AN ADOPTION MODEL TO ASSESS E-SERVICE TECHNOLOGY ACCEPTANCE

HAMED TAHERDUST MOHAMMADI

A thesis submitted in fulfilment of the
requirements for the award of the degree of
Doctor of Philosophy (Computer Science)

Faculty of Computing
Universiti Teknologi Malaysia

JANUARY 2017

This thesis is dedicated to my beloved mother and father

ACKNOWLEDGEMENT

First and foremost, I would like to thank and pray to God for blessing my postgraduate study and giving me strength and courage.

I would like to express my deepest regards and blessing to my family for their unflagging love and unconditional support throughout my life and my study. You made me live the most unique, magic and carefree that has made me who I am now.

Furthermore, I would like to express my gratitude and convey my thanks to my supervisor, Prof. Dr. Shamsul Sahibuddin, for his supervision, advice, and guidance from the early stage of this research until the completion of the research. Besides my advisor, I would like to thank the rest of my thesis committee: Prof. Madya Dr. Harihodin bin Selamat, Prof. Dr. Rusli bin Abdullah, and Prof. Dr. Azizah binti Abdul Manaf, for their insightful comments and encouragement, but also for the hard questions which incented me to widen my research from various perspectives.

Furthermore, I would never forget all the chats and beautiful moments I shared with some of my friends. A heartfelt thanks goes out to all of them who provided support, inspiration, mentoring, peer pressure, and motivation along the way.

Lastly, I would like to express my special thanks to University Technology Malaysia for providing a beautiful, peaceful, and calm academic environment for research and study.

Hamed Taherdust Mohammadi

ABSTRACT

As the world today is witnessing the remarkable growth of information and communication technology development and the Internet popularity, the widespread use of the electronic service (e-service) is becoming inevitable. Many e-service projects have been developed but since they are not used by users, they cannot help to improve organizational performance. As the user adoption of an e-service is an essential key for a successful and an effective implementation of any e-service project, there is a need to access the user acceptance of the system. This research developed the E-Service Technology Acceptance Model (ETAM) to assess the user acceptance of an e-service technology. According to the literature review in the field of e-service technology and the acceptance theories, this research identified the main factors influencing the acceptance of e-services, namely; satisfaction and quality where the dimensions of these factors were extracted from the previous studies. In order to categorise the dimensions, an exploratory survey was developed and conducted among the university students and then, the Exploratory Factor Analysis was applied using the SPSS Software. Then, a confirmatory survey was designed and tested to test the validity (content and construct) and the reliability of the instrument, before it was used to evaluate the ETAM. The survey was conducted among the e-service users in Malaysia and 426 questionnaires were collected. Finally, the Structural Equation Modelling using Lisrel was applied to validate the casual relations between the constructs and to assess the goodness-of-fit for the ETAM. The result of this study revealed that quality, security and satisfaction significantly influenced the intention to use an e-service and consequently the acceptance of the e-service technology. The ETAM model developed in this study can be used as a foundation for e-service providers to develop strategies to encourage people to use e-service and to increase the usage and the acceptance of e-services in Malaysia. Moreover, the ETAM which explains 71.8% of variance can help to evaluate and predict how users will respond to an e-service before starting to develop an e-service project. This model can also be applied it to improve the provided e-service to increase the usage rate.

ABSTRAK

Semasa dunia hari ini menyaksikan perkembangan maklumat dan pembangunan teknologi komunikasi yang menakjubkan dan popularitи internet, penggunaan perkhidmatan elektronik (e-perkhidmatan) yang meluas tidak dapat dielakkan. Terdapat banyak projek e-perkhidmatan yang telah dibangunkan tetapi kerana kebanyakannya tidak digunakan oleh pengguna, teknologi ini tidak dapat membantu untuk memperbaiki prestasi organisasi. Sebagaimana penerimaan pengguna pada e-perkhidmatan adalah kunci utama bagi pelaksanaan yang berjaya dan efektif untuk sebarang projek e-perkhidmatan, terdapat keperluan untuk menilai penerimaan pengguna pada e-perkhidmatan. Kajian ini membangunkan model Penerimaan Teknologi E-perkhidmatan (ETAM) untuk menilai penerimaan pengguna terhadap teknologi e-perkhidmatan. Berdasarkan ulasan literatur di dalam bidang teknologi e-perkhidmatan dan teori peneriman, kajian ini mengenalpasti faktor yang mempengaruhi penerimaan terhadap e-perkhidmatan, iaitu kepuasan dan keselamatan di mana dimensi dari faktor ini telah diekstrak dari kajian terdahulu. Bagi mengkategorikan dimensi itu, satu kaji selidik penerangan telah dibangunkan dan dijalankan di kalangan pelajar universiti dan kemudian, Analisis Faktor Penerangan telah digunapakai dengan menggunakan perisian SPSS. Kemudian, satu kaji selidik pengesahan telah direka bentuk dan diuji untuk menguji kesahihan (kandungan dan pembinaan) dan kebolehpercayaan instrumen, sebelum ia boleh digunakan untuk menilai ETAM. Kaji selidik ini telah dijalankan di kalangan pengguna e-perkhidmatan di Malaysia dan sebanyak 426 soal selidik telah dikumpulkan. Akhir sekali, Model Persamaan Struktur menggunakan Lisrel telah diaplikasikan untuk mengesahkan hubungan kesan antara konstruk dan untuk menilai kebagusan penyuaian untuk ETAM. Hasil kajian ini menunjukkan bahawa kualiti, keselamatan dan kepuasan mempengaruhi tujuan penggunaan e-perkhidmatan dan seterusnya penerimaan teknologi e-perkhidmatan. Model ETAM yang dibangunkan dalam kajian ini boleh digunakan sebagai asas kepada penyedia e-perkhidmatan untuk membangunkan strategi bagi menggalakkan orang ramai menggunakan e-perkhidmatan dan meningkatkan kadar penggunaan dan penerimaan e-perkhidmatan di Malaysia. Tambahan pula, model ETAM yang menerangkan 71.8% daripada varians boleh membantu untuk menilai dan meramal bagaimana pengguna akan bertindak balas terhadap e-perkhidmatan sebelum memulakan pembangunan projek e-perkhidmatan. Model ini juga boleh digunakan untuk meningkatkan e-perkhidmatan yang sedia untuk meningkatkan kadar penggunaan.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ADP	-	Adoption
AGFI	-	Adjusted Goodness of Fit Index
ATM	-	Automated Teller Machine
CFA	-	Confirmatory Factor Analysis
CFI	-	Comparative Fit Index
CONT	-	Content
C-UTAUT	-	Compatibility UTAUT
DF	-	Degrees of Freedom
DOI	-	Diffusion of Innovations Theory
EFA	-	Exploratory Factor Analysis
eP	-	Electronic Procurement
E-Service	-	Electronic Service
ETAM	-	E-Service Technology Acceptance Model
EXPC	-	Expectation
FRIEND	-	User Friendliness
GFI	-	Goodness-of-Fit Index
GOE	-	Generic Office Environment
GOF	-	Goodness-of-Fit
HRMIS	-	Human Resource Management Information System
ICT	-	Information and Communication Technology
IM	-	Igbaria's Model
INT	-	Intention to Use
INTER	-	Interaction
IS	-	Information System
IT	-	Information Technology
IVR	-	Interactive Voice Response
KMO	-	Kaiser-Meyer-Olkin

LISREL	-	Linear Structural Relationship Analysis
MCDM	-	Multiple Criteria Decision Making
MM	-	Motivational Model
MPCI	-	The Model of PC Utilization
NFI	-	Normed Fit Index
PCA	-	Principal Component Analysis
PERF	-	Performance
PMS	-	Project Monitoring System
QUAL	-	Quality
SAT	-	Satisfaction
SCT	-	Social Cognitive Theory
SEC	-	Security
SEM	-	Structural Equation Modeling
SPSS	-	Statistical Package for the Social Sciences
SRMR	-	Standardized Root Mean Square Residual
STS	-	Tax-Self Assessment System
SUPPT	-	Support
TAM	-	Technology Acceptance Model
TIB	-	Theory of Interpersonal Behaviour
TIB	-	Theory of Interpersonal Behaviour
TPB	-	Theory of Planned Behaviour
TRA	-	Theory of Reasoned Action
TRAIN	-	Training
UGT	-	Uses and Gratification Theory
USAB	-	Usability
UTAUT	-	Unified Theory of Acceptance and Use of Technology

LIST OF APPENDICES

CHAPTER 1

INTRODUCTION

At the beginning chapter, a brief introduction and an insight to this research area are given. This begins by discussing the fast growth of information technology and the necessity of movement from traditional services to electronic services. Then, the background of the problem, problem statement, objectives, scope and significant of the study are described respectively. In this study, acceptance and adoption terms are used interchangeably.

1.1 Introduction

As time went by, fast growth of information technology is made manifest its significance in last decades (Cronan and Al-Rafee, 2008). Therefore, breakthrough revolutionary methods have been developed with the aim of accomplishing online business activities due to the expansion and advancement of Internet , software industry and digital technologies (Cronan and Al-Rafee, 2008; Holsapple et al., 2008). The fact of the matter is that emerging advances in the Internet spheres pave the way for some businesses as they can transform their products into information services, thereby, the personalization and shipping procedures encompassing logistic costs and delays would be optimized, relatively. Since web technologies have been emerging, lots of opportunities have been exposed to businesses. Accordingly, the businesses are intended to create potential values via providing customers/end-user with additional services, in consequence, these businesses have altered to a service-based company rather than being a product-based company (Luo et al., 2011). In regard with this

revolutionary breakthrough advancement, many of traditional services have been embracing the electronic environment, substantially.

The concept of e-service plays an important role to provide a superior experience considering the interactive flow of information (Rust and Lemon, 2001). Indeed, through expanding the range of options, consumers convenience and comfort may be impressed coupled with this value and consistency of relationship with a prospective corporation would be enhanced (Alsop, 1999). Overwhelming, majority of industry sectors have been influenced by the emergence of e-service, for example, governments, education, transportation, financial services, healthcare, retail, etc.

Recently, businesses have been engaging the Internet as a platform with the aim of delivering services to their both partners and customers (Casati and Shan, 2001). There is empirical evidence that e-service has emerged in the form of websites on the Internet. Furthermore, using online channels comprising, sharing information and performing business interactions automatically with business partners (Torre and Moxon, 2001; Lu and Zhang, 2003). Notwithstanding of the benefits of these innovations, there is a significant concern in regard with the fact that which method is used by customers to do their business activities (Looney et al., 2006). Notably, the major challenge raised, particularly during selling and distributing products is evoking user acceptance toward information service once the digital channels are in place (Luo et al., 2011).

Within the last two decades, information technology usage has provoked a debate in the field of information system (Martins et al., 2014). Literary, successful implementation of information system is tied with the ultimate usage of new developed technology (DeLone and McLean, 1992), however, the final proposed achievements of the system cannot ensure a successful implantation. The shining example in this case, reveals that implemented information technology cannot improve organizational performance if it will not be used in the organization. Notwithstanding benefits of the new developed system, employees are reluctant to apply new developed system, so that, this refuse is known as a critical risk in technology change projects (Markus, 2004). Moreover, this might be seen as a serious barrier for an organization to attain

potential benefits from new implemented system. Therefore, in order to eradicate this issue, users should be encouraged by firms to utilize the system (Bouten, 2008). Researchers have indicated that user adoption of information technology is a crucial condition for both successful and effective implementation of any information technology project (Pinto and Mantel, 1990).

Further development of any new technology and e-service technology are tied with user acceptance and confidence in all. The metaphor "acceptance" has been observed as a function of user participation in systems development and can be defined as "an antagonism to the term refusal and means the positive decision to use an innovation" (Simon, 2001). A number of models, as well as frameworks, have been developed so far in regard with scrutinizing user adoption of new technologies. Moreover, these models contribute to the introduction of factors which can affect the user acceptance per se (McKenna et al., 2013). This research aims at developing an adoption model via combining previous models along with adding new required constructs with the aim of investigating the user acceptance toward e-service technology.

1.2 Background of the Problem

A numerous opportunities are generated from the growth of web-based information services (WIS) globally (Luo et al., 2011). It has been argued that the Internet is not only rapid marketplace growth, also it is obviously a boundless chance for both products and services marketing (Ruyter et al., 2001). IT is utilized as e-service platform (Watson et al., 2002). On the other hand, the Internet has been characterized as a robust medium to offer services and it is known as the second phase of Internet innovation (Evanschitzky, 2007; Ruyter et al., 2001).

Reconfiguration of service value networks is tied with an increasingly growth of Internet, globalization, and automation. As innovation is known as consistent process instinctively, new opportunities are always on the way to not only develop innovative services and researches but also to deliver new information as well as

business services (McKenna et al., 2013). There are numerous e-service applications comprising: e-financial, e-business, e-banking, e-government, e-insurance, e-shopping, e-commerce, and e-education. The applications of e-service contribute to reduce the service cost and consequently provide a situation in which the service can be differentiated and segmented in service contracts.

The emergence of new formulas for the relationship between firms and consumers are tied with Internet's capacity to access, communicate information and organize (Crespo and Bosque, 2010). Assume that you plan to have a trip for your holidays, so after you choose your destination, you need some information about the place (its hotels, attractions, flights and so on). In this case, if you want to use the traditional services, you have to go to the travel agencies to collect the needed information, then go to the airways agencies to get your ticket and booked your hotel in the destination by phone and further, get your rental car when you arrive there. While all these can be done only by some clicks through the web sites. Not only you are able to book your flight tick and reserve your hotel and car but also you can choose your seat on the airplane personally, see the pictures of the rooms and cars to have a better decision. Therefore, you are able to manage your whole journey from your place, 24 hours a day and with your own computer. Thus, compare to the traditional services, e-service can result to the saving time and cost hence it is valuable to switch from traditional services to the e-services and this movement can be happened successfully if the users accept the e-services, so users need to be aware and educated about the e-service characteristics and features.

The e-service usage results in delivering the products and services effectively via transforming and mechanizing the customers' relationship and marketplace. Therefore, the majority of firms are attracted interest in developing and implementing the e-service with the aim of expanding their performance effectiveness and efficiency. There is empirical evidence that the customer behavior itself can be affected significantly by this expansion and evolution (Sharma, 2007).

The e-service benefits can be listed as reducing the cost of any transactions, adjusting the customer desires through moving from location-based activities to non-

locational and non-temporal behaviors and time (Watson et al., 2002). Undeniably, a system can enhance the job performance but sometimes users are not keen on using the systems. It has been highlighted that if people do not use information systems then it cannot be effective (Mathieson, 1991).

