	Approx. Chi-Square	298.686
	df	10
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.549	50.989	50.989	2.549	50.989	50.989
2	1.138	22.761	73.751	1.138	22.761	73.751
3	.510	10.193	83.943			
4	.445	8.907	92.850			
5	.357	7.150	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component	
	1	2
Res1	.624	.657
Res2	.718	.523
Res3	.771	-.256-
Res4	.764	-.298-
Res5	.683	-.527-

Extraction Method: Principal Component Analysis.
a. 2 components extracted.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.795
Bartlett's Test of Sphericity	Approx. Chi-Square	284.788
	df	10
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.714	54.273	54.273	2.714	54.273	54.273
2	.830	16.597	70.871			
3	.572	11.448	82.319			
4	.449	8.987	91.306			
5	.435	8.694	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
Rel1	.722
Rel2	.791
Rel3	.787
Rel4	.628
Rel5	.743

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.814
Bartlett's Test of Sphericity	Approx. Chi-Square	269.704
	df	10
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.714	54.275	54.275	2.714	54.275	54.275
2	.709	14.175	68.451			
3	.629	12.576	81.027			
4	.506	10.126	91.153			
5	.442	8.847	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
Eff1	.715
Eff2	.675
Eff3	.738
Eff4	.793
Eff5	.756

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.827
Bartlett's Test of Sphericity	Approx. Chi-Square	382.151
	df	10
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.999	59.971	59.971	2.999	59.971	59.971
2	.691	13.827	73.798			
3	.597	11.938	85.735			
4	.370	7.398	93.134			
5	.343	6.866	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
Use	.697
Ava	.815
Inf	.837
Sec	.828
Pri	.679

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.851
Bartlett's Test of Sphericity	Approx. Chi-Square	564.917
	df	10
	Sig.	.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.451	69.021	69.021	3.451	69.021	69.021
2	.555	11.093	80.114			
3	.431	8.621	88.735			
4	.308	6.167	94.902			
5	.255	5.098	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
Eas	.819
Ful	.870
Res	.844
Rel	.808
Eff	.811

Extraction Method: Principal Component Analysis.
a. 1 components extracted.

T-Test

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Usability	210	4.1114	.71749	.04951
Availability	210	3.7886	.67453	.04655
Information	210	3.9819	.72854	.05027
Security	210	3.8057	.83967	.05794
Privacy	210	3.9267	.75733	.05226
Mobile Phone Application	210	3.9229	.57459	.03965
Ease of Use	210	4.0286	.71374	.04925
Fulfillment	210	3.9743	.68470	.04725
Responsiveness	210	3.7610	.73113	.05045
Reliability	210	3.7286	.71915	.04963
Effectiveness	210	3.9590	.68925	.04756
E-Service Quality	210	3.8903	.58757	.04055

One-Sample Test

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Usability	22.448	209	.000	1.11143	1.0138	1.2090
Availability	16.941	209	.000	.78857	.6968	.8803
Information	19.531	209	.000	.98190	.8828	1.0810
Security	13.905	209	.000	.80571	.6915	.9199
Privacy	17.732	209	.000	.92667	.8236	1.0297
Mobile Phone Application	23.275	209	.000	.92286	.8447	1.0010
Ease of Use	20.884	209	.000	1.02857	.9315	1.1257
Fulfillment	20.620	209	.000	.97429	.8811	1.0674
Responsiveness	15.083	209	.000	.76095	.6615	.8604
Reliability	14.681	209	.000	.72857	.6307	.8264
Effectiveness	20.164	209	.000	.95905	.8653	1.0528
E-Service Quality	21.957	209	.000	.89029	.8104	.9702

