UNIVERSITI PUTRA MALAYSIA

FACTORS THAT INFLUENCE INDIVIDUAL UTILISATION OF INTERNET PAYMENT SYSTEMS

MUHAMAD SADE BIN MOHAMAD AMIN

GSM 2018 25

FACTORS THAT INFLUENCE INDIVIDUAL UTILISATION OF INTERNET PAYMENT SYSTEMS

By

MUHAMAD SADE BIN MOHAMAD AMIN

Thesis Submitted to the Graduate School of Management, Universiti Putra Malaysia, in Fulfillment of the Requirements for the Degree of Doctor of Philosophy

May 2018

COPYRIGHT

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the degree of Doctor of Philosophy

FACTORS THAT INFLUENCE INDIVIDUAL UTILISATION OF INTERNET PAYMENT SYSTEMS

By

MUHAMAD SADE BIN MOHAMAD AMIN

May 2018

Chairman : Associate Professor Mohd Fua'ad Bin Said, PhD
Faculty : Graduate School of Management, UPM

The overall number of Internet payment users in Malaysia has increased but the Malaysian consumers response towards the Internet payment systems falls short of expectations. The main objective of this thesis is to expand a theoretical model that establishes how intentions towards the utilisation of Internet payment system are designed and to what extent they are related to the actual use of Internet payment systems. The thesis also examines the role of customer trust in Internet payment acceptance and the perceptual dissimilarities among users on the foundation of their demographic characteristics of generational differences and gender. The thesis incorporates variables related to behavioural and environmental uncertainty (trust and perceived risk), technology acceptance constructs (perceived usefulness, ease of use, facilitating condition and social influence), and users' personal charateristics (generational differences and gender) into a comprehensible and parsimonious model. The Analysis of Moment Structures for Structural Equation Modelling (AMOS-SME) technique is used to meticulously test the validation of measurement models and to analyse the massive set of interrelationship between these variables and their comparative consequences on user intention and actual use of Internet payment systems. The data used in this study are gathered from 308 respondents through questionnaire survey of the Internet payment system among Malaysian bank consumers .The research finds that performance expectancy, effort expectancy and social influence have significantly influenced the usage of Internet payment systems in Malaysia.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysi sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

FAKTOR YANG MEMPENGARUHI PENGGUNA INDIVIDU SISTEM PEMBAYARAN INTERNET

Oleh

MUHAMAD SADE BIN MOHAMAD AMIN

Mei 2018

Pengerusi : Profesor Madya Mohd Fua'ad Bin Said, PhD
Fakulti : Sekolah Pengajian Siswazah Pengurusan, UPM

Di Malaysia keseluruhan bilangan pengguna bayaran Internet meningkat tetapi respon oleh pengguna untuk sistem pembayaran Internet masih jauh dari tahap kematangan. Justeru, objektif utama tesis ini adalah untuk mengembangkan model teori yang menetapkan bagaimana niat ke arah penggunaan sistem pembayaran Internet direka dan sejauh mana ia berkaitan dengan penggunaan sebenar sistem pembayaran Internet. Tesis ini juga mengkaji peranan kepercayaan pelanggan dalam penerimaan sistem pembayaran Internet dan ketidaksamaan persepsi di kalangan pengguna berasaskan ciri demografi iaitu perbezaan generasi dan jantina. Tesis ini menggabungkan pembolehubah yang berkaitan dengan ketidaktentuan tingkah laku dan alam sekitar (kepercayaan dan risiko), membina penerimaan teknologi (mengambilkira kegunaan, kemudahan penggunaan, memudahkan keadaan dan pengaruh sosial), dan tingkah laku peribadi pengguna (perbezaan generasi dan jantina) untuk mendapatkan model yang menyeluruh dan tepat. Teknik Pemodelan Persamaan Struktur digunakan untuk menguji dengan teliti keesahan model pengukuran disamping menganalisis kumpulan kepelbagaian hubungan antara pembolehubah dan kesan perbandingan terhadap niat pengguna dan penggunaan sebenar sistem pembayaran Internet. Data yang digunakan telah dikumpul daripada 308 responden melalui soal selidik sistem pembayaran Internet di kalangan pengguna bank di Malaysia. Kajian ini mendapati bahawa pembolehubah seperti jangkaan prestasi, jangkaan usaha dan pengaruh sosial dengan ketara mempengaruhi penggunaan sistem pembayaran Internet di Malaysia.

ACKNOWLEDGEMENTS

I am grateful to Associate Professor Dr. Mohd Fua'ad Said, my supervisor, Dr. Choo Wei Chong and Dr. Raja Nerina Raja Yusof as the committee members for their valuable guidance, keen interests, encouragements, suggestions and constructive criticisms at various stages of my research and their immense contributions towards the success of this study.