Therefore, it is significant to identify the root causes which affect users' decision for using a specific system. Analyzing and scrutinizing the main reasons of people's willingness to accept these technologies are of central importance for both parties including organizations and customers (Martins et al., 2014). E-service providers are playing a crucial role as they must understand the root issues which affect users' decision about using a particular service, thereby, they would be capable of concentration on effective adoption matters into account during both development phase (Mathieson, 1991) and at once after implementation.

Recognition the needs and acceptance of individuals is the beginning stage of any businesses and this understanding would be helpful to find the way of future development, thus academicians are interested to realize the factors that drive users' acceptance or rejection of new technologies. It is the common question of both practitioners and researchers that why people accept new technologies and electronic service as well. Answering this question may help them to better methods for designing, evaluating and predicting the response of the users to the new technologies (Dillon and Morris, 1996). Technology acceptance model is made manifest its role as the basis for understanding consumer behaviour within studies which concerns consumers' adoption of service (McKenna et al., 2013). However, a number of studies which linked consumer behaviour to information systems development are rare and limited (McKenna et al., 2013). In technology adoption research context, the challenges are generated from understanding and scrutinizing consumers' behavior in decision making in order to understand why users adopt or do not adopt certain services or technologies, so that, the risk of rejection and resistance are reduced substantially (Al-Debei and Al-Lozi, 2014). In regard with this, technology adoption from individual vantage point has provoked a significant debate and become a crucial research sphere over two decades (Chuttur, 2009).

In brief, recently, the advancement of Internet offers organizations to preserve their customers by providing them new Web-based services (Martins et al., 2014). Ultimately, learning what drives users to adopt e-services is of central importance within past decade and a half within e-service context (Grellhesl, 2010).

1.3 Statement of the Problem

Adoption of information technology is perceived to be today's worldwide business atmosphere concern due to its dynamic and comprehensive nature (Özer and Yilmaz, 2011). Apart from the increasing emergence of a large number of electronic markets, the development of e-service is still slow (Özer and Yilmaz, 2011).

Recently, advancement of web technologies provide golden opportunities, so that, firms can offer supplementary services to their customers (Hanafizadeh et al., 2014). Accordingly, the user acceptance has been viewed as a prospective challenge of e-services and digital channels (Luo et al., 2011). Therefore, decision makers need to understand what factors encourage users to use e-services in order to be able to move their businesses from the traditional delivery systems to the electronic environments (Alawadhi and Morris, 2008). Complete benefits of the information technology investments are not being comprehended because of the number of reasons (Clegg et al., 1997; McCarroll, 1991) and the lack of information technology acceptance has been recognize as one of the reason (Henderson et al., 1995; Ives and Olson, 1984).

In the 20th century, the information technology explosion that occurred globally has managed to influence and change the lifestyle of the world (Othman et al., 2012). In many developing countries, E-government initiatives are in their infancy stage. In Malaysia, e-services application is among five pilot projects under these initiatives that have been selected by the government to be implemented at the first phase. The success of this application is dependent on government support as well as citizens' adoption of this application. Therefore, it is important to identify the adoption factors of the implementation of e-services in Malaysia (Othman et al., 2012).

According to the Malaysian Public Sector ICT Strategic Plan (2011- 2015), which was launched on 7th July 2011, one of its targets is towards zero face-to-face service delivery, with 90% of all government services are available online by 2015 and 90% of all transactions for online services are available online by 2015 (Nawi et al., 2013). Currently, the government agencies have transformed their operation and services through the use of ICT; however, most of them have difficulties in sustaining the e-services after their successful implementation (Nawi et al., 2013). Therefore, it is important to identify and understand the factors effecting on user decision toward e-service. Nawi et al. (2013) proposed a model to identify the issues and problems regarding the sustainability of e-service projects in Malaysia. Within their model, user resistance to use e-service is one of the problems for Implementers and Service Providers.

Practitioners and academicians have been confronted to both challenges and opportunities provided by e-services (Evanschitzky, 2007). Unquestionably, the productivity and quality of work can be increased by applying information systems; in consequence, its usage deficiency would result in major loss to society and organizations. Therefore, in order to develop a proper method, people's perception toward accepting and rejecting a new technology should be understood (Bouten, 2008).

Currently, many models have been introduced to address both rejection and acceptation of the information system. Many studies have been used various frameworks along with developing new models to carry out their studies such as Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Diffusion of Innovation Theory (DOI), Model of PC Utilization (MPCU), Theory of Planned Behavior (TPB), Motivational Model (MM), Unified Theory of Acceptance and Use of Technology (UTAUT), Theory of Interpersonal Behaviour (TIB), Compatible Unified Theory of Acceptance and Use of Technology (C-UTAUT), and Social Cognitive Theory (SCT). However, amongst all aforementioned models, it has been discussed that traditional acceptance models cannot adequately help academicians and practitioners to have a complete explanation and prediction of factors which influence the users' acceptance of new services (Nysveen et al., 2005).

Users have been vacillated to make transactions applying the Web due to mistrust on the Web environment (Rotchanakitumnuai and Speece, 2004). As articulated by Vassilakis et al. (2005), security and privacy are serious concerns of e-service users and known as the critical barriers of e-service usage (Vassilakis et al., 2005). E-service users are not willing to send their personal information (financial or non-financial) via electronic channels due to the insufficient trust on electronic service provider's ability to control their information safely. More specifically, the security issue is perceived as main concerns which manifest itself in the form of refusing the electronic services. Therefore, security concern will substantially affect the users' intention to use e-services (Shareef et al., 2011). Analysis of previous studies uncovered that in spite of the significance of security concerning explaining and predicating the intention to use e-services, none of the aforementioned models scrutinized its effect on user intention to use.

The odd of success can be enhance through consideration of e-service quality as it can increase attractiveness, customer retention, hit rate, and positive word of mouth, and can take advantage of the online competitive advantages of e-service (Santos, 2003) although research regarding quality of e-service issues is still in immature phase. As long as service quality is an ultimate evaluation of service under certain circumstances, customer satisfaction is considered as the exit point of specific service transaction (Jun et al., 2004). Thereby, it can be asserted that consumer satisfaction is an indicator of company's portfolio considering its past, current and future performance. In regard with scrutinizing the system use, it is essentially required to develop tools for measuring and analysing user satisfaction (Legris et al., 2003). User satisfaction should be recognized as an object-based attitude, however, research in this sphere has the limitation to predict system usage (Wixom and Todd, 2005). The analyses of previous researches reveal that in spite of the significance of both quality and satisfaction dimensions, very little efforts have been assigned to not only identify their dimensions but also examine their potential effects on intention to use. Ultimately, the contribution in this domain is necessitated; therefore, relevant dimensions of quality and satisfaction along with their effects on intention to use e-services should be identified coherently and comprehensively.

To conclude, one of the most studied field in information technology and information system is IT acceptance since it is a vital factor to gain success for any IS and IT project. Therefore, numerous acceptance frameworks and models have been developed and applied to predict and explain the users' behaviour and decisions regarding particular system usage. However, none of the developed models consider security as an effective factor influencing on intention to use or acceptance. On the other hand, the influence of satisfaction and quality on acceptance decisions of users has received limited attention. To address this gap, this research contributes to acceptance theory with consideration of proposing a model (E-Service Technology Acceptance Model) that put spotlight on the influence of security, satisfaction and quality on end-user intention to use e-services and consequently e-service acceptance. Besides, there is no instrument to assess the e-service technology acceptance, so the academicians and practitioners have difficulties to examine the user acceptance of e-service project. This study is going to develop a valid and reliable survey instrument to address this gap.

1.4 Research Questions

This study will answer the below general questions:

- What are the factors that affect users' acceptance of e-services?
- What is the intention of people towards the acceptance of e-services?
- What are the dimensions of e-service satisfaction?
- What are the dimensions of e-service quality?
- What are the dimensions of e-service security?
- How to measure the user acceptance of e-service?
- What would be a proper model to investigate user adoption of e-service?

1.5 Objectives of Study

The main goal of this research is to develop an assessment model to examine user acceptance of e-service technology. So the study objectives are as follows:

i. To identify factors influencing on adoption of e-service.
ii. To propose an adoption model to assess e-service acceptance.
iii. To assess the adoption response of e-service technology.

1.6 Scope of the Study

The current study develops an adoption model to evaluate user acceptance of e-service. “Provision of services via Internet ” (Rust and Kannan, 2002; Pavlichev and Garson, 2003; Karim and Khalid, 2003; Reynolds, 2000) has been adapted as e-service definition in this study so services that are delivered through other networks or media are not in the scope of this study. Furthermore, this research is limited to electronic services that are provided on the screen thus other processes connected to electronic services are not in the scope of this research. In addition, this research only evaluates the adoption of e-service from the individual perspective and respondents for this research include 426 e-service (e-commerce and e-banking sectors) users in Malaysia.

1.7 Significance of the Study

The development of electronic communication has important effects on human daily’s activities. The researchers of this area for fascinating daily activities of industries owners, service organizations and other centres attempt to apply this technology and able them to communicate with their clients without any limitations in time and place, also, they can offer, buy and sell their products. The adoption and distribution of information and communication technologies (ICTs) significantly influence country’s economic growth (Hanafizadeh et al., 2014).

On the other side, rapidly development of technologies such as Internet , wireless, broadband and warehousing put organizations under pressure and increase customers' expectation, on the other hand, organizations would be able to improve their competitive position and business process by developing these technologies (Rust and Kannan, 2003). Due to the technological development, new opportunities and instruments are accessible to service providers (Rust, 2004). Therefore, according to Järvinen and Lehtinen (2005), it is important to examine different types of currently marketed e-services, particularly the e-service characteristics and e-service definition. However, several studies have been carried out on e-commerce and Internet adoption, only a few researches have been conducted particularly on electronic service acceptance (Yong and Jing, 2006). To describe electronic service acceptance, the trusted and validated measures have not been produced. E-service providers must follow the customer rational and irrational concerns about the usage of e-service to successfully replace traditional services by e-services (Hoffman, 2003).

Prediction of user acceptance regarding the candidate projects is the concern of both researchers and practitioners. User acceptance is one of the vital factors in determining the success of any information technology projects and e-service as well. Even if an e-service project is accomplished in which can result in impressive performance of users but users are not willing to use it, the project will be failed.

With regards to success, advantages of electronic services, quality and usability, and the electronic services usage should be assessed (Smith, 2001). To obtain success in new information systems and e-service technology, lack of user adoption is a vital obstacle. According to Anderson et al. (2005), the majority of studies in the field of Web services focused on the technological aspects, therefore, the social and managerial aspects are still unclear particularly in developing countries.

Earlier, the success of information system had been examined and observed from user satisfaction and technology acceptance perspectives. Both approaches separately had been examined until an integrated research framework developed by Barbara and Todd that links these two approaches by distinguishes beliefs and attitudes regarding the system and system usage (Wixom and Todd, 2005). But, the effect of

quality and security has not been studied and these two factors have not been included in the prior acceptance models that should be considered for evaluation of user adoption of electronic-based technologies. The current study aims to advance our knowledge in the field of e-service by revealing the roles of security, quality and satisfaction towards behavioral intention and usage of e- services in Malaysia.

User acceptance of e-services has not been fully explained by previous acceptance models and theories. For instance, TAM has been applied to explain computer tools usage, a system such as text editing instruments, database applications and also an individual's acceptance (Chau, 1996; Igbaria et al., 1995). According to Gefen et al. (2003) the use of TAM in the WWW contest has been supported by some studies, but still it has not been validated to describe e-service adoption.

An analysis of e-service acceptance literature reveals that only few studies have been concentrated on this issue among developing countries, this may occur due to the low number of businesses that offer e-service and slow infrastructure development (Dwivedi et al., 2006). With the focus on developing countries, this study may give insights of factors which has affect the user's acceptance of e-service and further recognizing the obstacles and assist in accelerate the procedure of people adoption of e-service in Malaysia.

As mentioned earlier, both practitioners and researchers are strongly interested in realizing why people adopt e-service so that better methods to design. Also, they will be able to evaluate and predict how users will respond to e-service. Findings of this study can be used by policy creators and stakeholders for designing strategies and making a decision. Therefore, this study will add new knowledge of information in this field.

1.8 Thesis Organization

This thesis is organized as follow: Literature Review (Chapter 2), Research Methodology (Chapter 3), E-service Technology Acceptance Model (Chapter 4), Results and Analysis (Chapter 5), and Conclusion (Chapter 6).

In Chapter 2, the background on the e-service technology, definition, and characteristics are provided. Then, the most common used acceptance models will be discussed and the related models and theories to e-service acceptance are described. Finally, dimensions of security, satisfaction and quality are extracted from the literature..

Chapter 3 provides the methodological procedure which will help research to achieve the objectives of the study will be discussed in details. It includes the research purpose, design, strategy, philosophy, sampling, scaling, data analysis, validity and reliability.

In Chapter 4, the dimensions of quality, satisfaction and security of e-services are examined using explanatory factor analysis and analytical hierarchy process. Furthermore, other related constructs to e-service acceptance are examined and the research hypotheses will be proposed.

In Chapter 5, structural equation modelling is applied to test the E-Service Technology Acceptance Model (ETAM), so the analysis is presented along with the calculated validity and reliability of the survey.

Chapter 6 discusses the conclusion, contributions and future works for this research. Firstly, the introduction is discussed; then, the contribution of this research is provided; finally, the future works are drawn for more investigation in this field.

REFERENCES

Agrey, R. and Xu, D. (2010). E-Service Innovation Provided by Local e-Government in China: A Case Study. *IEEE International Conference on Service-Oriented Computing and Applications (SOCA)*. 13-15 December. Perth, Australia, 290-293.

Ajzen, I. (1985). From intentions to actions: A Theory of Planned Behavior. In Kuhl J. and Beckmann J.(eds.). *Action Control: From Cognition to Behavior*. New York: Springer-Verlag, 3, 11-39.

Ajzen, I. and Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behavior.* Englewood, Cliffs, NJ: Prentice-Hall.

Al-Gahtani, S. and King, M. (1999). Attitudes. Satisfaction and Usage: factors contributing to each in the acceptance of information technology. *Behaviour and Information Technology Studies: Special Issue on Research Methodology,* 18(4), 277-297.

Al-Ghaith, W., Sanzogni, L. and Sandhu, K. (2010). Factors Influencing The Adoption And Usage of Online Services in Saudi Arabia. *The Electronic Journal on Information Systems in Developing Countries*, 40(1), 1-32.

Al-Hawari, M. and Ward, T. (2006). The Effect of Automated Service Quality on Australian Banks' Financial Performance and the Mediating Role of Customer Satisfaction. *Marketing Intelligence and Planning,* 24(2), 127-147.