T-Test

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
The mobile application interface provides enjoyment while use it.	211	4.07	.976	.067
The mobile application simple enough to learn.	211	3.96	1.050	.072
The mobile application includes easily accessibility.	207	4.22	.955	.066
The mobile application provides fast services.	211	4.27	.924	.064
The mobile application meets user needs.	211	4.06	.959	.066
Usability	210	4.1114	.71749	.04951
The mobile application constantly available to use	211	4.09	.946	.065
The mobile application available to correct mistakes anytime.	210	3.70	1.050	.072
The mobile application provides responses to requests.	210	3.72	.988	.068
The mobile application runs in fast time.	211	3.96	.927	.064

The mobile application runs without errors.	209	3.51	1.024	.071
Availability	210	3.7886	.67453	.04655
The mobile application provides complete information.	210	3.96	1.035	.071
The mobile application includes accurate information.	211	4.02	.963	.066
The mobile application contains updated information	210	4.07	.976	.067
The mobile application provides clear information.	209	3.94	.931	.064
The mobile application present useful information on time.	208	3.97	.995	.069
Information	210	3.9819	.72854	.05027
The mobile application is secure to use.	209	3.58	1.242	.086
The mobile application includes secure password.	211	3.98	1.023	.070
The mobile application secures payments.	210	3.91	1.043	.072
The mobile application security terms available to review.	211	3.96	1.004	.069
The mobile application protects data from theft.	210	3.64	1.175	.081
Security	210	3.8057	.83967	.05794
The mobile application gets permission to use personal information.	211	3.99	1.073	.074
The mobile application preserves the personal data.	210	4.00	.986	.068
The mobile application protects location information.	211	3.87	.977	.067
The mobile application protects information from exposing.	209	3.87	1.052	.073
The mobile application protects personal messages	210	3.96	.960	.066
Privacy	210	3.9267	.75733	.05226
The user understands mobile application easily.	211	3.91	1.059	.073
The mobile application provides friendly interface.	209	4.02	.805	.056
The user finds mobile application accessible easily	211	4.09	.916	.063
The user finds his interests on the application easily.	209	4.07	.899	.062
The user interacts with mobile application easily.	209	4.09	.918	.063
Ease of Use	210	4.0286	.71374	.04925
The user gets smooth transactions on mobile application.	210	3.95	1.011	.070
The user finds his needs on mobile application.	211	3.95	.932	.064
The mobile application meets user expectation.	210	3.84	.901	.062
The mobile application gives individual attention.	211	3.90	.999	.069
The user interacts with mobile application anytime.	211	4.26	.858	.059
Fulfillment	210	3.9743	.68470	.04725

The mobile application gives prompt service.	210	4.17	.946	.065
The mobile application provides fast response.	211	4.06	.942	.065
The mobile application solves user complaints immediately.	209	3.41	1.102	.076
The mobile application deal with user requests immediately.	208	3.78	1.031	.071
The mobile application solves errors immediately.	206	3.45	1.124	.078
Responsiveness	210	3.7610	.73113	.05045
The mobile application provides the correct service from the first time.	210	3.51	1.090	.075
The mobile application delivers the expected service.	211	3.75	.949	.065
The mobile application provides service on time.	211	3.87	.893	.061
The mobile application includes consistent services.	211	3.88	.889	.061
The user complete purchases through mobile application without errors.	211	3.69	1.081	.074
Reliability	210	3.7286	.71915	.04963
The user achieves his goals when using mobile application.	211	4.09	.926	.064
The user transaction can be completed accurately on mobile application.	210	3.91	.828	.057
The user finds mobile application do the tasks as requested.	211	4.04	.883	.061
The mobile application complete purchases accurately.	210	3.74	1.032	.071
The user finds mobile application easy to navigate	211	4.09	.996	.069
Effectiveness	210	3.9590	.68925	.04756

One-Sample Test

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
The mobile application interface provides enjoyment while use it.	15.945	210	.000	1.071	.94	1.20
The mobile application simple enough to learn.	13.305	210	.000	.962	.82	1.10
The mobile application includes easily accessibility.	18.418	206	.000	1.222	1.09	1.35
The mobile application provides fast services.	19.902	210	.000	1.265	1.14	1.39
The mobile application meets user needs.	16.001	210	.000	1.057	.93	1.19
Usability	22.448	209	.000	1.11143	1.0138	1.2090
The mobile application constantly available to use	16.803	210	.000	1.095	.97	1.22