I acknowledge with thanks the kind and loving inspiration and timely guidance I received from Putra Business School, Universiti Putra, Malaysia staff.

I convey my deep and sincere gratitude to the Malaysian Public Service Department for funding my doctoral study.

Lastly, I express my deepest appreciation to my wife, Dato' Hajjah Hazizah Kassim, for her endless encouragement and support throughout my experience and journey in pursuing doctoral degree at Graduate School of Management, University Putra, Malaysia.

I certify that a Thesis Examination Committee has met on May 14, 2018 to conduct the final examination of Muhamad Sade Bin Mohamad Amin on his thesis entitled Factors That Influence Individual Utilisation of The Internet Payment Systems in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctorate of Philosophy.

Members of the Thesis Examination Committee were as follows:

Noor Azman Ali, PhD
Associate Professor
Faculty of Economics and Management
Universiti Putra Malaysia
(Chairman)

Arthur Tatnall, PhD
Professor
College of Business
Victoria University
Melbourne Australia
(External Examiner)

Sazili Shahibi, PhD
Associate Professor
Faculty of Information Technology
UiTM Puncak Perdana Campus
Shah Alam, Selangor
(External Examiner)

Azmawani Abd Rahman, PhD
Associate Professor
Faculty of Economics and Management
Universiti Putra Malaysia
(Internal Examiner)

Mohd Fua'ad Said, PhD
Associate Professor
Faculty of Economic and Management
Universiti Putra Malaysia
(Representative of Supervisory Committee/Observer)

_____

PROF. DR. M. IQBAL SARIPAN
Deputy Vice Chancellor (Academic & International)
Universiti Putra Malaysia

Date:

On behalf of,
Graduate School of Management,
Universiti Putra Malaysia

This thesis was submitted to the Senate of the Universiti Putra Malaysia and has been accepted as fulfillment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

Mohd Fua'ad Said, PhD
Associate Professor
Faculty of Economics and Management
Universiti Putra Malaysia
(Chairman)

Choo We Chong, PhD
Senior Lecturer
Faculty of Economics and Management
Universiti Putra Malaysia
(Member)

Raja Nerina Raja Yusof, PhD
Senior Lecturer
Faculty of Economics and Management
Universiti Putra Malaysia
(Member)

_____
PROF. DR. M. IQBAL SARIPAN
Deputy Vice Chancellor (Academic & International)
Universiti Putra Malaysia

Date:

On behalf of,
Graduate School of Management,
Universiti Putra Malaysia

Declaration by graduate student

I hereby confirm that:

- this thesis is my original work;
- quotations, illustrations and citations have been duly referenced;
- this thesis has not been submitted previously or concurrently for any other degree at any institutions;
- intellectual property from the thesis and copyright of thesis are fully-owned by Universiti Putra Malaysia, as according to the Universiti Putra Malaysia (Research) Rules 2012;
- written permission must be obtained from supervisor and the office of Deputy Vice-Chancellor (Research and innovation) before thesis is published (in the form of written, printed or in electronic form) including books, journals, modules, proceedings, popular writings, seminar papers, manuscripts, posters, reports, lecture notes, learning modules or any other materials as stated in the Universiti Putra Malaysia (Research) Rules 2012;
- there is no plagiarism or data falsification/fabrication in the thesis, and scholarly integrity is upheld as according to the Universiti Putra Malaysia (Graduate Studies) Rules 2003 (Revision 2012-2013) and the Universiti Putra Malaysia (Research) Rules 2012. The thesis has undergone plagiarism detection software

Signature: _____ Date: _____

Name and Matric No: Muhamad Sade Bin Mohamad Amin, GM03655

Declaration by Members of Supervisory Committee

This is to confirm that:

- the research conducted and the writing of this thesis was under our supervision;
- supervision responsibilities as stated in the Universiti Putra Malaysia (Graduate Studies) Rules 2003 (Revision 2012-2013) were adhered to.