Al-Kasasbeh, M. M., Dasgupta, S. and AL-Faouri, A. H. (2011). Factors Affecting E-Service Satisfaction. *Communications of the IBIMA*, 2011, 1-12.

Alawadhi, S. and Morris, A. (2008). The Use of the UTAUT Model in the Adoption of E-government Services in Kuwait. *Proceedings of the 41st Hawaii International Conference on System Sciences*. 7-10 January. Hawaii, 219 - 230.

Alawneh, A., Al-Refai, H. and Batiha, K. (2013). Measuring User Satisfaction From E-Government Services: Lessons from Jordan. *Government Information Quarterly*, 30, 277-288.

Alexander, J. E. and Tate, M. A. (1999). *Web Wisdom: How To Evaluate And Create Information Quality On The Web.* Erlbaum: Mahwah.

Alsop, S. (1999). The Dawn of E-service. *Fortune*, 9(138), 243- 244.

Amor, D. (1999). *The E-businesses (R) Evolution: Living and Working in an Interconnected World.* CA: Hewlett-Packard Professional Books.

Anandarajan, M., Igbaria, M. and Anakwe, U. P. (2000). Technology Acceptance in the Banking Industry: A prospective from a less developed country. *Information Technology and People*, 13(4), 298-312.

Anderson, D., Howell-Barber, H., Hill, J., Javed, N., Lawler, J. and Li, Z. (2005). A Study of Web Services Projects in The Financial Services Industry. *Information Systems Management*, 22(1), 66–76.

Anderson, E. W., Fornell, C. and Lehmann, D. R. (1994). Customer Satisfaction, Market Share, and Profitability: Findings from Sweden. *Journal of Marketing*, 58(3), 53-66.

Anderson, R. E. and Srinivasan, S. S. (2003). E-satisfaction and E-Loyalty: A Contingency Framework. *Psychology and Marketing* 20(2), 123-138.

Ansari, A., Essegaier, S. and Kohli, R. (2000). Internet Recommendation Systems. *Journal of Marketing Research*, 37(3), 363-375.

Anthopoulos, L. G., Siozos, P. and Tsoukalas, L. A. (2007). Applying Participatory Design and Collaboration in Digital Public Services for Discovering and Re-designing E-government Services. *A Government Information Quarterly*, 24(2), 353-376.

Ariff, M. S. M., Yun, L. O., Zakuan, N. and Ismail, K. (2013). The Impacts of Service Quality and Customer Satisfaction on Customer Loyalty in Internet Banking. *Procedia - Social and Behavioral Sciences*, 81, 469-473.

Armstrong, C. P. and Sambamurthy, V. (1999). Information Technology Assimilation in Firms: The Influence of Senior Leadership and IT Infrastructures. *Information Systems Research*, 10(4), 304-327.

Asubonteng, P., McCleary, K. J. and Swan, J. (1996). Servqual Revisited: A Critical Review of Service Quality. *Journal of Services Marketing*, 10(6), 62-81.

Asvanund, A., Clay, K., Krishnan, R. and Smith, M. D. (2004). An Empirical Analysis of Network Externalities in Peer-to-Peer Music-Sharing Networks. *Information Systems Research*, 15(2), 155-174.

Bagozzi, R. P. (1982). A Field Investigation of Causal Relations among Cognitions, Affect. Intentions, and Behavior. *Journal of Marketing Research*, 19, 562-584.

Bagozzi, R. P. (2007). The Legacy of The Technology Acceptance Model and A Proposal For A Paradigm Shift. *Journal of the Association for Information Systems*, 8(4), 243-254.

Bagozzi, R. P. and Yi, Y. (1988). On The Evaluation of Structural Equation Models. *Journal of the Academy of Marketing Science*, 16, 74-94.

Bahtiyar, S. and Çag˘layan, M. U. (2014). Trust Assessment of Security For E-Health Systems. *Electronic Commerce Research and Applications*, 13, 164-177.

Bailey, J. E. and Pearson, S. W. (1983). Development of A Tool For Measuring and Analyzing Computer User Satisfaction. *Management Science*, 29(5), 530–544.

Bair, J. H. (1974). *Evaluation and Analysis of an Augmented Knowledge Workshop: Final Report for Phase I.* New York: Rome Air Development Center, Griffis Air Force Base.

Bandura, A. (1977). Self-efficacy: Towards A Unifying Theory of Behavioral Change. *Psychological Review*, 84, 191-215.

Bandura, A. (1978). Reflections on Self-efficacy. In: Rashman, S. (ed.) *Advances in Behavioral research and Therapy* (pp. 237–269), Oxford Pergamon Press.

Bandura, A. (1982). Self-efficacy Mechanism in Human Agency. *American Psychologist*, 37, 122-147.

Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory.* USA: Prentice Hall, Inc.

Banker, R., Robert, J. and Mahmood, M. (1993). *Strategic Information Technology Management: Perspectives on Organizational Growth and Competitive Advantage.* Harrisburg: Idea Group Publishing.

Barnes, S. and Vidgen, R. (2007). Interactive e-government: Evaluating the Web Site of the UK Inland Revenue. *Journal of Electronic Government Research*, 3(1), 19-37.

Barnes, S. J. and Vidgen, T. R. (2002). An Integrative Approach To The Assessment of E-Commerce Quality. *Journal of Electronic Commerce Research*, 3(3), 114-27.

Barnett, T., Kellermanns, F., Pearson, A. and Pearson, R. (2006). Measuring Information System Usage: Replication and Extensions. *Journal of Computer Information Systems*, 47(2), 76-85.

Baroudi, J. and Orlikowski., W. (1988). A Short-Form Measure of User Information Satisfaction: A Psychometric Evaluation and Notes on Use. *Journal of Management Information Systems*, 4(4), 44-59.

Baroudi, J. J., Olson, M. H. and Ives, B. (1986). An Empirical Study of The Impact of User Involvement on System Usage and Information Satisfaction. *Communication of ACM*, 29(3), 232-238.

Bartlett, J. E., Kotrlik, J. W. and Higgins, C. C. (2001). Organizational Research: Determining Appropriate Sample Size in Survey Research. *Learning and Performance Journal*, 19(1), 43-50.

Bauer, H. H., Falk, T. and Hammerschmidt , M. (2006). Etransqual: A Transaction Process-Based Approach for Capturing Service Quality in Online Shopping. *Journal of Business Research*, 59(7), 866-875.

Bebko, C. P. (2000). Service Intangibility and Its Impact on Consumer Expectations of Service Quality. *Journal of Services Marketing*, 14(1), 9-26.

Belanche, D., Casaló, L. V. and Flavián, C. (2012). Integrating trust and personal values into the Technology Acceptance Model: The case of e-government services adoption. *Cuadernos de Economía Dirección de la Empresa*, 15, 192-204.

Bélanger, F. and Carter, L. (2008). Trust and Risk in E-government Adoption. *Journal of Strategic Information Systems*, 17, 165-176.

Bentler, P. M. (1990). Comparative Fit Indexes in Structural Models. *Psychological Bulletin*, 107(2), 238.

Bentler, P. M. and Bonet, D. G. (1980). Significant Tests and Goodness of Fit in The Analysis of Covariance Structures. *Psychological Bulletin*, 88, 588-606.

Bhattacherjee, A. (2001). An Empirical Analysis of The Antecedents of Electronic Commerce Service Continuance. *Decision Support Systems*, 32(2), 201-214.

Billy, B., Rob, L. and Ivan, W. (2008). The Impact of Website Quality on Consumer Satisfaction and Purchase Intention: Evidence from Chinese online Visitors. *International Journal of Hospitality Management,* 27, 391-402.

Bitner, M. J., Brown, S. W. and Meuter, M. L. (2000). Technology Infusion in Service Encounters. *Journal of the Academy of Marketing Science*, 28(1), 138-149.

Boshoff, C. (2007). A psychometric assessment of E-S-Qual: A Scale to Measure E-Service Quality. *Journal of Electronic Commerce Research*, 8(1), 101-114.

Boulter, J. (2014). How to build profitable customer relationships. Retrieved 7 January 2013. <*http://www.businessexpertwebinars.com/content/view/ 1033/29*>. Access: 15 April 2015.

Bouten, M. P. L. M. (2008). *Compatibility and Technology Acceptance: Consolidating, Validating and Extending Concep.* Msc. International Business Studies Master Thesis, Maastricht University.

Bradley, J. (2009). The Technology Acceptance Model and Other User Acceptance Theories. *IGI Global*, 277-294.

Breivik, E., Troye, S. V. and Olsson, U. H. (1999). Dimensions of Intangibility and Their Impact on Product Evaluation. *Advances in Consumer Research,* 26(1), 264-273.

Brensinger, R. P. and Lambert, D. M. (1990). Can the SERVQUAL Scale be Generalized to Business-to-Business Services? Knowledge Development in Marketing. A*MA's Summer Educator's Conference Proceedings*. 1990. USA, Chicago, 289-295.

Bressolles, G., Durrieu, F. and Senecal, S. (2014). A Consumer Typology based on E-Service Quality and E-satisfaction. *Journal of Retailing and Consumer Services*, 21, 889-896.

Brown, S. and Venkatesh, V. (2005). Model of Adoption of Technology in Households: A Baseline Model Test and Extension Incorporating *Household Life Cycle MIS Quarterly*, 29(3), 399-426.

Buchanan, T., Paine, C., Joinson, A. N. and Reips, U.-D. (2007). Development of Measures of Online Privacy Concern and Protection For Use on the Internet. *Journal of the American Society for Information Science and Technology,* 58(2), 157-165.

Burton, L. J. and Mazerolle, S. M. (2011). Survey Instrument Validity Part I: Principles of Survey Instrument Development and Validation in Athletic Training Education *Research. Athletic Training Education Journal*, 6(1), 27-35.

Butler, K. A. (1996). Usability Engineering Turns 10. *Interactions*, 3(1), 58-75.

Byrne, B. M. (1994). Structural Equation Modeling with EQS and EQS/Windows: *Basic Concepts, Applications, and Programming*. California: SAGE.

Cai, S. and Jun, M. (2003). Internet Users Perceptions of On-line Service Quality: A Comparison of On-line Buyers and Information Searchers. *Managing Service Quality*, 13(6), 504-519.

Carayannis, E. G. (2002). Is Higher Order Technological Learning A Firm Core Competence, When, How, and Why: A Longitudinal, Multi-Industry Study of Firm Technological Learning and Market Performance. *International Journal of Technovation*, 22(10), 625-643.

Carillo, K. D. (2010). Published. Social Cognitive Theory in IS Research Literature Review, Criticism, and Research Agenda. *International Conference on Information Systems, Technology and Management (ICISTM)*, 11-13 March 2010, Bangkok, Thailand. 20–31.

Carmines, E. G. and Zeller, R. A. (1979). *Reliability and Validity Assessment.* Newbury Park, CA: SAGE.

Carter, L. and Bélanger, F. (2005). The Utilization of E-Government Services: Citizen Trust, Innovation and Acceptance Factors. *Information Systems Journal,* 15(1), 5-26.

Casati, F. and Shan, M. (2001). Dynamic and Adaptive Composition of E-services. Information Systems, *Information Systems,* 26(3), 143-63.

Chakraborty, S. and Sengupta, K. (2014). Structural Equation Modelling of Determinants of Customer Satisfaction of Mobile Network Providers: Case of Kolkata, India. *IIMB Management Review*, 26(4), 234-248.

Chang, M.-Y., Pang, C., Tarn, J. M., Liu, T.-S. and Yen, D. C. (2015). Exploring User Acceptance of An E-Hospital Service: An Empirical Study in Taiwan. *Computer Standards and Interfaces*, 38, 35-43.

Chang, M. K. and Cheung, W. (2001). Determinants of The Intention to Use Internet /WWW at Work: A Confirmatory Study. *Information and Management*, 39, 1-14.

Chang, S.-S., Lou, S.-J., Cheng, S.-R. and Lin, C.-L. (2015). Exploration of usage Behavioral Model Construction For University Library Electronic Resources. *The Electronic Library*, 33(2), 292-307.

Charney, S. (2008). Establishing End to End Trust [Online]. *Microsoft Corp. Available: www.download.microsoft.com/.*

Chatterjee, D., Richardson, V. J. and Zmud, R. W. (2001). Examining the Shareholder Wealth Effects of Announcements of Newly Created CIO Positions. *MIS Quarterly*, 25(1), 43-70.

Chau, P. Y. K. (1996). An Empirical Assessment of A Modified Technology Acceptance Model. *Journal of Information Management Systems*, 13(2), 185-204.

Chen, C.-D., Huang, C.-K., Chen, M.-J. and Ku, E. (2015). User's Adoption of Mobile O2o Applications: Perspectives of the Uses and Gratifications Paradigm and Service Dominant Logic. *Pacific Asia Conference on Information Systems PACIS.* 6-9 July 2015. Singapore, 253-270.

Chen, L. and Tan, J. (2004). Technology Adaption in E-commerce: Key Determinants of Virtual Stores Acceptance. *European Management Journal*, 22(1), 74-86.

Chen, L. D., Soliman, K. S., Mao, E. and Frolick, M. N. (2000). Measuring User Satisfaction with Data Warehouses: An Exploratory Study. *Information and Management*, 37, 103-110.

Chen, Q., Clifford, S. J. and Wells, W. D. (2002). Attitude Toward The Site II: New Information. *Journal of Advertising Research*, 42(2), 33-46.

Chen, Q. and Wells, W. D. (1999). Attitude Toward The Site. *Journal of Advertising Research*, 39(5), 27-37.

Chen, S.-C. (2012). The Customer Satisfaction–Loyalty Relation in An Interactive E-Service Setting: The Mediators. *Journal of Retailing and Consumer Services*, 19, 202-210.

Cheney, P. H., Mann, R. I. and Amoroso, D. L. (1986). Organizational Factors Affecting The Success of End-User Computing. *Journal of Management Information Systems*, 111(1), 65–80.

Cheung, C. M. K. and Lee, M. K. O. (2001). Trust in Internet shopping: Instrument Development and Validation through Classical and Modern Approaches. *Journal of Global Information Management*, 9(3), 23-31.

Cheung, C. M. K. and Lee, M. K. O. (2005). The Asymmetric Effect of Website Attribute Performance on Web Satisfaction: An Empirical Study. *E-Service Journal*, 3(3), 65-90.

Cho, N. and Park, S. (2001). Development of Electronic Commerce User-Consumer Satisfaction Index (ECUSI) for Internet Shopping. *Industrial Management and Data Systems*, 101(8), 400-405.

Churchill, G. A. (1979). A Paradigm For Developing Better Measures of Marketing Constructs. *Journal of Marketing Research*, 16(1), 64-73.