The mobile application available to correct mistakes anytime.	9.594	209	.000	.695	.55	.84
The mobile application provides responses to requests.	10.617	209	.000	.724	.59	.86
The mobile application runs in fast time.	14.995	210	.000	.957	.83	1.08
The mobile application runs without errors.	7.226	208	.000	.512	.37	.65
Availability	16.941	209	.000	.78857	.6968	.8803
The mobile application provides complete information.	13.474	209	.000	.962	.82	1.10
The mobile application includes accurate information.	15.436	210	.000	1.024	.89	1.15
The mobile application contains updated information	15.838	209	.000	1.067	.93	1.20
The mobile application provides clear information.	14.566	208	.000	.938	.81	1.06
The mobile application present useful information on time.	14.013	207	.000	.966	.83	1.10
Information	19.531	209	.000	.98190	.8828	1.0810
The mobile application is secure to use.	6.738	208	.000	.579	.41	.75
The mobile application includes secure password.	13.925	210	.000	.981	.84	1.12
The mobile application secures payments.	12.639	209	.000	.910	.77	1.05
The mobile application security terms available to review.	13.919	210	.000	.962	.83	1.10
The mobile application protects data from theft.	7.870	209	.000	.638	.48	.80
Security	13.905	209	.000	.80571	.6915	.9199
The mobile application gets permission to use personal information.	13.404	210	.000	.991	.84	1.14
The mobile application preserves the personal data.	14.634	209	.000	.995	.86	1.13
The mobile application protects location information.	12.900	210	.000	.867	.73	1.00
The mobile application protects information from exposing.	11.900	208	.000	.866	.72	1.01
The mobile application protects personal messages	14.448	209	.000	.957	.83	1.09
Privacy	17.732	209	.000	.92667	.8236	1.0297
The user understands mobile application easily.	12.487	210	.000	.910	.77	1.05

The mobile application provides friendly interface.	18.382	208	.000	1.024	.91	1.13
The user finds mobile application accessible easily	17.366	210	.000	1.095	.97	1.22
The user finds his interests on the application easily.	17.245	208	.000	1.072	.95	1.19
The user interacts with mobile application easily.	17.181	208	.000	1.091	.97	1.22
Ease of Use	20.884	209	.000	1.02857	.9315	1.1257
The user gets smooth transactions on mobile application.	13.654	209	.000	.952	.81	1.09
The user finds his needs on mobile application.	14.773	210	.000	.948	.82	1.07
The mobile application meets user expectation.	13.550	209	.000	.843	.72	.97
The mobile application gives individual attention.	13.020	210	.000	.896	.76	1.03
The user interacts with mobile application anytime.	21.338	210	.000	1.261	1.14	1.38
Fulfillment	20.620	209	.000	.97429	.8811	1.0674
The mobile application gives prompt service.	17.866	209	.000	1.167	1.04	1.30
The mobile application provides fast response.	16.377	210	.000	1.062	.93	1.19
The mobile application solves user complaints immediately.	5.337	208	.000	.407	.26	.56
The mobile application deal with user requests immediately.	10.900	207	.000	.779	.64	.92
The mobile application solves errors immediately.	5.765	205	.000	.451	.30	.61
Responsiveness	15.083	209	.000	.76095	.6615	.8604
The mobile application provides the correct service from the first time.	6.772	209	.000	.510	.36	.66
The mobile application delivers the expected service.	11.532	210	.000	.754	.62	.88
The mobile application provides service on time.	14.181	210	.000	.872	.75	.99
The mobile application includes consistent services.	14.401	210	.000	.882	.76	1.00
The user complete purchases through mobile application without errors.	9.235	210	.000	.687	.54	.83
Reliability	14.681	209	.000	.72857	.6307	.8264