Chairman of Supervisory Committee

Signature : _____
Name : Assoc. Prof. Dr. Mohd Fua'ad Said
Faculty : Faculty of Economics and Management, UPM

Members of Supervisory Committee

Signature : _____
Name : Dr. Choo Wei Chong
Faculty : Faculty of Economics and Management, UPM

Signature : _____
Name : Dr. Raja Nerina Raja Yusof
Faculty : Faculty of Economics and Management, UPM

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ABBREVIATIONS

ATM	Automatic Teller Machines
B2B	Business-to-Business
B2C	Business-to-Customer
BNM	Bank Negara Malaysia
C2C	Customer-to-customer
CMV	Common methods variance
CNP	Card-not-present
DAGS	Demonstrators Application Grant Scheme
DTPB	Decomposed Theory of Planned Behavior
EFT	Electronic Fund Transfer
ICT	Information Communcation Technology
IDT	Innovation Diffusion Theory
IMF	International Monetery Fund
IS	Information System
IT	Information Technology
MCMC	Malaysian Communication Multimedia Comission
MDC	Multimedia Development Cooperation
MIDA	Malaysia Indsutrial Development Authority
MITI	Ministry of International Trades and Industries
MOF	Ministry of Finance
MSC	Multimedia Super Corridor
NITA	National Information Technology Agenda
NITC	National Information Technology Council
POS	Points-of-sale
SCT	Social Cognitive Theory
SME	Small Medium Enterprise
TAM	Technology Acceptance Model
TPB	Theory Planned Behavior
TRA	Theory of Reason Action
UN	United Nation
UTAUT	United Theory Acceptance and use Technology
WWW	World Wide Web

CHAPTER 1

INTRODUCTION

The central reason to execute this research is to advance the knowledge of information technology management concept. This research particularly aims to draw upon the experimental evidence on the character and boundary of technology acceptance and its related concepts, which will be the basis of the conceptual and hypothetical elevation of the Internet payment system, initially in the e-commerce sector in Malaysia and the setting of one in a developing country.

This study starts with Chapter One that introduces the background of Internet payment by discussing it in relation to the Internet and e-commerce environment, and the potential it has provided to businesses and individual consumers. It also explains the government's policy concerning the use of the Internet payment systems, the status of the utilisation of Malaysian e-commerce industryvia Internet, the acceptance of Internet payment by consumer worldwide, and the issues surrounding its acceptance by Malaysian consumers. The final part of Chapter 1 presents the objectives and importance of this study, and the overview of the thesis organization.

1.1 Payment System, the Internet and E-Commerce

The Internet is the world's largest technology network that is utilised by more than 4.2 billion users and connected by 30 billion devices in 2018, in which this connection is bounded by a common set of principles and procedures (InternetWorldStats, 2018). Alongside with the World Wide Web (WWW), the Internet has transformed the telecommunications industry in a way that it improvises the manner individuals and organisations use computers to conduct a broad variety of activities. This corresponding software innovation has enhanced the availability and usefulness of the network (Mowery & Simcoe, 2002). The Internet and the WWW together encompass a technology innovation through the latent to change the distribution of information in a worldwide economy that relies even more heavily on knowledge (Kleinrock, 2010).

The network technology developed by some computer scientists began in early 1900s with the fundamental ideas and concepts, for what users know today as the Internet (Deitel, Deitel, & Nieto, 2002). The research on Internet began in 1908, when Nikola Tesla anticipated the latest technology that would allow a person conducting business n in New York to command orders, and to have them punctually executed the order at their workplace elsewhere on earth, which would also allow worldwide access to any image, character, drawing, or print (Kleinrock, 2010). Three decades later, Wells and Mayne (1938) expressed their idea of a "World Brain", whereby knowledge and ideas are acknowledged, separated, reviewed, absorbed, filtered and matched. These thoughts were followed by a 1945 essay by Vannevar Bush, expecting a mechanism

with communal memory that he called the 'memex', as a new form of manuals that will materialise, are ready-made with a network of associative marks running through them, ready to be plunged into the memex and magnified there (Kleinrock, 2010).

By 1968, ARPANET, a project of the U.S Department of Defense with American universities, was regarded as the contemporary Internet, developed based on a large-scale of packet switching technology (Deitel, Deitel, & Nieto, 2002). ARPANET allowed data sharing among computers using this innovation chain at various sites, and its success fascinated others to join its network, which has resulted to an implausible utilization rate. By 1994, the usage of Internet had grown 1,758 % and continued to double in size about every two to three months (Hoffman, Novak, & Chartterjee, 1995).

Although it was created more than 50 years ago, the acceptance towards the internet has increased starting in 1995 (Marsan, 2012). Subsequently, the number of Internet users increased from 16 million to more than 2 billion in June, 2012, which was more than one hundred fold growth and it appeared to have no signs of reducing (Miniwatts Group, 2012). Moreover, the number of computers connected to the Internet was around 8.7 billion in 2012, which included conventional computer devices, portable devices, as well as the latest business and consumer devices (Forbes, 2018). InternetWorldStats (2018) forecasted that this number will reach 30 billion by 2018 and doubled to 50 billion by the year 2020.