Chuttur, M. Y. (2009). Overview of the Technology Acceptance Model: Origins, Developments and Future Directions. Indiana University, USA. *Sprouts: Working Papers on Information Systems*, 9(37), 1-23.

Clegg, C., Axtell, C., Damodaran, L., Farbey, B., Hull, R., Lloyed-Jones, R., Nicholls, J., Sell, R. and Tomlinson, C. (1997). Information Technology: A Study of Performance and The Role of Human and Organizational Factors. *Ergonomics*, 40, 851–871.

Collier, J. E. and Bienstock, C. C. (2006). Measuring Service Quality in E-Retailing. *Journal of Service Research*, 8(3), 260-275.

Colwell, S. R., Aung, M., Kanetkar, V. and Holden, A. L. (2008). Toward A Measure of Service Convenience: Multiple-Item Scale Development and Empirical Test. *Journal of Services Marketing*, 22(2), 160-169.

Compeau, D. R. and Higgins, C. A. (1995). Computer Self-Efficacy: Development of a Measure and Initial Test. *MIS Quarterly*, 19(2), 189-211.

Connolly, R., Bannister, F. and Kearney, A. (2010). Government Website Service Quality: A Study of The Irish Revenue Online Services. *European Journal ofInformation Systems*, 19, 649-667.

Cooper, D. and Schindler, P. (2003). *Business Research Methods*. (8th). New York: McGraw-Hill.

Creswell, J. W. (2003). *Research Design: Qualitative, Quantitative, and Mixed Method Approaches*. (2nd). Thousand Oaks, CA: Sage Publications.

Cristobal, E., Flavian, C. and Guinalıu, M. (2007). Perceived E-Service Quality: Measurement Validation and Effects on Consumer Satisfaction and Website Loyalty. *Managing Service Quality*, 17(3), 317-340.

Cronan, T. P. and Al-Rafee, S. (2008). Factors that Influence the Intention to Pirate Software and Media. *Journal of Business Ethics*, 78, 527-545.

Cronin, J. J. and Taylor, S. A. (1992). Measuring Service Quality: A Reexamination and Extension. *Journal of Marketing*, 56(3), 55-68.

D'Angelo, J. and Little, S. (1998). Successful Web Pages: What Are They and Do They Exist? *Information Technology and Libraries*, 17(2), 71-81.

Dabholkar, P. (1996). Consumer Evaluations of New Technology-Based Self-Service Options: An Investigation of Alternative Modes of Service Quality. *International Journal of Research in Marketing*, 13(1), 29-51.

Davis, D. (2005). *Business Research for Decision Making*. (6th). Australia: Thomson South-Western.

Davis, F. D. (1986). *Technology Acceptance Model for Empirically Testing New End-User Information Systems: Theory and Results*. Doctoral Dissertation, Cambridge University.

Davis, F. D. (1987). User Acceptance of Information Systems: The Technology Acceptance Model (TAM). Working Paper, *Division of Research, Graduate School of Business, University of Michigan.* 1987(August): 1-33.

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319-340.

Davis, F. D., Bagozzi, R. P. and Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of two Theoretical models. *Management Science*, 35(8), 982-1003.

Davis, F. D., Bagozzi, R. P. and Warshaw, P. R. (1992). Extrinsic and Intrinsic Motivation to Use Computers in The Workplace. *Journal of Applied Social Psychology*, 22, 1111–1132.

Dearing, J. and Meyer, G. (1994). An Exploration Tool for Predicting Adoption Decisions. *Science Communications*, 16(1), 43-57

Debons, A., Ramage, W. and Orien, J. (1978). Effectiveness Model of Productivity. In: Kriebel, L. (ed.) *Research on Productivity Measurement Systems for Administraiivc Serviees: Computing and Information Services*. NSF Grant APR-20546.

DeLone, W. H. and McLean., E. R. (1992). Information Systems Success: The Quest For The Dependent Variable. *Information Systems Research,* 3(1), 60-95.

Dickerson, M. D. and Gentry, J. W. (1983). Characteristics of Adopters and Non-Adopters of Home Computers. *Journal of Consumer Research*, 10, 225-235.

Dillman, D. (2000). *Mail and Internet Surveys: The Tailored Design Method*. (2nd). New York: John Wiley and Sons Inc.

Dillman, D. A. (1978). *Mail and Telephone Survey: The Total Design Method*. New York: John Wiley and Sons Inc.

Dillon, A. and Morris, M. (1996). User Acceptance of Information Technology: Theories and Models. In: M. Williams (ed.) *Annual Review of Information Science and Technology* (pp. 3-32). Medford NJ: Information Today.

Doll, W. J. and Torkzadeh., G. (1988). The Measure of End-User Computing Satisfaction. *MIS Quarterly*, 12(2), 259–274.

Drinjak, J., Altmann, G. and Joyce, P. (2001). Justifying Investments in Electronic Commerce. *Proceedings of the Twelfth Australasian Conference on Information Systems,* 4-7 December 2001, Coffs Harbour, NSW, Australia, 1-13.

Dritsas, S., Gymnopoulos, L., Karyda, M., Balopoulos, T., Kokolakis, S., Lambrinoudakis, C. and Katsikas, S. (2006). A Knowledge-based Approach to Security Requirements For E-Health Applications. *The Electronic Journal on Emerging Tools and Applications, In the Special Issue: Emerging Security Paradigms in the Knowledge Era*, 2(1); 1-23.

Durr, M. (1998). Get Closer to Clients with E-Service. *Solutions Integrator*, 12(15).

Dwivedi, Y. K., Choudrie, J. and Brinkman, W.-P. (2006). Development of A Survey Instrument to Examine Consumer Adoption of Broadband. *Industrial Management and Data Systems* 106(5), 700-718.

Dwivedi, Y. K., Khan, N. and Papazafeiropoulou, A. (2006). Consumer Adoption and Usage of Broadband in Bangladesh. *Proceedings of the 12th Americas Conference on Information Systems*. August 4-6 2006. Acapulco, Mexico, 3538-3547.

Dwivedi, Y. K., Williams, M. D., Weerakkody, V., Lal, B. and Bhatt, S. (2008). Understanding Factors Affecting Consumer Adoption of Broadband in India: A Pilot Study. *Journal of Cases on Information Technology*, 10(3), 39-52.

Dwyer, F. R., Schurr, P. H. and Oh, S. (1987). Developing Buyer-Seller Relationships. *Journal of Marketing*, 51(2), 11-27.

Dzemydienė, D., Naujikienė, R. and Kalinauskas, M. (2010). Security Requirements and Possibilities of Risk Evaluation in E-Financial Payment Systems. *The 10th International Conference Reliability and Statistics in Transportation and Communication*. 20-23 October 2010. Riga, Latvia, 297-305.

Earle, N. (1999). *Chapter 2 of the Internet : New E-Services Promise a "Do it for me" World.* Novell Inc.

Eddy, D. M., Hollingworth, W., Caro, J. J., Tsevat, J., McDonald, K. M., and Wong, J. B. (2012). Model Transparency and Validation A Report of the ISPOR-SMDM Modeling Good Research Practices Task Force–7. *Medical Decision Making*, 32(5), 733-743.

Einasto, O. (2014). E-service Quality Criteria in University Library: A Focus Group Study. *Procedia - Social and Behavioral Sciences*, 147, 561-566.

Elliot, S. and Fowell, S. (2000). Expectations versus reality: A Snapshot of Consumers Experiences with Internet Retailing. *International Journal of Information Management*, 20, 323–336.

Erikson, E. H. (1968). *Identity: Youth and Crisis*. New York: W. W. Norton and Company.

Evans, P. B. and Wurster, T. S. (1997). Strategy and The New Economics of Information. *Harvard Business Review*, 75(5), 71-82.

Evanschitzky, H. (2007). E-Services: Opportunities and Challenges: An Overview. *Journal of Value Chain Management*, 1(1/2), 2-5.

Evanschitzky, H., Iyer, G. R., Hesse, R. J. and Ahlert, D. (2004). E-satisfaction: A Re-Examination. *Journal of Retailing*, 80, 239-247.

Fabrigar, L. R., Wegener, D. T., MacCallum, R. C. and Strahan, E. J. (1999). Evaluating The Use of Exploratory Factor Analysis in Psychological Research. *Psychological Methods*, 4, 272-299.

Fassnacht, M. and Koese, I. (2006). Quality of Electronic Services: Conceptualizing and Testing A Hierarchical Model. *Journal of Service Research*, 9(1), 19-31.

Featherman, M. and Fuller, M. (2003). Applying TAM to E-services Adoption: The Moderating Role of Perceived Risk. *Proceedings of the 36th Annual Hawaii International Conference on System Science*, 6- 9 June 2003. USA, Hawaii, 1-11.

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

Field, A. (2000). *Discovering Statistics Using SPSS for Windows*. London: Sage Publications.

Field, A. P. (2005). *Discovering Statistics Using SPSS*. London: Sage Publications.

Finn, A. (1985). A Theory of the Consumer Evaluation Process for New Product Concepts. *Research in Consumer Behavior*, 1, 35-65.

Finn, A. (2011). Investigating The Non-Linear Effects of E-Service Quality Dimensions on Customer Satisfaction. *Journal of Retailing and Consumer Services*, 18, 27-37.

Fishbein, M. and Ajzen, I. (1975). *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*. MA: Addison-Wesley.

Fliegel, F. C. and Kivlin, J. E. (1996). Attributes of Innovations as Factors in Diffusion. *American Journal of Sociology*, 72(3), 235-248.

Fornell, C. (1987). A Second Generation of Multivariate Analysis: Classification of Methods and Implications For Marketing Research. In: Houston, M. J. (ed.) Review of Marketing, (pp. 407-450). Chicago, IL: American Marketing Association.

Fornell, C. and Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39-50.

Forrest, E. and Mizerski, R. (1996). *Interactive Marketing: The Future Present*. Chicago: NTC Business Books.

Francis , J. E. and White, L. (2004). Value Across Fulfillment-Product Categories of Internet Shopping. *Managing Service Quality*, 14(2/3), 226-234.

Friedman, Batya, Peter H. Kahn Jr. and Howe., D. C. (2000). Trust Online. *Communications of the ACM*, 43(December), 34-40.

Fu, J. R., Farn, C. K. and Chao, W. P. (2006). Acceptance of Electronic Tax Filing: A Study of Taxpayer Intentions. *Information and Management*, 43(1), 109-126.

Gantz, S. (2008). Layered Security Architecture; Establishing Authentication, Authorization, and Accountability. *Security Architecture*, Retrieved June 19, 2008, from *www.securityarchitecture.com/docs/Layered_Security_Architecture.pdf*

Gatignon, H. A. and Robertson, T. S. (1986). Integration of Consumer Diffusion Theory and Diffusion Models: New Research and Directions. In: Mahajan, V. and Wind, V. (ed.), *Innovation Diffusion Models of New Product Acceptance* (pp. 37-59), Cambridge, MA: Ballinger.

Gefen, D. (2002). Customer Loyalty in E-commerce. *Journal of Association for Information Systems*, 3(1), 27-51.

Gefen, D., Karahanna, E. and Straub, D. W. (2003). Trust and TAM in Online Shopping: An Integrated Model. *MIS Quarterly*, 27, 51-90.

Geng, X. and Chu, X. (2012). A New Importance–Performance Analysis Approach for Customer Satisfaction Evaluation Supporting PSS Design. *Expert Systems with Applications*, 39, 1492-1502.

George, D. and Mallery, P. (2003). *SPSS for Windows Step by Step: A Simple Guide and Reference*. (4th ed). Boston: Allyn and Bacon.

Gerbing, D. W., Anderson, J. C. and Carlo, M. (1993). Evaluation of Goodness-of-fit indeces for Stractural Equations Models. *Sociological Methods and Researchs*, 21(2), 132-160.

Ghauri, P. and Gronhaug, K. (2005). *Research Methods in Business Studies*. Harlow: FT/Prentice Hall.

Gill, J., Johnson, P. and Clark, M. (2010). *Research Methods for Managers*. (4th). New York: SAGE Publications Ltd.

Ginzbeg, G. M. J. (1981). Early Diagnosis of MIS Implementation Failure: Promising Results and Unanswered Questions. *Management Science*, 27, 459-478.

Golden, B. L. and Wang, Q. (1990). An Alternative Measure of Consistency. In: B. Golden, A. Wasil and P.T. Harker (eds.) *Analytic Hierarchy Process: Applications and Studies* (pp. 68-81), New-York: Springer Verlag.

Goodhue, D. (1988). Attitudes: Toward Theoretical and Definition Clarity. *Data Base,* 19(3/4), 6-15.

Gopal, R. D. and Sanders, G. L. (2000). Global Software Piracy: You Can't Get Blood Out of A Turnip. *Communications of the ACM*, 43, 83-89.

Gorsuch, R. (1983). *Factor Analysis*. Hillsdale, New Jersey: Erlbaum.

Gounaris, S. P., Stathakopoulos, V. and Athanassopoulos, A. D. (2003). Antecedents to Perceived Service Quality: An Exploratory Study in The Banking Industry. *International Journal of Bank Marketing*, 21(4), 168-190.

Greaves, C., Kipling, P. and Wilson, T. D. (1999). Business Use of The World Wide Web with Particular Reference to UK Companies. *International Journal of Information Management,* 19(6), 449-470.

Greenemeier, L. (2000). How HP Carves Out The Market. *Information Week,* 812, 64-68.

Grigoroudis, E., Litos, C., Moustakis, V. A., Politis, Y. and Tsironis, L. (2008). The Assessment of User-Perceived Web Quality: Application of A Satisfaction Benchmarking Approach. *European Journal of Operational Research,* 187, 1346-1357.

Grönroos, C. (2000). Service Reflections: Service Marketing Comes of Age. In: Swartz, T. A. and Iacobucci, D. (eds.), *Handbook of Services Marketing and Management* (pp. 13-20), London, UK: Sage Publications Inc.

Guarino, A. J. (2004). Comparison of First and Second Generation Multivariate Analyses: Canonical Correlation Analysis and Structural Equation Modeling. *Florida Journal of Educational Research*, 42, 22 - 40.

Gummerus, J., Liljander, V., Pura, M. and Riel, A. V. (2004). Customer Loyalty to Content-based Web Sites: The Case of An Online Healthcare Service. *Journal of Services Marketing,* 18(3), 175–186.

Gwebu, K. L. and Wang, J. (2011). Adoption of Open Source Software: The Role of Social Identification. *Decision Support Systems*, 51, 220-229.

Hair, J., Anderson, R., Tatham, R. and Black, W. (1995). *Multivariate Data Analysis*. (4th ed). New Jersey: Prentice-Hall Inc.

Hair, J. F., Anderson, R. E., Tatham, R. L. and Black, W. C. (1998). *Multivariate Data Analysis*. (Fifth ed). Englewood Cliffs, New Jersey: Prentice Hall.