The user achieves his goals when using mobile application.	17.172	210	.000	1.095	.97	1.22
The user transaction can be completed accurately on mobile application.	15.919	209	.000	.910	.80	1.02
The user finds mobile application do the tasks as requested.	17.076	210	.000	1.038	.92	1.16
The mobile application complete purchases accurately.	10.364	209	.000	.738	.60	.88
The user finds mobile application easy to navigate	15.823	210	.000	1.085	.95	1.22
Effectiveness	20.164	209	.000	.95905	.8653	1.0528

Correlations

Correlations

		Use	Ava	Inf	Sec	Pri	Mob App	Eas	Ful	Res	Rel	Eff	ESQ
Use	Pearson Correlation	1	.493**	.489**	.411**	.356**	.703**	.483**	.552**	.374**	.322**	.452**	.524**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	210	210	210	210	210	210	210	210	210	210	210	210
Ava	Pearson Correlation	.493**	1	.628**	.613**	.372**	.794**	.470**	.534**	.598**	.483**	.496**	.622**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	210	210	210	210	210	210	210	210	210	210	210	210
Inf	Pearson Correlation	.489**	.628**	1	.620**	.453**	.824**	.610**	.670**	.564**	.486**	.502**	.681**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	210	210	210	210	210	210	210	210	210	210	210	210
Sec	Pearson Correlation	.411**	.613**	.620**	1	.515**	.832**	.458**	.536**	.572**	.463**	.495**	.608**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000
	N	210	210	210	210	210	210	210	210	210	210	210	210
Pri	Pearson Correlation	.356**	.372**	.453**	.515**	1	.705**	.424**	.457**	.419**	.400**	.408**	.507**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000
	N	210	210	210	210	210	210	210	210	210	210	210	210
Mob App	Pearson Correlation	.703**	.794**	.824**	.832**	.705**	1	.631**	.710**	.654**	.558**	.609**	.761**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000
	N	210	210	210	210	210	210	210	210	210	210	210	210
Eas	Pearson Correlation	.483**	.470**	.610**	.458**	.424**	.631**	1	.728**	.603**	.513**	.557**	.819**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000
	N	210	210	210	210	210	210	210	210	210	210	210	210
Ful	Pearson Correlation	.552**	.534**	.670**	.536**	.457**	.710**	.728**	1	.666**	.575**	.628**	.864**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000
	N	210	210	210	210	210	210	210	210	210	210	210	210
Res	Pearson Correlation	.374**	.598**	.564**	.572**	.419**	.654**	.603**	.666**	1	.658**	.574**	.846**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000
	N	210	210	210	210	210	210	210	210	210	210	210	210
Rel	Pearson Correlation	.322**	.483**	.486**	.463**	.400**	.558**	.513**	.575**	.658**	1	.621**	.813**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000
	N	210	210	210	210	210	210	210	210	210	210	210	210
Eff	Pearson Correlation	.452**	.496**	.502**	.495**	.408**	.609**	.557**	.628**	.574**	.621**	1	.811**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000
	N	210	210	210	210	210	210	210	210	210	210	210	210

ESQ	Pearson Correlation	.524**	.622**	.681**	.608**	.507**	.761**	.819**	.864**	.846**	.813**	.811**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	N	210	210	210	210	210	210	210	210	210	210	210	210

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

Regression

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.768[a]	.590	.580	.38066	1.877

a. Predictors: (Constant), Pri, Use, Ava, Sec, Inf
b. Dependent Variable: ESQ

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.593	5	8.519	58.787	.000[b]
	Residual	29.561	204	.145		
	Total	72.154	209			