The bright growth in the utilisation rate of the Internet as well as the outburst of its acceptance have enabled the growth of electronic business (e-commerce) which can be categorised as the activity of purchasing and retailing, or trading of goods, services, and information, between trades and individuals, throughout electronic networks, including the Internet (Laudon & Traver, 2001). E-commerce activities began in 1995 and have since expanded at the rate of at least 100% annually. By the year 2018, business entities worldwide had spent about US$24.855 trillion in total retail sales transactions and it estimates sales will top $27 trillion in 2020 (eMarketer, 2018).

The utilisation of the payment system is expanding quickly along with the Internet, as large numbers of businesses have rapidly adopted the Internet as the method for achieving their e-commerce management tasks (Munger, 2009). Essentially, the main reason for increasing an Internet payment system is that it offers business and individuals with a means of combining individual commercial services into an electronic marketplace. This marketplace is also known as market-space or virtual market (Maroofi, Hashemi, & Nargesi, 2012).

Internet payment system or "online payment" is defined as conservative or innovative payment system that allows financial deals to be completed securely from a single organisation or individual over the Internet (Allen, 2003; Shon & Swatman, 1998). This online system allows consumers, who go online to make buying decisions, order

online and complete the payment processes online, thereby minimising the efforts for themselves and their suppliers (Treiblmaier, Pinterits, & Floh, 2008). Currently, e-commerce offers the room to buy and sell merchandises, information and service industries on the Internet, therefore, the Internet payment systems perform a crucial role whereby the shortage of an efficient system could hamper the achievement of the entire e-commerce development (Ozkan, Bindusara, & Hackney, 2010).

The exponential progress of the Internet has generated the necessity for novel payment systems, which are much acceptable for the web than the system of conventional payment (Hernandez-Murillo, Llobet, & Fuentes, 2010). The brick and mortar payment provider are moving to incorporate the distribution channels and begin to adopt the click strategy (Kolodinsky, Hogarth, & Hilgert, 2004). The ever-changing landscape of payment system challenges the service providers to adjust their tactics to a collaborative strategy in order to meet the ultimatum for an effective Internet payment system (Wonglimpiyarat, 2009).

The development of payment services has significant implications for financial and non-financial institutions' distribution and communication policy, especially on the interface of the consumers (Ozkan, Bindusara, & Hackney, 2010). It is essential to understand the factors affecting the diffusion of technological innovations in recognising market opportunities (Rogers E. , 1995). These institutions are challenged to attract the traditional/mainstream users to embrace and subsequently, use the new innovation in technologies, such as Internet payment system (Patsiotis, Hughes, & Webber, 2011). Recent applications built upon technology ought to be tailor-made to meet the needs of diverse consumer segments besides comprehending the influence of innovation on dissimilar groups of adopters and non-adopters that is the sector's latent value.

As businesses become 'unusual', financial and non-financial institutions have been transforming their business model to learn the ways to be innovative in the payment industry (Wonglimpiyarat, 2009). Usually, the financial service has always been dominated by the banking industry. However, with the introduction of the Internet, participants in the upcoming payment system will arise from numerous industry segments (Porter, 2001). That means, by using Internet, the landscape for global e-commerce has changed in the sense that not only the banks but also other players on the supply-side can lead the payment market innovation for virtual competition. Therefore, new players, such as mobile phone providers, may become a competitive threat to traditional banks by introducing a mixture of payment modes, like smart cards, prepaid cards, mobile payments and payments via phone bills, as the mobile phones may offer suitable and modernised distribution channels to consumers (Ozkan, Bindusara, & Hackney, 2010).

The latest study shows that 54% of online customers prefer online payments while 33% prefer to use debit / credit cards instead of COD (12%) and first deposit (1%). By providing more payment options, it can encourage potential customers to make a

purchase, even more so if the payment method is offered with them (Yau, Chapree, Bass, Cheng, Lau, & Song, 2017). There are currently many ways to make payments over the internet. Payments over the internet or online are increasingly being enhanced for the convenience of users such as Maybank2U, CimbClicks, JomPay and more.

1.2 Internet Payment Opportunities

As a worldwide network, the Internet provides businesses with many new opportunities. Firstly, the Internet introduces new delivery channels to make payment as compared to the traditional payments, such as ATMs, Checks, Cards and EFTs (Thornton & White, 2001). These delivery channels are significant to reduce costs and improve competitiveness to maintain the current customer -base and to entice new customers (Armesh, Saljoughi, & Kord, 2010; Kimball & Gregor, 1995). Thus, Internet provides opportunities for businesses to establish distinctive positioning in competitive environment, in relation to Internet payment (Porter, 2001). While engaged in the process of adapting to customer preferences and behavioural patterns, Duric, Maric, & Gasevic, (2007) proposed that users, and not service providers, select the suitable delivery channel and place of delivery (Paypers, 2016).