Hartwick, J. and Barki., H. (1994). Explaining The Role of User Participation in Information System Use. *Management Science,* 40(4), 440–465.

Heijden, H. (2004). User Acceptance of Hedonic Information Systems. Management *Information Systems Quarterly*, 28(4), 695–704.

Henderson, R., Deane, F. P. and Ward, M. J. (1995). Occupational Differences in Computer-related Anxiety: Implications For The Implementation of A Computerized Patient Management Information System. *Behaviour and Information Technology,* 14, 23-31.

Hennig-Thurau, T., Gwinner, K. P., Walsh, G. and Gremler, D. D. (2004). Electronic Word-of-Mouth via Consumer-Opinion Platforms: What Motivates Consumers to Articulate Themselves on the Internet. *Journal of Interactive Marketing*, 18(Winter), 38-52.

Hernandez, B., Jimenez, J. and Martin, M. J. (2011). Age, Gender and Income: Do They Really Moderate Online Shopping Behaviour? *Online Information Review*, 35(1), 113-133.

Heskett, J. L. (2002). Beyond customer loyalty. *Management and Service Quality*, 12(6), 355–357.

Ho, C.-I. and Lee, Y.-L. (2007). The Development of An E-Travel Service Quality Scale. *Tourism Management*, 26, 1434-1449.

Hofacker, C. F., Goldsmith, R. E., Bridges, E. and Swilley, E. (2007). E-Services: A Synthesis and Research Agenda. *Journal of Value Chain Management*, 1(1/2), 14-44.

Hoffman, K. D. (2003). Marketing + MIS = E-Service, *Communications of the ACM*, 46(6), 53-55.

Hoffman, K. D. and Bateson, J. E. G. (1997). *Essentials Of Service Marketing.* (4th). Texas: The Dryden Press.

Hoffman, K. D. and Bateson, J. E. G. (2010). *Services Marketing: Concepts, Strategies, and Cases*. (4th). Ohio, USA: Cengage Learning.

Holak, S. L. and Lehman, D. R. (1990). Purchase Intentions and The Dimensions of Innovation: An Exploratory Model. *Journal of Product Innovation Management*, 7(1), 59-73.

Holsapple, C. W., Iyengar, D., Jin, H. and Rao, S. (2008). Parameters for Software Piracy Research. *The Information Society*, 24, 199-218.

Hu, L. T. and Bentler, P. M. (1999). Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives. *Structural Equation Modeling*, 6(1), 1-55.

Huang, J. H., Yang, C., Jin, B. H. and Chiu, H. (2004). Measuring Satisfaction with Business-to-Employee Systems. *Computers in Human Behavior*, 20(1), 17–35.

Huck, S. W. (2007). *Reading Statistics and Research.* (5th). United States of America: Allyn and Bacon.

Hussain, R., Nasser, A. A. and Hussain, Y. K. (2014). Service Quality and Customer Satisfaction of A UAE-Based Airline: An Empirical Investigation. *Journal of Air Transport Management*, 42(January), 167-175.

Hyde, K. F. (2000). Recognising Deductive Processes in Qualitative Research. *Qualitative Market Research: An International Journal*, 3(2), 82-90.

Igbaria, M., Guimaraes, T. and Davis, G. B. (1995). Testing The Determinants of Microcomputer Usage via A Structural Equation Model. *Journal of Management Information Systems* 11(4), 87-114.

Igbaria, M., Parasuraman, S. and Baroudi, J. J. (1996). A Motivational Model of Microcomputer Usage. *Journal of Management Information Systems* 13(1), 127–144.

Igbaria, M., Schiffman, S. J. and Wieckowski, T. J. (1994). The Respective Roles of Perceived Usefulness and Perceived Fun in The Acceptance of Microcomputer Technology. *Behaviour and Information Technology*, 13, 349–361.

Iqbal, A., Verma, R. and Baran, R. (2003). Understanding Consumer Choices and Preferences in Transaction-based E-Services. *Journal of Service Research*, 6(1), 51-65.

IS07498-2 2004. (1989). *Information Processing Systems – Open Systems Interconnection – Basic Reference Model – Part 2: Security Architecture.* International Organization for Standardization.

Ives, B. and Olson, M. H. (1984). User Involvement and MIS Success: A Review of Research. *Management Science*, 30, 586–603.

Ives, B., Olson, M. H. and Baroudi., J. J. (1983). The Measurement of User Information Satisfaction. *Communication of ACM*, 26(10), 785–793.

Janda, S., Trocchia, P. J. and Gwinner, K. P. (2002). Consumer Perceptions of Internet Retail Service Quality. *International Journal of Service Industry Management*, 13(5), 412-431.

Jarvenpaa, S. and Todd, P. (1997). Consumer Reactions to Electronic Shopping on The World Wide Web. *International Journal of Electronic Commerce*, 1(2), 59-88.

Järvinen, R. and Lehtinen, U. (2005). Services, e-Services and e-Service Innovations Combination of Theoretical and Practical Knowledge. In: Hannula, M., Järvelin, A.-M. and Seppä, M. (eds.) *Frontiers of e-Business Research, Tampere: Tampere University of Technology and University of Tampere* (pp. 78-89). Tampere: Tampere University of Technology and University of Tampere.

Järvinen, R., Lehtinen, U. and Vuorinen, I. (2003). Options of Strategic Decision Making in Services. Tech, Touch and Customizations in Financial Services. *European Journal of Marketing*, 37(5/6), 774-795.

Jiang, J. J., Klein, G. and Crampton, S. M. (2000). A Note on SERVQUAL Reliability and Validity in Information System Service Quality Measurement. *Decision Sciences*, 31(3), 725-744.

Johnston, R. (1997). Identifying The Critical Determinants of Service Quality in Retail Banking: Importance and Effect. *International Journal of Bank Marketing*, 15(4), 111-116.

Joreskog, K. G. and Sorbom, D. (1989). *LISREL 7: A Guide to The Program and Applications.* (2nd). Chicago: SPSS Inc.

Jun, M. and Cai, S. (2001). The Key Determinants of Internet Banking Service Quality: A Content Analysis. *International Journal of Bank Marketing*, 19(7), 276-291.

Jun, M., Yang, Z. and Kim, D. (2004). Customers' Perceptions of Online Retailing Service Quality and Their Satisfaction. *International Journal of Quality and Reliability Management*, 21(8), 817-840.

Kardaras, D. and Karakostas, B. (2006). E-service Adaptation Using Fuzzy Cognitive Maps. *3rd International IEEE Conference Intelligent Systems*, 4-6 September 2006. Varna, Bulgaria, 227 - 230.

Karim, M. R. A. and Khalid, N. M. (2003). *E-Government in Malaysia*. Kuala Lumpur: Pelanduk Publication.

Katz, E. (1957). The Two-Step Flow of Communication: An Up-to-Date Report on An Hypothesis. *Public Opinion Quarterly*, 21(1), 61-78.

Kerr, E. B. and Hiltz, S. R. (1982). *Computer Mediated Communication Systems: Status and Evaluation.* New York: Academic Press.

Kim, D., Steinfiled, C. and Lai, Y. (2008). Revisiting The Role of Web Assurance Seals in Business-to-Consumer Electronic Commerce. *Decision Support Systems*, 44(4), 1000-1015.

Kim, M., Kim, J.-H. and Lennon, S. J. (2006). Online Service Attributes Available on Apparel Retail Web Sites: An E-S-QUAL Approach. *Managing Service Quality*, 16(1), 51-77.

Kim, S., Malhotra, N. and Narasimhan, S. (2005). Two Competing Perspectives on Automatic Use: a Theoretical and Empirical Comparison. *Information Systems Research*, 16(4), 418-432.

Kim, S. and Stoel, L. (2004). Apparel Retailers: Web Site Quality Dimensions and Satisfaction. *Journal of Retailing and Consumer Services*, 11(2), 109-117.

Kline, P. (1997). *An Easy Guide to Factor Analysis*. London: Routledge.

Ko, K. H. (1990). Promotion of IT Applications in Singapore: Policy Issues and Strategic Thrusts. In: C. Y. Kuo, C. M. L., and K. S. Raman (ed.) *Information Technology and Singapore Society: Trends, Policies and Applications* (pp. 17-28
). Singapore: Singapore University Press.

Kobrin, S. J. (2001). Territoriality and the Governance of Cyberspace. *Journal of International Business Studies*, 32(4), 687-704.

Koh, C. E. and Nam, K. T. (2005). Business Use of the Internet : A Longitudinal Study From A Value Chain Perspective. *Industrial Management and Data Systems*, 105 (1), 85-95.

Koufaris, M. (2002). Applying the Technology Acceptance Model and Flow Theory to Online Consumer Behavior. *Information Systems Research*, 13(2), 205-223.

Kraiser, H. (1958). The Varimax Criterion For Analytic Rotation in Factor Analysis. *Psychometrika*, 23, 187-200.

Krejcie, R. V. and Morgan, D. W. (1970). Determining Sample Size For Research Activities. *Educational and Psychological Measurements,* 30, 607-610.

Krishnan, R., Smith, M. D. and Telang , R. (2003). The Economics of Peer-to-Peer Networks. *Journal of Information Technology Theory*, 5(3), 31-44.

Kumar, V., Mukerji, B., Butt, I. and Persaud, A. (2007). Factors for Successful E-Government Adoption: A Conceptual Framework. *The Electronic Journal of e-Government*, 5(1), 63-76.

Kuo, B. C., Roldan-Bau, A. and Lowinger, R. (2015). Psychological Help-Seeking among Latin American Immigrants in Canada: Testing a Culturally-Expanded Model of the Theory of Reasoned Action Using Path Analysis. *International Journal for the Advancement of Counselling*, 37(2), 179-197.

Labay, D. G. and Kinnear, T. C. (1981). Exploring the Consumer Decision Process in The Adoption of Solar Energy Systems. *Journal of Consumer Research*, 8(3), 271-78.

Ladhari, R. (2010). Developing E-Service Quality Scales: A Literature Review. *Journal of Retailing and Consumer Services*, 17(6), 464-477.

Lai, I. K. W. and Lai, D. C. F. (2013). User Acceptance of Mobile Commerce: An Empirical Study in Macau. *International Journal of Systems Science*, 45(6), 1321-1331.

Lai, I. K. W., Tong, V. W. L. and Lai, D. C. F. (2011). Trust Factors Influencing The Adoption of Internet-based Inter-organizational Systems. *Electronic Commerce Research and Applications*, 10, 85-93.

Lawshe, C. H. (1975). A Quantitative Approach to Content Validity. *Personnel Psychology*, 28, 563-575.

Lean, O. K., Zailani, S., Ramayah, T. and Fernando, Y. (2009). Factors Influencing Intention to Use E-Government Services among Citizens in Malaysia. *International Journal of Information Management*, 29, 458-475.

Lebanidze, E. (2004). *Securing Enterprise Web Applications at The Source: An Application Security Perspective.* Marylamd: The Open Web Application Security Project.

Lederer, A. L., Maupin, D. J., Sena, M. P. and Zhuang, Y. (2000). The Technology Acceptance Model and the World Wide Web. *Decision Support Systems*, 29(3), 269-282.

Lee, C. L. and Lai, S. Q. (2007). Performance Measurement Systems For Knowledge Management in High Technology Industries: A Balanced Scorecard Framework. *International Journal of Technology Management,* 39(1/2), 158-176.

Lee, G.-G. and Lin, H.-F. (2005). Customer Perceptions of E-Service Quality in Online Shopping. *International Journal of Retail and Distribution Management*, 33(2), 161-176.

Lee, J.-H., Kim, H.-D., Ko, Y. J. and Sagas, M. (2011). The Influence of Service Quality on Satisfaction and Intention: A Gender Segmentation Strategy. *Sport Management Review*, 14, 54-63.

Leech, N., Barrett, K. and Morgan, G., A. (2005). *SPSS for Intermediate Statistics: Use and Interpretation*. (2nd). London: Lawrence Erlbaum Associates.

Legris, P., Ingham, J. and Collerette, P. (2003). Why Do People Use Information Technology? A Critical Review of The Technology Acceptance Model. *Information and Management*, 40(3), 191–204.

Lehtinen, U. (1984). On Defining Service. *The XIIth Annual Conference of the European Marketing Academy*. April 1983. Grenoble, France. 873-881.

Leonard-Barton, D. (1986). *Interpersonal Influences on Innovation Adoption within Organizations under Conflictive and Compatible Conditions.* Boston: Harvard Business School.

Leonard-Barton, D. (1988). Implementation Characteristics of Organizational Innovations. *Journal of Communication Research*, 15(5), 603-631.

Li, H. and Liu, Y. (2014). Understanding Post-Adoption Behaviors of E-Service Users in The Context of Online Travel Services. *Information and Management,* 51(8), 1043-1052.

Li, H. and Suomi, R. (2008). Dimensions of E-service Quality: An Alternative Model. *Second International Conference on Future Generation Communication and Networking Symposia*, 13-15 December 2008. Sanya, China, 29-35.

Li, X., Hess, T. J. and Valacich, J. S. (2006). Using Attitude and Social Influence to Develop an Extended Trust Model for Information Systems. *The Data Base for Advances in Information Systems*, 37(2 and 3), 108-124.

Li, Y., Tan, K. and Xie, M. (2002). Measuring Web-based Service Quality. *Total Quality Management,* 13, 685-700.

Liker, J. K. and Sindi, A. A. (1997). User Acceptance of Expert Systems: A Test of The Theory of Reasoned Action. *Journal of Engineering and Technology Management*, 14, 147-173.

Likert, R. (1932). A Technique for the Measurement of Attitudes. *Archives of Psychology*, 22(140), 1–55.

Liljander, V. and Strandvik, T. (1995). The Nature of Customer Relationships in Services. In: Swartz, T., Bowen, D. E. and Brown, S. W. (eds.) *Advances in Services Marketing and Management* (pp. 141-167).Greenwich: JAI Press.

Lin, F., Fofanah, S. S. and Liang, D. (2011). Assessing Citizen Adoption of E-Government Initiatives in Gambia: A Validation of The Technology Acceptance Model in Information Systems Success. *Government Information Quarterly*, 28(2), 271-279.

Linck, K., Pousttchi, K. and Wiedemann, D. G. (2006). Security Issues in Mobile Payment From The Customer Viewpoint. *Proceedings of the 14th European Conference on Information Systems,* 12-14 June 2006. *Gothenburg, Sweden*. 1-12.

Lionberger, H. F. (1959). Community Prestige and The Choice of Sources of Farm Information. *Public Opinion Quarterly*, 23(1), 110-118.