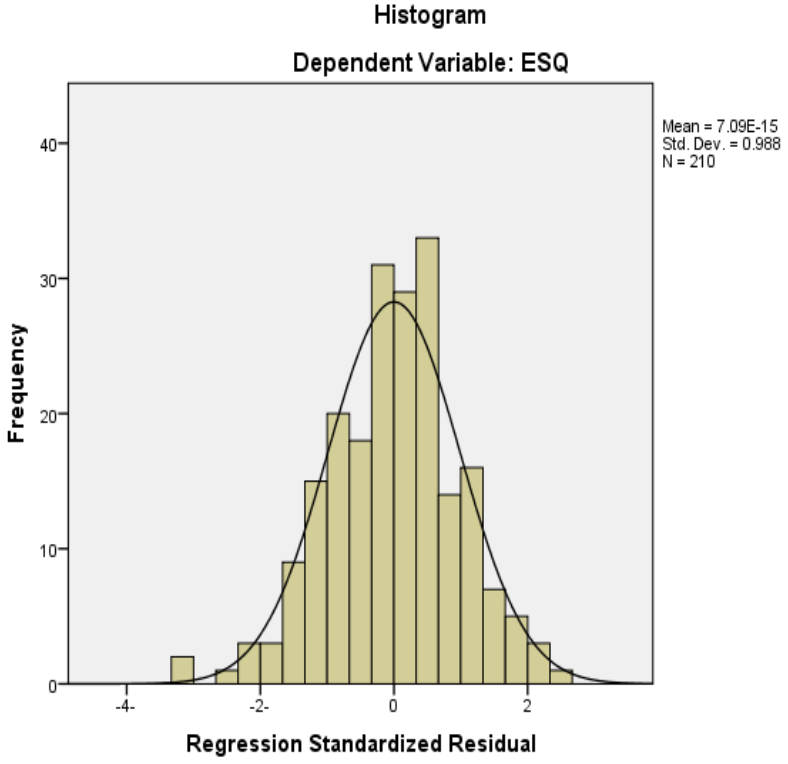
a. Dependent Variable: ESQ
b. Predictors: (Constant), Pri, Use, Ava, Sec, Inf

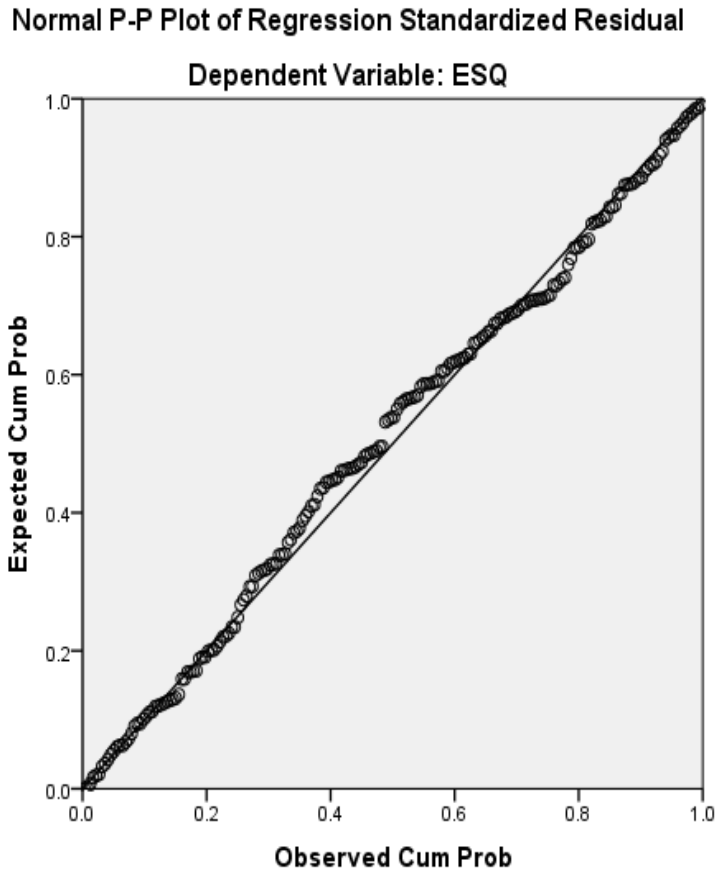
Coefficients[a]