Secondly, the Internet payment media are more flexible than some of the traditional payment methods (Balakrishnan, 2009). It permits consumers around the world to transact payments for a diversity of products and services from the convenience of their homes (Armesh, Saljoughi, & Kord, 2010). Physical hurdles or borders are removed which have permitted a business to get a customer who is tangibly further away. On the other hand, customers can purchase from a trader who otherwise would have not been reachable to him. In addition, the flexibility of Internet payment allows for making orders, buying, retailing, and repaying that can happen 24 hours a day, 7 days a week and 365 days a year (Paypers, 2016; Taddesse & Kidan, 2005).

Thirdly, as the e-commerce industry becomes more competitive, it is more difficult to contest on pricing for the key price offerings of e-commerce companies whereby the service rates are proposed on deliveries and charged on loans (Roth, 2009). Thus, Internet payment gives the implication of a new non-price factor, which can be used to achieve higher revenue growth. E-commerce companies are able to contemplate methods for cutting costs. It is broadly recognised that one of the cosmic overheads earned by the companies of E-commerce is the operational outlet relating to human resource and operating costs (Thornton & White, 2001). Consequently, it is reasonable that these e-commerce companies are presently evaluating the approach in which their clients are able to make their payments to companies. The opportunities for the companies to reduce costs and for consumers to reduce price have become a new potential to be explored by all e-commerce companies (Armesh, Saljoughi, & Kord, 2010). This, combined with the fact that there is a bigger rivalry in e-commerce, would encourage businesses to market their products and services at lesser prices but with improved quality (Paypers, 2016).

Fourthly, the Internet offers any service provider in the e-commerce industry and consumer, regardless of its size and operational budget, the virtual value sequence, the set of actions done where an e-payment service is generated and provided to customers (Porter, 2001). This has benefited small business entities that most probably would not be able to go international because of the cost of using the existing value chain (Treiblmaier, Pinterits, & Floh, 2008). Visa as a credit card corporation, for instance, reported that its customers' Internet consumptions were US$13 billion in 2000, extending for roughly 1% of its overall charge activity and reached the US$10.2 trillion on its whole dealings by the year 2017 (Visa, 2018) This figure was increased exponentially over a 10 year period from 2007 through 2017 with a value of US$79 trillion (US Federal Reserved System, 2017).And lastly, the Internet lessens the burden of making payment overseas, as the businesses and consumers do not have to go through the read tape of dealing with different laws, policies, and customs as they must when they are maintaining physical presence in other countries (Evans, 2011; Rayport & Sviokla, 1995). The traditional payment system is a functioning network ruled by regulations, guidelines and standards that are associated to bank accounts and offers the operation for financial trade using bank payments (Summers, 2012). The infrastructure of online payment recognises to affect the monetary value transmission among parties satisfying common obligations. Its mechanical efficacy determines the efficiency with which dealing currency is expended in the economy, and the risk related to its use (Bossone & Cirasion, 2001). For example, in the Malaysian Exchange Control Act 1953, the import or export money control is supposed to be connected to customs. Therefore, failure to declare would consequence in a crime under the Malaysian Customs Act 1967. These laws limit the amount of currency to be brought into and out of Malaysia, ringgit notes which does not exceed RM10,000 per person. Thenon-residents on the other hand need to declare in IMM26 if the total amount exceeds US$10,000. Besides all these opportunities, Internet Payment Systems is no longer confined to computers or smartphones. Nowadays, it even includes connected devices, gadgets, tools, apparel, fashion accessories and sensors. They all have the possibility to rupture commerce and to commence new payment form factors. Consumers also shift from type to voice interfaces with personal assistants powered by the established smartphone and emerging wireless speaker categories driving this uptake. Euromonitor International evaluates that almost 81 million wireless speakers, such as Amazon Echo, will be sold universally in 2017, and it is anticipated to escalate to 84% from 2017 to 2021 (Euromonitor International. 2017).

Over the past decades, consumers treated smartphones as a must-have device . China was the first mobile-centric nation as Chinese consumers invested in more purchasesthrough mobile phones than computers in 2015. According to the recent data from Euromonitor International, two-thirds of digital purchases were mobile based as of 2016. A lifestyle-driven app with commerce capabilities like Alipay and WeChat among Chinese consumers have enpowered many of these transactions in China and now increasingly abroad. As the spending power of Chinese consumers grow, their wallets are moving west and the government enhances transnational cooperation which authorizes consumers to travel to more countries. In 2030, it is expected that Chinese residents will take 225 million international trips, growing at 7.3% compound annual growth rate (CAGR) over 2016-2030(Euromonitor International. 2017).