Loiacono, E., Watson, R. and Goodhue, D. (2007). WebQual: An Instrument for Consumer Evaluation of Web Sites. *International Journal of Electronic Commerce*, 11(3), 51-87.

Loonam, M. and O'Loughlin, D. (2008). Exploring E-Service Quality: A Study of Irish Online Banking. *Marketing Intelligence and Planning*, 26(7), 759-780.

Looney, C. A., Akbulut, A. Y. and Poston, R. S. (2006). A Social Cognitive Perspective on Channel Preference: A Study of Online Investing. *Proceedings of the 39th Hawaii International Conference on System Sciences* , 4-7 January 2006. Kauai, USA, 115-122.

Lovelock, C. (1986). Marketing of Services. In: Buell, I. (ed.) *Handbook of Modern Marketing*. Texas: McGraw-Hill

Lovelock, C. (2001). *Services Marketing: People, Technology and Strategy*. Upper Saddle River, New Jersey: Prentice Hall.

Lovelock, C. and Gummesson, E. (2004). Whither Services Marketing? In Search of a New Paradigm and Fresh Perspectives. *Journal of Service Re-search*, 7(1), 20-41.

Lovelock, C. and Wirtz, J. (2006). *Services Marketing*, (6th). Singapore: Prentice Hall.

Lovelock, C., Wirtz, J. and Keh, H. T. (2002). *Services Marketing in Asia: Managing People, technology and Strategy.* Singapore: Prentice Hall.

Lu, J. (2001). Measuring Cost/Benefits of E-Business Applications and Customer Satisfaction. *Proceedings of the 2nd International Web Conference*, 29-30 November 2001. Perth, Australia, 139-147.

Lu, J., Yu, C. S., Liu, C. and Yao, J. E. (2003). Technology Acceptance Model For Wireless Internet. *Internet Research*, 13, 206-222.

Lu, J. and Zhang, G. (2003). Cost Benefit Factor Analysis in E-Services. *International Journal of Service Industry Management,* 14(5), 570-595.

Lucas, H. C. (1975). Performance and The Use of An Information System. *Management Science*, 21, 908-919.

Lucas Jr., H. C. (1975). Behavioral Factors in System Implementation. In: Schultz, R. L. and Slevin, D. P. (eds.) *Implementing Operations Research/Management Science* (pp. 203-216). New York: American Elsevier.

Lucas Jr., H. C. (1978). Empirical Evidence for a Descriptive Model of Implementation. *MIS Quarterly*, 2(2), 27–41.

Luo, M. M.-l., Remus, W. and Chea, S. (2006). Technology Acceptance of Internet - based Information Services: An Integrated Model of TAM and UandG Theory. *Proceedings of the Twelfth Americas Conference on Information Systems*, 4-6 August 2006. Acapulco, Mexico. 1139-1150.

Luo, M. M., Chea, S. and Chen, J.-S. (2011). Web-based Information Service Adoption: A Comparison of The Motivational Model and The Uses and Gratifications Theory. *Decision Support Systems,* 51, 21–30.

Maamri, H. and Triki, A. (2013). Distributors' Knowledge Sharing Competency (DKSC): Scale Generation and Development Process, *Journal of Knowledge Management, Economics and Information Technology*, 3(3), 1-27.

Madu, C. N. and Madu, A. A. (2002). Dimensions of E-quality. *International Journal of Quality and Reliability Management*, 19(3), 246-259.

Mahinda, E. and Whitworth, B. (2006). Published. Using The WOSP Model to Improve End-User Productivity of Information Systems. *International Conference on Business IT (BIZIT 2006): Collaborating with ICT Innovations for Business Survival,* 8 – 10 August 2006. Kuala Lumpur, Malaysia. 1-10.

Maillet, É., Mathieu, L. and Sicotte, C. (2015). Modeling Factors Explaining The Acceptance, Actual Use and Satisfaction of Nurses Using An Electronic Patient Record in Acute Care Settings: An Extension of The UTAUT. *International Journal of Medical Informatics,* 84(1), 36-47.

Manasra, E. A., Zaid, M. K. S. A. and Taher Qutaishat, F. (2013). Investigating the Impact of Website Quality on Consumers' Satisfaction in Jordanian Telecommunication Sector. *Arab Economic and Business Journal*, 8, 31-37.

Mao, E. and Palvia, P. (2006). Testing an Extended Model of IT Acceptance in the Chinese Cultural Context. *The Data Base for Advances in Information Systems*, 37(2 and 3), 20-32.

Marakas, G. and Hornik, S. (1996). Passive Resistance Misuse: Overt Support and Covert Recalcitrance in IS Implementation. *European Journal of Information Systems*, 5(3), 208-220.

Markus, L. (2004). Technology Management: Using IT to Drive Organizational Change. *Journal of Information Technology*, 9(1), 4-20.

Martis, M. S. (2006). Validation of Simulation Based Models: A Theoretical Outlook. *The Electronic Journal of Business Research Methods*, 4 (1), 39 -46.

Maruyama, G. M. (1997). *Basics of Structural Equation Model*. Thousand Oaks, CA: Sage Publications Ltd.

Mathieson, K. (1991). Predicting User Intentions: Comparing The Technology Acceptance Model With The Theory of Planned Behavior. *Information Systems Research*, 2(3), 173–191.

McCarroll, T. (1991). What New Age? *Time Magazine*, 52–54.

McHaney, R. and Cronan, T. P. (1998). Computer Simulation Success: on The Use of The End-User Computing Satisfaction Instrument: A Comment. *Decision Sciences,* 29(2), 525-534.

McKnight, D. H., Choudhury, V. and Kacmar, C. (2002). Developing and Validating Trust Measures for e-Commerce: An Integrative Typology. *Information Systems Research* 13(3), 334-359.

Mcknight, H. D., Choudhury, V. and Kacmar, C. (2002). The Impact of Initial Consumer Trust on Intentions to Transact with A Web Site: A Trust Building Model. *Strategic Information Systems*, 11, 297-323.

Meckovec, R., Bubas, G. and Vrcek, N. (2007). A Method For Improvement of Objectivity of E-Service Quality Evaluation. *Journal of Information and Organizational Sciences,* 31(2), 15-27.

Melone, N. (1990). A Theoretical Assessment of The User-Satisfaction Construct in Information Systems Research. *Management Science,* 36(1), 76–91.

Menon, S. and Kahn, B. E. (2002). Cross-Category Effects of Induced Arousal and Pleasure on the Internet Shopping Experience. *Journal of Retailing*, 78(1), 31-40.

Merz, M. (2002). *E-Commerce und E-Business: Marktmodelle, Anwendungen und Technologien.* (2nd). Heidelberg: Dpunkt Verlag.

Metzger, M. (2004). Privacy, Trust, and Disclosure: Exploring Barriers to Electronic Commerce. *Journal of Computer-Mediated Communication*, 9(4), 1083-6101.

Misbah, Z., Gulikers, J., Maulana, R. and Mulder, M. (2015). Teacher Interpersonal Behaviour and Student Motivation in Competence-based Vocational Education: Evidence from Indonesia. *Teaching and Teacher Education*, 50, 79-89.

Mittal, V. and Tsiros, M. (2007). Customer Loyalty in Electronically Mediated Environments. *Journal of Value Chain Management*, 1(1/2), 80-109.

Mohamad, L., Rosli, K. and Ahmi, A. (2011). Awareness and Adoption of University Smart Card: The Case of UUM. *Journal for the Advancement of Science and Arts*, 2(1), 40-55.

Mohr, L. A. and Bitner, M. J. (1995). The Role of Employee Effort in Satisfaction with Service Transactions. *Journal of Business Research*, 32(3), 239-252.

Montesdioca, G. P. Z. and Maçada, A. C. G. (2015). Measuring User Satisfaction with Information Security Practices. *Computers and Security,* 48(February), 267-280.

Moore, N. (2006). *How to Do Research: A Practical Guide to Designing and Managing Research Projects.* (3rd). London: Wiltshire: Facet Publishing.

Morency, J. (2000). Ready to Shift to An ASP? *Communications News*, 37(6), 88–90.

Morgan, R. and Hunt, S. D. (1994). The Commitment Trust Theory of Relationship Marketing. *Journal of Marketing,* 58(3), 20-38.

Mort, P. R. and Cornell, F. G. (1983). *Adaptability of Public School Systems*.New York: Columbia University Teachers College Bureau of Publications.

Mosbeh, R. and Soliman, K. S. (2008). An Exploratory Analysis of Factors Affecting Users' Adoption of Corporate Intranet; A Tunisian Study. *Management Research News,* 31(5), 375-385.

Muk, A. and Chung, C. (2015). Applying The Technology Acceptance Model in A Two-Country Study of SMS Advertising. *Journal of Business Research*, 68(1), 1-6.

Muthitacharoen, A., Plavia, P., Brooks, L., Krishnan, B., Otondo, R. and Retzlaff-Robert, D. (2006). Reexamining Technology Acceptance in Online Task Behaviors. *Electronic Markets*, 16(1), 4-15.

Muylle, S., Moenert, R. and Despontin, M. (2004). The Conceptualization and Empirical Validation of Website User Satisfaction. *Information and Management*, 41, 543-560.

Nawi, H, S, A., Ibrahim, O., and Rahman, A, A. (2013). Public E-service Sustainability Failure Factors: Project Stakeholders' Views. *Journal of Information Systems Research and Innovation,* 4, 75-83.

Negash, S., Ryan, T. and Igbariab, M. (2003). Quality and Effectiveness in Webbased Customer Support Systems. *Information and Management*, 40, 757-768.

Nickerson, R. S. (1981). Why Interactive Computer Systems Are Sometimes Not Used by People Who Might Benefit from Them. *International Journal of Man-Machine Studies,* 15, 469-483.

NIST Special Publication 800-16. (1998). Information Technology Security Training Requirements: A Role-and Performance-Based Model. In: Wilson, M., Zafra, D., Pitcher, S. I., Tressler, J. D. and Ippolito, J. B. (eds.). *Comuter Security,* Gaithersburg: National Institute of Standards and Technology.

Novak, T. P., Hoffman, D. L. and Yung, Y. F. (1999). Measuring the Customer Experience in Online Environments: A Structural Modeling Approach. *Marketing Science,* 19(1), 22- 42.

Nunnally, J. (1978). *Psychometric Theory.* (2nd). New York: McGraw-Hill.

Nysveen, H., Pedersen, P. E. and Thorbjornsen, H. (2005). Explaining Intention to Use Mobile Chat Services: Moderating Effects of Gender. *Journal of Consumer Marketing,* 22, 247-256.

Nysveen, H., Pedersen, P. E. and Thorbjornsen, H. (2005). Intentions to Use Mobile Services: Antecedents and Cross-Service Comparisons. *Academy of Marketing Science*, 33, 330-346.

Ok, S.-J. and Shon, J.-H. (2006). The Determinant of Internet Banking Usage Behavior in Korea: A Comparison of Two Theoretical Models. *Journal Organizational Computing and Electronic Commerce,* 15(3), 203-222.

Oliver, R. L. (1980). A Cognitive Model of The Antecedents and Consequences of Satisfaction Decisions. *Journal of Marketing Research*, 17(4), 460–469.

Oliver, R. L. (1997). *Satisfaction: A Behavioral Perspective on the Consumer.* New York: McGraw-Hill.

Oliver., R. L. (1999). Whence Consumer Loyalty? *Journal of Marketing*, 63(4), 33-44.

Osbourne, J. A. and Clarke, M. (2006). Factors Motivating the Acceptance of New Information and Communication Technologies in UK Healthcare: A Test of Three Models. *International Journal of Healthcare Information Systems and Informatics*, 1, 29-39.

Ostlund, L. E. (1973). Perceived Innovation Attributes as Predictors of Innovativeness. *Journal of Consumer Research*, 1(2), 23-29.

Othman , M, K., Yasin, N, M., and Samelan, N, A. (2012). Factors Influencing the Adoption of E-Services in Malaysia. *UM Repository.* Retrieved June 10, 2012 *http://repository.um.edu.my/27098/*

Özer, G. and Yilmaz, E. (2011). Comparison of the Theory of Reasoned Action and The Theory of Planned Behavior: An Application on Accountants' Information Technology Usage. *African Journal of Business Management* 5(1), 50-58.

Palmer, J. W. (2002). Web Site Usability, Design and Performance Metrics. *Information Systems Research,* 13(2), 151-167.

Panko, R. (1991). Is Office Productivity Stagnant. *MIS Quarterly,* 15(2), 191-204.

Parasuraman, A., Berry, L. L. and Zeithaml, V. A. (1991). Refinement and Reassessment of the SERVQUAL Scale. *Journal of Retailing*, 67(4), 420-450.

Parasuraman, A., Zeithaml, V. A. and Berry, L. L. (1988). SERVQUAL: A Multi-Item Scale For Measuring Consumer Perceptions of Service Quality. *Journal of Retailing,* 64, 2-40.

Parasuraman, A., Zeithaml, V. A. and Malhotra, A. (2005). E-S-QUAL: A Multiple-Item Scale For Assessing Electronic Service Quality. *Journal of Service Research*, 7(3), 213-234.

Pavlichev, A. and Garson, G. D. (2003). *Digital Government: Principles and Best Practices.* London: IGI Global.

Pavlou, P. (2003). Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with The Technology Acceptance Model. *International Journal of Electronic Commerce,* 7, 69–103.

Pedersen, P. E. (2005). Adoption of Mobile Internet Services: An Exploratory Study of Mobile Commerce Early Adopters. *Journal of Organizational Computing and Electronic Commerce*, 15(2), 203-222.

Pedersen, P. E. and Ling, R. (2003). Modifying Adoption Research For Mobile Internet Service Adoption: Cross-Disciplinary Interactions. *The 36th Hawaii International Conference on System Sciences (HICSS'03),* 6-9 January 2003. Hawaii, 90-91.

Pedersen, P. E. and Nysveen, H. (2002). Using the Theory of Planned Behavior to Explain Teenagers' Adoption of Text Messaging Services. Working Paper, *Agder University College.*1-39.

Pett, M. A., Lackey, N. R. and Sullivan, J. J. (2003). *Making Sense of Factor Analysis: The Use of Factor Analysis For Instrument Development in Health Care Research.* California: Sage Publications Inc.

Pikkarainen, T., Pikkarainen, K., and, H. K. and Pahnila, S. (2004). Consumer Acceptance of Online Banking: An Extension of The Technology Acceptance Model. *Internet Research*, 14(3), 224-235.

Pinto, J. and Mantel, S. (1990). The Causes of Project Failure. *IEEE Transactions on Engineering Management*, 37(4), 269-267.

Prahalad, C. K. and Ramaswamy, V. (2004). *The Future of Competition: Co-Creating Unique Value with Customers.* Boston: Harvard Business School Press.