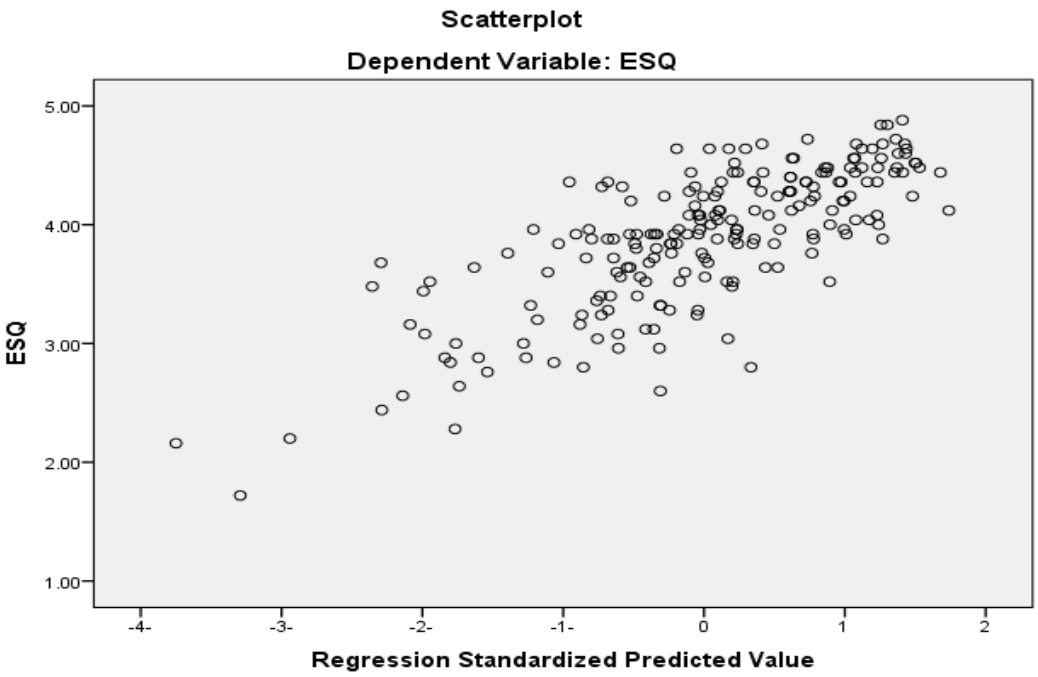
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.821	.191		4.304	.000		
	Use	.126	.044	.154	2.859	.005	.689	1.451
	Ava	.172	.055	.198	3.106	.002	.495	2.019
	Inf	.259	.052	.321	4.971	.000	.481	2.081
	Sec	.099	.045	.142	2.193	.029	.481	2.078
	Pri	.124	.042	.160	2.977	.003	.694	1.442

a. Dependent Variable: ESQ

Charts




Normal P-P Plot of Regression Standardized Residual
Dependent Variable: ESQ
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Scatterplot
Dependent Variable: ESQ
ESQ
Regression Standardized Predicted Value
1.00
2.00
3.00
4.00
5.00
-4-
-3-
-2-
-1-
0
1
2

Regression

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.772[a]	.596	.586	.36971

a. Predictors: (Constant), Effectiveness, Ease of Use, Reliability, Responsiveness, Fulfullment

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	41.118	5	8.224	60.164	.000[b]
	Residual	27.884	204	.137		
	Total	69.001	209			

a. Dependent Variable: Mobile Phone Application

b. Predictors: (Constant), Effectiveness, Ease of Use, Reliability, Responsiveness, Fulfullment

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.021	.173		5.896	.000
	Ease of Use	.114	.054	.142	2.111	.036
	Fulfullment	.272	.063	.324	4.349	.000
	Responsiveness	.178	.054	.227	3.330	.001
	Reliability	.035	.052	.044	.683	.496
	Effectiveness	.141	.053	.169	2.664	.008

a. Dependent Variable: Mobile Phone Application