1.3 Malaysian Government Policy on the Internet and E-commerce

According to the Department of Statistic, Malaysia on March 19, 2018, the number of Internet users in Malaysia has increased from 22.4 million to 27.5 million from 2015 to 2017. The data shows information technology and communication (ICT) is experiencing rapid growth in Malaysia (Star, 2018). Smartphone usage, which was the most popular for internet access, rose to 97.7% in the equipment used by individual

On mainstream internet activity in Malaysia, among the popular activities are social networking sites with 86.3% and downloading images, movies, videos or music and playing or downloading video games at 81.2 per cent. However activities carried out by internet users on internet banking was only 37.6 per cent from the population or 12.01 million Malaysian individual active users in 2017 (Star, 2018).

The government has officially proclaimed that they aimed to establish Malaysia as an entirely industrialised nation by year 2020 (Vision 2020), and the Information Communication Technology (ICT) market is perceived to be the main growth factor to make it possible. In pursuit of this policy, the Malaysian government is consistently advocating the investment and utilisation of ICT. Among the government goals are as follows:

i. To make Malaysia as one of the famous international hubs for communication, multimedia information and content services.
ii. To encourage the formation of a society based on information security, and network reliability and integrity;
iii. To develop local information resources
iv. To raise consumer confidence in local service delivery to a high level
v. To develop ways to guarantee information security and network reliability and integrity
vi To ensure fair terms for the use of the national technological infrastructure
vii. To establish a reliable application environment for end-users of technology (NITC, 2002)

The Malaysian government has taken major steps to support this policy (NITC, 2002). Firstly, it has set up the National Information Technology Council (NITC) in 1994, to encourage the application of ICT development within the country. Furthermore, in 1996 the government created the National IT Agenda (NITA), designed to serve as the guidelines for ICT utilisation in Malaysia. In addition, the Multimedia Development Corporation (MDC) was established in 1996, to put up the idea of opening offices in the Multimedia Super Corridor (MSC) to local and international ICT firms, by providing special privileges and tax incentives.

The government also created the Communication and Multimedia Act of 1998 to regulate the ICT sector. The act covers areas, such as economic policies, technical guidelines, customer protections, and social regulations. Finally, the government launched the Demonstrators Application Grant Scheme (DAGS) in 1998, as a source of funds for Malaysian individuals and organisations in need of financial support for adopting new or existing ICT and multimedia technologies.

Currently, the government continues to develop the innovative digital economy framework, and by May 18, 2014, Digital Malaysia Master Plan was implemented to gather key opportunities as a result from the worldwide shift from analogue towards digital (Rajoo, 2014). The strategic thrust is to develop an environment that promotes the extensive utilization of ICT in every feature of the economy to link societies around the globe and interact in real time that empowers government, businesses and citizens. Of a total of eight projects, the Digital Malaysia project facilitates e-payment services aimed at SMEs and small enterprises. This project is expected to push the implementation of e-payment systems, specifically for SMEs and small enterprises by offering them an easier access to reasonable terminals and readers, along with e-commerce resolutions. As a result, more Malaysian small industries and micro businesses, which are capable to admit cashless payments, are vibrant to escalate revenues for trade owners (DigitalMalaysia, 2014).

The current development of e-commerce in Malaysia is that the government enticed the Chinese e-commerce giant Alibaba Group Holding Limited to inaugurate a regional distribution hub in Malaysia to indulge into its fast-paced business within its domain. The hub would be settled in the midst of KLIA Aeropolis, a 24,700-acre development headed by airport operator Malaysia Airports Holdings Bhd (MAHB).It is predicted to develop more than 7 billion ringgit ($1.58 billion) worth of domestic and foreign investments. Jack Ma, whose Alibaba possesses Taobao, a Chinese online shopping business,, would assist Malaysia to lead its e-economy development through the execution of online payment and banking (Reuter, 2018). Alibaba Group, the owner of the South China Morning Post, also operates a digital free trade hub in Kuala Lumpur – a bricks-and-mortar warehouse backed by artificial intelligence that coordinates e-commerce in Southeast Asia (The Edge, 2018).