Premkumar, G. and Bhattacherjee, A. (2008). Explaining Information Technology Usage: A Test of Competing Models. *Omega*, 36, 64-75.

Raan Nelson, R., Michael W, K. and Cheney, P. H. (1991). An Empirical Re-Examination of the Relationship among Training, Ability, and the Acceptance of Information Technology. *SIGCPR '91 Proceedings of the 1991 Conference on Information Systems in Personnel Interface.* 8-9 April 1991. Athens, USA. 177-186.

Ramasubbu, N., Mithas, S. and Krishnan, M. (2008). High Tech, High Touch: The Effect of Employee Skills and Customer Heterogeneity on Customer Satisfaction with Enterprise System Support Services. *Decision Support Systems*, 44(2), 509-523.

Rana, N. P. and Dwivedi, Y. K. (2015). Citizen's Adoption of An E-Government System: Validating Extended Social Cognitive Theory (SCT). *Government Information Quarterly,* 32(2), 172-181.

Reynolds, J. (2000). *The Complete E-Commerce Book: Design, Build and Maintain a Successful Web-Based Business.* New York: CMP Books.

Ribbink, D., van Riel, A. C. R., Liljander, V. and Treukens, S. (2004). Comfort your Online Customer: Quality, Trust and Loyalty on the Internet. *Managing Service Quality,* 14(6), 446-456.

Riel, A. C. R. v., Semeijn, J. and Pauwels, P. (2003). Online Travel Service Quality: The Importance of Pre-transaction Services. *Total Quality Management*, 15(4), 475-493.

Rietveld, T. and Van Hout, R. (1993). *Statistical Techniques for the Study of Language and Language Behaviour.* Berlin: Mouton de Gruyter.

Rivard, S., Poirier, G., Raymond, L. and Bergeron, F. (1997). Development of a Measure to Assess the Quality of User-Developed Applications. *The DATA BASE for Advances in Information Systems,* 28(3), 44-58.

Robertson, D. C. (1988). *Social Determinants of Information Systems Use: A Network Anayltic Approach.* Massachusetts: Center for Information Systems Research, Massachusetts Institute of Technology.

Robey, D. (1979). User Attitudes and Management Information System Use. *Academyo f Management Journal of Academy of Marketing Science,* 22(3), 466-474.

Robinson, J. (2009). *Triandis Theory of Interpersonal Behaviour in Understanding Software Privace Behaviour in the South African Context.* Msc. University of the Witwatersrand.

Robson, C. (2002). *Real World Research.* (2nd). Oxford: Blackwell.

Rogers, E. M. (1962). *Diffusion of Innovations.* Glencoe: Free Press.

Rogers, E. M. (2003). *Diffusion of Innovations.* (5 th). New York: Free Press.

Rotchanakitumnuai, S. and Speece, M. (2004). Business Value of Thai Internet Banking Services: The Corporate Customers' Perspectives. *Journal of Electronic Commerce Research,* 5(4), 270-286.

Rowley, J. (2006). An Analysis of the E-service Literature: towards A Research Agenda. *Internet Research*, 16(3), 339-359.

Rust, R., Zeithaml, V. and Lemon, K. (2000). *Driving Customer Equity: How Customer Lifetime Value is Reshaping Corporate Strategy.* New York: Free Press.

Rust, R. T. (2004). If Everything is Service, Why is This Happening Now and What Difference Does It Make?, *Journal of Marketing*, 69, 23-24.

Rust, R. T. and Kannan, P. K. (2002). *e-Service: New Direction in Theory and Practice.* New York: ME Sharpe Inc.

Rust, R. T. and Kannan, P. K. (2003). E-Service: A New Paradigm for Business in the Electronic Environment. *Communication of the ACM*, 46(6), 36-42.

Rust, R. T. and Lemon, K. N. (2001). e-Service and the Consumer. *International Journal of Electronic Commerce,* 5(3), 85-101.

Ruyter, K. d., Wetzels, M. and Kleijnen, M. (2001). Customer Adoption of E-Service: An Experimental Study. *International Journal of Service Industry Management,* 12(2), 184-207.

Ryan, B. and Gross, N. C. (1967). The Diffusion of Hybrid Seed Corn in Two Iowa Communities. *Rural Sociology,* 8(1), 15-29.

Saaty, T. L. (1980). *The Analytic Hierarchy Process: Planning, Priority Setting, Resources Allocation.* London: McGraw-Hill.

Saha, P., Nath, A. and Salehi-Sangari, E. (2010). Success of Government E-Service Delivery: Does Satisfaction Matter?, *Lecture Notes in Computer Science,* 6228, 204-215.

Salisbury, W. D., Pearson, R. A., Pearson, A. W. and Miller, D. W. (2001). Perceived Security and World Wide Web Purchase Intention. *Industrial Management and Data Systems,* 101(4), 165-176.

Sandhu, K. (2008a). Factors for E-Services System Acceptance: A Multivariate Analysis. In T. Sobh (ed.) *Advances in Computer and Information Sciences and Engineering*, 230-235. Springer.

Sandhu, K. (2008b). Theoretical Perspectives for e-Services Acceptance Model. In T. Sobh (ed.) *Advances in Computer and Information Sciences and Engineering*, 218-223. Springer.

Sandhu, K. and Corbitt, B. J. (2002). Assessing Web-Based Electronic Services Adoption Model (E-SAM). *7th Pacific Asia Conference on Information Systems,* 10-13 July 2003. Adelaide, South Australia, 420-432.

Santos, J. (2003). E-service Quality: A Model of Virtual Service Quality Dimensions. *Managing Service Quality*, 13(3), 233–246.

Saraph, J. V., Benson, P. G. and Schroeder, R. G. (1989). An Instrument For Measuring The Critical Factors of Quality Management. *Decision Sciences*, 20(4), 810–829.

Sathye, M. (1999). Adoption of Internet Banking by Australian Consumers: An Empirical Investigation. *International Journal of Bank Marketing*, 17(7), 324-334.

Saunders, M., Lewis, P. and Thornhill, A. (2009). *Research Methods For Business Students.* (5th). Singapore: Prentice Hall.

Saxe, R. and Weitx, B. A. (1982). The SOCO Scale: A Measure of the Customer Orientation of Sales people. *Journal of Marketing,* 19(August), 343-351.

Schein, E. H. (1992). *The Role of the CEO in the Management of Change: The Case of Information Technology, Transforming Organizations*. UK: Oxford University Press.

Schmerken, I. (2000). Financial ASPs Deliver Apps on Tap. *Wall Street and Technology,* 18(5), 46–54.

Scupola, A. and Nicolajsen, H. W. (2011). A Study of E-services Adoption Factors. *Emerging Themes in Information Systems and Organization Studies*, 169-179.

Seddon, P. (1997). A Respecification and Extension of the DeLone and McLean Model of IS Success. *Information System Research,* 8(3), 240–253.

Semeijn, J., Riel, A. C, Birgelen, M. J. and Streukens, S. (2005). E-services and Offline Fulfilment: How E-Loyalty Is Created. *Managing Service Quality*, 15(2), 182-194.

Seneler, C. O., Basoglu, N. and Daim, T. U. (2010). An Empirical Analysis of The Antecedents of Adoption of Online Services; A Prototype-Based Framework. *Journal of Enterprise Information Management*, 23(4), 417-438.

Shachaf, P. and Oltmann, S. M. (2007). E-quality and E-Service Equality. *Proceedings of the 40th Hawaii International Conference on System Sciences,* 3-6 Jan 2007. Hawaii, 247-261.

Shankar, V., Smith, A. and Rangaswamy, A. (2003). Customer Satisfaction and Loyalty in Online and Offline Environments. *International Journal of Research in Marketing*, 20(2), 153–175.

Shareef, M. A., Kumar, U., Kumar, V. and Dwivedi, Y. K. (2009). Identifying Critical Factors For Adoption of E-Government. *Electronic Government: An International Journal,* 6(1), 70-96.

Shareef, M. A., Kumar, V., Kumar, U. and Dwivedi, Y. K. (2011). e-Government Adoption Model (GAM): Differing Service Maturity Levels. *Government Information Quarterly,* 28, 17-35.

Sharma, A. (2007). Opportunities of International E-Services: A Conceptual Model *Journal of Value Chain Management,* 1(1/2), 64-77.

Sheikhshoaei, F. and Oloumi, T. (2011). Applying the Technology Acceptance Model to Iranian Engineering Faculty Libraries. *The Electronic Library*, 29(3), 367-378.

Sheng, T. and Liu, C. (2010). An Empirical Study on The Effect of E-Service Quality on Online Customer Satisfaction and Loyalty. *Nankai Business Review International,* 1(3), 273-283.

Sheppard, B. H., Hartwick, J. and Warshaw, P. (1988). A Theory of Reasoned Action: A Meta-Analysis of Past Research with Recommendations For Modification and Future Research. *Journal of Consumer Research*, 15, 325–343.

Sheth, J. N. and Sharma, A. (2007). E-Services: A Framework for Growth. *Journal of Value Chain Management,* 1(1/2), 8-12.

Sheth, J. N., Sisodia, R. S. and Sharma, A. (2000). The Antecedents and Consequences of Customer-Centric Marketing. *Journal of the Academy of Marketing Science*, 28(1), 55-66.

Shields, P. M. and Tajalli, H. (2006). Intermediate Theory: The Missing Link in Successful Student Scholarship. *Journal of Public Affairs Education*, 12(3), 313-334.

Shih, H.-P. (2004). Extended Technology Acceptance Model of Internet Utilization Behavior. *Information and Management,* 41, 719-729.

Shin, D.-H. (2010). The Effects of Trust, Security and Privacy in Social Networking: A Security-based Approach to Understand The Pattern of Adoption. *Interacting with Computers,* 22, 428-438.

Shneiderman, B. (2000). Designing Trust into Online Experiences. *Communication of ACM,* 43(12), 57–59.

Shostack, G. L. (1977). Breaking Free from Product Marketing. *Journal of Marketing*, 41, 73-80.

Sila, I. (2015). The State of Empirical Research on The Adoption and Diffusion of Business-to-Business E-Commerce. *International Journal of Electronic Business*, 12(3), 258-301.

Simon, B. (2001). *Wissensmedien im Bildungssektor: Eine Akzeptanzuntersuchung an Hochschulen (Knowledge media in the education system: acceptance research in universities)*. PhD*,* Vienna University of Economics and Business.

Singh, J. and Sirdeshmukh, D. (2000). Agency and Trust Mechanisms in Consumer Satisfaction and Loyalty Judgments. *Journal of Academy of Marketing Science*, 28(1), 150-167.

Slack, N., Chambers, S. and Johnston, R. (2004). *Operations Management.* (4th). Harlow, England: Prentice Hall Financial Times.

Smith, A. G. (2001). Applying Evaluation Criteria to New Zealand Government Web Sites. *International Journal of Information Management*, 21, 137-149.

Sohn, C. and Tadisina, S. K. (2008). Development of E-Service Quality Measure For Internet-based Financial Institutions. *Total Quality Management and Business Excellence,* 19(9), 903-918.

Solomon, M. R., Suprenant, C., Czepiel, J. A. and Gutman, E. G. (1985). A Role Theory Perspective on Dyadic Interactions: The Service Encounter. *Journal of Marketing*, 48, 99-111.

Somekh, B. and Lewin, C. (2011). *Theory and Methods in Social Research.* (2nd) London: SAGE.

Spreng, R. A., Mackenzie, S. B. and Olshavsky, R. W. (1996). A Re-Examination of The Determinants of Consumer Research. *Journal of Marketing,* 60(3), 15-32.

Srinivasan, S. S., Anderson, R. and Ponnavolu, K. (2002). Customer Loyalty in E-Commerce: An Exploration of Its Antecedents and Consequences. *Journal of Retailing,* 78(1), 41-50.

Stats, I. W. (2015). *Internet Users.* Retrieved on 30 November, 2015, from http://www.Internet worldstats.com/stats.htm.

Stephanie, A. J., Abdul Nasir, Z. and Nur Fadziana, F. M. (2008). A Study on the Acceptance of E-Ticketing in Universiti Utara Malaysia Bus Service. *Knowledge Management International Conference*. 10-12 June 2008. Langkawi, Malaysia, 537-542.

Stevens, J. (2001). *Applied Multivariate Statistics For The Social Sciences.* (3rd) Mahwah, NJ: Lawrence Erlbaum.

Stiglingh, M. (2014). A Measuring Instrument to Evaluate E-Service Quality in Arevenue Authority Setting. *Public Relations Review,* 40, 216-225.

Straub, D., Boudreau, M.-C. and Gefen, D. (2004). Validation Guidelines for IS Positivist Research. *Communications of the Association for Information Systems,* 13, 380-427.

Subramanian, N., Gunasekaran, A., Yu, J., Cheng, J. and Ning, K. (2014). Customer Satisfaction and Competitiveness in The Chinese E-Retailing: Structural Equation Modeling (SEM) Approach to Identify The Role of Quality Factors. *Expert Systems with Applications,* 41, 69-80.

Suki, N. M. (2014). Passenger Satisfaction with Airline Service Quality in Malaysia: A Structural Equation Modeling Approach. *Research in Transportation Business and Management,* 10, 26-32.

Sullivan, J. R. and Walstrom, K. A. (2001). Consumer Perspectives on Service Quality of Electronic Commerce Web Sites. *Journal of Computer Information Systems,* 41(8-14).

Sun, H. and Zhang, P. (2006). The Role of Moderating Factors in User Technology Acceptance. *International Journal of Human-Computer Studies*, 64, 53-78.

Surjadaja, H., Ghosh, S. and Antony, F. (2003). Determining and Assessing The Determinants of E-Service Operations. *Managing Service Quality*, 13(1), 39-44.

Swanson, E. B. (1982). Measuring User Attitudes in MIS Research: A Review. *Omega,* 10(2), 157-165.

Swanson, E. B. (1988). *Information System Implementation: Bridging The Gap Between Design and Utilization.* Homewood, Illinois: Irwin.

Szajna, B. (1996). Empirical Evaluation of The Revised Technology Acceptance Model. *Management Science*, 42(1), 85-92.

Szymanski, D. M. and Hise, R. T. (2000). E-satisfaction: An Initial Examination. *Journal of Retailing*, 76(3), 309–322.

Taherdoost, H., Sahibuddin, S. and Jalaliyoon, N. (2011). Smart Card Security; Technology and Adoption. *International Journal of Security*, 5(2), 74-84.

Tan, K. C., Xie, M. and Li, Y. N. (2003). A Service Quality Framework For Web-Based Information Systems. *The TQM Magazine*, 15(3), 164-172.