Currently, since various resources to expedite the country's development has been pledged by Malaysia, it has made 2018 a great yearfor the Malaysian e-commerce scene.This was transparent as it could be seen that the government's partnership with Jack Ma and Alibaba in setting up a Digital Free Trade Zone (DFTZ) was the first of its kind outside of China. This was consequently bolstered as it was announced by the government that the digital economy is one of its eight key thrusts to the country's growth plan for the year 2020. On top of those major events, there are 5 other eminent budget allocations and initiatives which can be seen, and they are predicted to aid e-commerce in the country (Chew, 2017)

1.4 The Malaysian E-payment and Service Industry growth

The Malaysian e-commerce industry offers a diversified range of services with the revenue collected from Internet shopping market place of RM83 billion in 2017, projected to be reaching RM114 billion in 2020. By conducting the business's procurement and sourcing processes online, the power of e-commerce can be harnessed extensively. e. Over the years, a complex and dynamic value chain comprises of both buyers and sellers, has been augmented to explore, request for proposals, submit tender documents, and analyse suppliers' responses electronically. Almost 70% of B2B buyers now order goods online, 18% spend more than 90% of their budgets online, and 30% go online to research at least 90% of products before buying (MDEC, 2018).

To be operationally sustainable, e-commerce companies must match with the conventional ways of contending and not to regulate their Internet proposals apart from their reputable operations (Porter, 2001). Besides, with the various types of smart cards, electronic cash, and electronic cheque mechanisms, the Malaysian financial service providers have invested on Internet payment system as a competitive weapon. According to Bank Negara Malaysia (2018), the numbers of subscribers for the Internet payment system increases every year since 2010, from only 9.8 million users in 2010 to 27.0 million users in September 2017. The penetration rate for Internet payment system, relative to the total population, has increased from 34.4% (2010) to 79.6% (2017). The landscape has changed with the entry of non-banks into the e-payment service that was once thought to be the domain of banks (BNM, 2018). Table 1.1 shows the penetration rate for internet banking, relative to the total population in Malaysia, from year 2010 to 2017. With the rapid increase in the penetration rate almost 80% in the end of 2017, it can be deduced that the Internet payment system is becoming more and very significant in the current development of e-commerce as discussed.

Table 1.1 : Internet banking subscribers from 2010 until 2017

	Number of subscribers (Millions)			Penetration to population (%)
Year	**Total**	**Individual**	**Corporate**	
2010	9.8	9.6	0.2	34.4
2011	11.9	11.6	0.2	40.9
2012	13.7	13.4	0.2	46.4
2013	15.5	15.2	0.3	51.4
2014	17.6	17.3	0.3	57.5
2015	19.8	19.2	0.6	63.3
2016	22.8	22.0	0.8	72.0
2017	27.0	24.6	0.9	79.6

(Sources : from BNM, 2018)

The latest developments have seen Malaysia go in the turmoil of a massive non-cash society by 2050. Although the attraction is still 32 years old, the digital payment platform in Malaysia is growing rapidly as mushrooms grow after the rain. To date, countries that promote cashless payments are Singapore, the Netherlands and France. It also received encouraging responses in China and India.

The advancement of mobile device technology evidently shows the ways the communities communicate. In fact, it becomes one of the factors of acceptance and use of digital payments, primarily in terms of its sales and banking. However, the acceptance of this digital payment platform is still in its initial phase, a Nielsen survey unveils that mobile devices are used by 78% of Malaysians to browse social media, and only 34% use it to buy goods or services (Bank Negara Malaysia, 2018). This statistic suggests that rates are still low for digital payment platforms in Malaysia. This low acceptance rate is also from the public's uncertainty about the safety of digital payment platforms. A total of 72% of Malaysians think of the research done.

In October 2016, the Malaysia's National eCommerce Strategic Roadmap was established by the government to identify actual confrontations and convey tangible solutions to accomplish the objectives of enhancing the eCommerce growth rate for Malaysia. The Government has also launched the National eCommerce Council (NeCC) headed by Minister of International Trade and Industry, comprising various Ministries and Agencies, to urge the accomplishment of the Roadmap (MDEC, 2016).

1.5 The Global Financial Industry and Internet Payment

From global perspective, it is estimated by the UN International Telecommunications Union that in 2017, the amount of individuals utilising the Internet will surpass 3.5 billion, potraying 48.0% of the world population. This compares with 1.0 billion (15.8%) in 2005, 2.0 billion (28.9 per cent) in 2010 and 3.15 billion (43.2 per cent) in 2015, continuing a constant rising trend during the period. UN ITU Report in 2017 indicated that a substantial digital divide between developed countries, wherein 81.0% of individuals are now estimated to use the Internet, and developing countries, wherein the figure is 41.3%, and a similar digital divide between these groups of countries and Less Developed Countries (LDCs), for which the comparable figure is 17.5% (UNITU, 2017). According to Miniwatts Marketing Group (2018), in Junem the number of global Internet users increased from 424 million in June, 2000 to 4.126 billion in December, 2017 with a tremendous growth of 1,052%, as presented in Table 1.2 below.