Taylor, S. and Todd, P. (1995a). Assessing IT Usage: The Role of Prior Experience. *MIS Quarterly,* 19(4), 561–570.

Taylor, S. and Todd, P. (1995b). Understanding Information Technology Usage: A Test of Competing Models. *Information Systems Research*, 6(2), 144-176.

Thomas, B., Basil, M., Christina, M., Fedra, K. and Manuela, T. (2013). Measuring Users Satisfaction of an e-Government portal. *Procedia Technology*, 8, 371-377.

Thompson, B. (2004). *Exploratory and Confirmatory Factor Analysis: Understanding Concepts and Applications.* Washington: American Psychological Association.

Thompson, R. L., Higgins, C. A. and Howell, J. M. (1991). Personal computing: Toward A Conceptual Model of Utilization. *MIS Quarterly*, 15(1), 124-143.

Todorov, D. (2011). *Authentication, Authorization, and Accounting; Information Systems Security.* Retrieved 2 February, 2011, from *http://www.infosectoday.com /Articles/Authentication.htm*.

Tojib, D. R., Sugianto, L.-F. and Sendjaya, S. (2006). A Conceptual Model for B2E Portal User Satisfaction. *Proceedings of the International Conference on Business and Information,* 12-14 July 2006, Singapore, 1-17.

Torkzadeh, G. and Dhillon, G. (2002). Measuring Factors That Influence The Success of Internet Commerce. *Information Systems Research*, 13(2), 187–204.

Torre, J. and Moxon, R. (2001). E-commerce and Global Business: The Impact of The Information and Communication Technology Revolution on The Conduct of International Business. *Journal of International Business Studies*, 32(4), 617-639.

Triandis, H. C. (1977). *Interpersonal Behavior.* Monterey, CA: Brooks/Cole.

Triandis, H. C. (1980). Values, Attitudes, and Interpersonal Behavior. In: Howe, H. E. and Page, M. M. (eds.) *Nebraska Symposium on Motivation 1979* (pp.195-259). Lincoln, Nebraska: University of Nebraska Press.

Tsai, H.-T., Huang, H.-C., Jaw, Y.-L. and Chen, W.-K. (2006). Why On-Line Customers Remain With A Particular E-Retailer: An Integrative Model and Empirical Evidence. *Psychology and Marketing*, 23(5), 447-464.

Tsiotsou, R. H. and Wirtz, J. (2012). Consumer Behavior in a Service Context. In: Wells, V. and Foxall, G. (eds.) Handbook of New Developments in Consumer Behavior UK: Edward Elgar Publishing Ltd.

Turowski, K. and Pousttchi, K. (2004). *Mobile Commerce, Grundlagen und Techniken.* Heidelberg: Springer.

Udo, G. J., Bagchi, K. K. and Kirs, P. J. (2010). An Assessment of Customers' E-Service Quality Perception, Satisfaction and Intention. International Journal of *Information Management*, 30, 481-492.

Udo, G. J., Bagchi, K. K. and Kirs, P. J. (2012). Exploring the Role of Espoused Values on E-Service Adoption: A Comparative Analysis of the US and Nigerian Users. *Computers in Human Behavior*, 28(5), 1768-1781.

Ungar, L. H. and Foster, D. P. (1998). Clustering Methods For Collaborative Filtering. *Proceedings of the 1998 Workshop on Recommender Systems*, 26-27 July 1998, Menlo Park, California, 114-129.

Vallerand, R. J. (1997). Toward a Hierarchical Model of Intrinsic and Extrinsic Motivation. In: Zanna, M. (ed.) *Advances in Experimental Social Psychology* (pp. 271-360). New York: Academic Press.

Van Riel, A. C. R., Liljander, V. and Jurriëns, P. (2001). Exploring Consumer Evaluations of E-Services: A Portal Site. *International Journal of Service Industry Management,* 12(4), 359–377.

Vargo, S. L. and Lusch, R. F. (2004a). Evolving to a New Dominant Logic for Marketing. *Journal of Marketing*, 68(1), 1-17.

Vargo, S. L. and Lusch, R. F. (2004b). The Four Service Marketing Myths: Remnants of a Goods-Based, Manufacturing Model. *Journal of Service Research,* 6(4), 324-335.

Vassilakis, C., Lepouras, G., Fraser, J., Haston, S. and Georgiadis, P. (2005). Barriers to Electronic Service Development. *e-Service Journal*, 4(1), 41–65.

Venkatesh, V. (2000). Determinants of Perceived Ease of Use: Integrating Control, Intrinsic Motivation, and Emotion into the Technology Acceptance Model. *Information Systems Research*, 11(4), 342-365.

Venkatesh, V. and Brown, S. (2001). A Longitudinal Investigation of Personal Computers in Homes: Adoption Determinants and Emerging Challenges. *MIS Quarterly*, 25(1), 71-102.

Venkatesh, V. and Davis, F. D. (2000). A Theoretical Extension of The Technology Acceptance Model: Four Longitudinal Field Studie. *Management Science*, 46(2), 186–204.

Venkatesh, V., Morris, M., Sykes, T. and Ackerman, P. (2004). Individual Reactions to New Technologies in The Workplace: The Role of Gender as A Psychological Construct. *Journal of Applied Social Psychology*, 34(3), 445–467.

Venkatesh, V., Morris, M. G., Davis, G. B. and Davis, E. D. (2003). User Acceptance of Information Technology: Towards A Unified View. *MIS Quarterly*, 27(3), 425-478.

Venkatesh, V., Thong, J. Y. L. and Xu, X. (2012). Consumer Acceptance and Use of Information Technology: Extending The Unified Theory of Acceptance and Use of Technology. *MIS Quarterly,* 36(1), 157-178.

Verdegem, P. and Verleye, G. (2009). User-centered e-Government in Practice: A Comprehensive Model For Measuring User Satisfaction. *Government Information Quarterly*, 26, 487-497.

Verhoef, P. and Langerak, J. (2001). Possible Determinants of Consumers' Adoption of Electronic Grocery Shopping in The Netherlands. *Journal of Retailing and Consumer Services*, 8, 275-285.

Vijayasarathy, L. R. (2004). Predicting Consumer Intentions to Use On-Line Shopping: The Case For An Augmented Technology Acceptance Model. *Information and Management*, 41(6), 747-762.

Viswanathan, S. (2005). Competing across Technology-Differentiated Channels: The Impact of Network Externalities and Switching Costs. *Management Science*, 51(3), 483-496.

Wan, H. (2000). Opportunities to Enhance A Commercial Web Site. *Information and Management,* 38(1), 15-21.

Wang, H., Xie, M. and Goh, T. N. (1999). Service Quality of Internet Search Engines. *Journal of Information Science Communications,* 76(3), 499-507.

Wang, R. Y. and Strong, D. M. (1996). Beyond Accuracy: What Data Quality Means to Data Consumers. *Journal of Management Information Systems,* 5-33.

Wang, S., Archer, N. and Zheng, W. (2006). An Exploratory Study of Electronic Marketplace Adoption: A Multiple Perspectives View. *Electronic Markets*, 16(4), 337-348.

Watson, R. P., Leyland, P. F., Berthon, P. and Zinkham, G. M. (2002). U-Commerce: Expanding the Universe of Marketing. *Journal of the Academy of Marketing Science*, 30(4), 333-347.

Wee, Y. S. and Quazi, H. A. (2005). Development and Validation of Critical Factors of Environmental Management. *Industrial Management and Data Systems,* 105(1), 96-114.

Weippl, E. R. (2005). In-depth Tutorials: Security in e-learning. *eLearn Magazine*. 3(3), 3-10.

Westin, A. F. (2001). Opinion Surveys: What Consumers Have to Say about Information Privacy. Prepared Witness Testimony, *The House Committee on Energy and Commerce,* W.J. Billy Tauzin, Chairman, 1-42.

White, K. M., Jimmieson, N. L., Obst, P. L., Graves, N., Barnett, A., Cockshaw, W., Gee, P., Haneman, L., Page, K. and Campbell, M. (2015). Using A Theory of Planned Behaviour Framework to Explore Hand Hygiene Beliefs at The '5 Critical Moments' among Australian Hospital-Based Nurses. *BMC Health Services Research*, 15(1), 59-83.

Whitley, B. E. (2002). *Principals of Research and Behavioral Science*. Boston: McGraw-Hill.

Wilkening, E. A. (1958). Joint Decision-Making in Farm Families: A Function of Status and Role. *American Sociological Review*, 23, 187-92.

Wilson, J. (2010). *Essentials of Business Research: A Guide to Doing Your Research Project.* London: SAGE Publication.

Winsted, K. F. (1997). The Service Experience in Two Cultures: A Behavioral Perspective. *Journal of Retailing,* 73(3), 337-360.

Wixom, B. H. and Todd, P. A. (2005). A Theoretical Integration of User Satisfaction and Technology Acceptance. *Information System Research*, 16(1), 85-102.

Wolfinbarger, M. and Gilly, M. C. (2003). Etailq: Dimensionalizing, Measuring and Predicting Etail Quality. *Journal of Retailing*, 79(3), 183-198.

Wu, J. H. and Wang, S. C. (2005). What Drives Mobile Commerce? An Empirical Evaluation of The Revised Technology Acceptance Model. *Information and Management*, 42, 719–729.

Wu, Y.-L., Tao, Y.-H. and Yang, P.-C. (2008). The Use of Unified Theory of Acceptance and Use of Technology to Confer The Behavioral Model of 3G Mobile Telecommunication Users. *Journal of Statistics and Management Systems*, 11(5), 919-949.

Xiao, L. and Dasgupta, S. (2005). User Satisfaction with Web Portals: An Empirical Study. In: Gao, Y. (ed.) *Web Systems Design and Online Consumer Behavior* (pp.192-204), Hershey, PA: Idea Group Publishing.

Yang, Z., Cai, S., Zhou, Z. and Zhou, N. (2005). Development and Validation of An Instrument to Measure User Perceived Service Quality of Information Presenting Web Portals. *Information and Management,* 42, 575–589.

Yang , Z. and Jun, M. (2002). Consumer Perception of E-Service Quality: From Internet Purchaser and Non-Purchaser Perspectives. *Journal of Business Strategies Huntsville,* 19(1), 19-41.

Yang, Z., Peterson, R. T. and Cai, S. (2003). Services Quality Dimension of Internet Retailing: An Exploratory Analysis. *Journal of Services Marketing Science*, 17(7), 685-690.

Yang, Z., Peterson, R. T. and Huang, L. (2001). Taking the Pulse of Internet Pharmacies. *Marketing Health Services*, 21(2), 5-10.

Yaya, L. H. P., Marimon, F. and Fa, M. C. (2012). Assessing E-Services Quality: The Current State of E-S-QUAL. *Total Quality Management and Business Excellence*, 23(12), 1363-1378.

Yee, G. (2006). Personalized Security for E-Services. *Proceedings of the First International Conference on Availability, Reliability and Security*, 20-22 April 2006. Washington DC, USA, 140-147.

Yenisey, M. M., Ozok, A. A. and Salvendy, G. (2005). Perceived Security Determinants in Ecommerce among Turkish University students. *Behaviour and Information Technology,* 24(4), 259-274.

Yi, M., Jackson, J., Park, J. and Probst, J. (2006). Understanding Information Technology Acceptance by Individual Professionals: Towards an Integrative View. *Information and Management,* 43, 350-363.

Yin, R. K. (2003). *Case Study Research, Design and Methods.* Newbury Park, CA: SAGE.

Yong, L. and Jing, Z. (2006). Research on Information Integrated Management in Social E-service. *IEEE International Conference on Systems, Man, and Cybernetics,* 8-11 October 2006, Taipei, Taiwan.

Yoo, B. and Donthu, N. (2001). Developing a Scale to Measure Perceived Quality of An Internet Shopping Site (SITEQUAL). *Quarterly Journal of Electronic Commerce,* 2(1), 31-46.

Yoon, C. (2010). Antecedents of Customer Satisfaction with Online Banking in China: The Effects of Experience. *Computers in Human Behavior*, 26, 1296-1304.

Yu, J., Ha, I., Choi, M. and Rho, J. (2005). Extending the TAM for a T-Commerce. *Information and Management,* 42, 965–976.

Zavareh, F. B., Ariff, M. S. M., Jusoh, A., Zakuan, N., Bahari, A. Z. and Ashourian, M. (2012). e-Service Quality Dimensions and Their Effects on E-Customer Satisfaction in Internet Banking Services. *Procedia - Social and Behavioral Sciences,* 40, 441-445.

Zeithaml, V. (2002). *Services Marketing.* New York: McGraw-Hill.

Zeithaml, V. and Bitner, M. J. (2003). *Services Marketing. Integrating Customer Focus across the Firm.* (3rd). New York: McGraw-Hill.

Zeithaml, V. A., Berry, L. L. and Parasuraman, A. (1996). The Behavioral Consequences of Service Quality. *Journal of Marketing Research*, 60(2), 31–46.

Zeithaml, V. A., Parasuraman, A. and Berry, L. L. (1985). Problems and Strategies in Services Marketing. *Journal of Marketing*, 49(2), 33-46.

Zeithaml, V. A., Parasuraman, A. and Berry, L. L. (1990). *Delivering Service Quality: Balancing Customer Perceptions and Expectations.* New York: Free Press.

Zeithaml, V. A., Parasuraman, A. and Malhotra, A. (2000). A Conceptual Framework For Understanding E-Service Quality: Implications For Future Research and Managerial Practice. *MSI Working Paper Series,* Report No. 00-115, Cambridge., 1-49.

Zeithaml, V. A., Parasuraman, A. and Malhotra, A. (2002). Service Quality Delivery Through Web Sites: A Critical Review of Extant Knowledge. *Journal of the Academy of Marketing Science*, 30(4), 362-375.

Zhang, X. and Prybutok, V. (2005). A Consumer Perspective of E-Service Quality. *IEEE Transactions on Engineering Management*, 52(4), 461–477.

Zhang, X., Prybutok, V. and Huang, A. (2006). An Empirical Study of Factors Affecting E-Service Satisfaction. *Human Systems Management,* 25, 279–291.

Zhang, Y., Deng, X., Wei, D. and Deng, Y. (2012). Assessment of E-Commerce Security Using AHP and Evidential Reasoning. *Expert Systems with Applications,* 39, 3611-3623.

Zhang, M. (2013). Understanding IT Value: A Multilevel, Complex, and Adaptive System Perspective. *In Pacific Asia Conference on Information Systems*, 18-22 June 2013, Jeju, South Korea, 1-11.

Zhou, T. (2011). The Impact of Privacy Concern on User Adoption of Location-Based Services. *Industrial Management and Data Systems*, 111(2), 212-226.

Zikmund (2002). *Business Research Methods.* (7th). Dryden: Thomson Learning.