The same trend is also reflected in the global e-commerce industry. An expert study reported by Capgemini Consultant in 2018 revealed that banks are encumbered by their legacy systems and are concentrated on conforming to regulations instead of satisfying growing needs and customers' anticipation. Thus, FinTech (Financial Technology) firms aim for the most profitable business segments which has caused

them to penetrate into the industry with innovative products and services That study also reported that Bank-FinTech partnerships and collaborations are more focused on Open API (application programming interface) standards and public cloud implementation due to shared infrastructure. The expenditure relating to IT development by the financial sector is USD 202.3 billion in 2017 and IT Spending for Public Cloud Services in banking industry around USD 8 billion in that particular year.

Table 1.2 : Global Internet Distribution and Population Numbers

World Regions	Population (2018 Est.)	Population % of World	Internet Users 31 December 2017	Penetration Rate (% Pop.)	Growth 2000 - 2017	Active Internet Users%
Africa	1,287,914,329	16.9%	453,329,534	35.2%	9,941%	10.9%
Asia	4,207,588,157	55.1%	2,023,630,194	48.15%	1,670%	48.7%
Europe	827,650,849	10.8%	704,833,752	85.2%	570%	17.0%
Latin America/ Caribbean	652,047,996	8.5%	437,001,277	67.0%	2,318%	10.5%
Middle East	254,438,981	3.3%	164,037,259	64.5%	4,893%	3.9%
North America	363,844,662	4.8%	345,660,847	95.0%	219%	8.3%
Oceania/ Australia	41,273,454	0.6%	28,439,277	68.9%	273%	0.7%
World Total	**7,634,758,428**	**100%**	**4,156,932,140**	**54.4%**	**1,052%**	**100.0%**

(Source : Internetworldstats, 2018)

The utilisation of Internet by finance companies internationally is rising because it enables them to sustain the advancement of business payment by acting as a medium for network leeway, client gaining, social obligation (finance to the unfinanced segment), and funds transmission and remittances (Wonglimpiyarat, 2009). It also stipulates business apparatuses, such as online reservation, and reduces the supply chain costs (Druten, Sawan, Wilson, Sullivan, & Kanchan, 2013). E-Commerce Company Websites, for example, operate 24 hours a day, reaching potential customers around the world, without barriers of geography or time zones. Additionally, Internet payment allows for small and independent finance companies to compete with the big chain companies (Vanetti, 2010). The Internet offers a more or less an even playing field for the industry because all finance companies have the same access to the Internet, regardless of their sizes or budgets. Furthermore, the Internet enables financial institutions' customers to transact at their own convenience. With internet, they are able to make transactions from the comfort of their own home, reduce the cost of travelling and avoid the hassle of finding parking bays and queuing up at a branch to be served. In addition, banks' customers can acquire immediate statement for their accounts; be eligible for lower rates offered to those who transact online; compare

deals easily between e-commerce companies and apply for loan or mortgage straight from the banks' websites and get a quick reply on their applications (Oakes, 2011).

The growing global usage of Internet by the e-commerce industry is matched with the international acceptance of the Internet by their customers for making payments, as was reported in a number of surveys. The survey conducted by Nielsen in the United States in 2012 showed that 59% of those surveyed preferred online purchases than in-store and mobile purchases (Nielsen, 2012). In addition, a survey by Wanderful (http://www.wanderful.com) in an inclusive census of 1,027 American customers who used their portable devices for making purchases has found that 77% of customers have checked online for the discovery of product information. The study also concluded that 70% consumers made an instinct purchase in a store over the past month.

The latest study by Juniper Research, estimated that more than 2 billion users will get at market banking services through tablets, smartphones, PCs and smartwatches in 2018. They found that accelerated adoption in key emerging markets such as India and China means that mobile banking users now represent 50% of the global banked population. Juniper expects that the number of global mobile banking users will now overtake online users in 2018 (Juniper, 2018).

1.6 Problem Statement

Internet payment systems have developed an imperative element for the success of trades and financial services (Oney, Oksuzoglu, & Hussain, 2017). The internet payment system has its own favorable characteristics as the focal reason of its reputation and significance to be compared to the traditional payment system.. These include security, reliability, scalability, anonymity, acceptability, privacy, efficiency, and convenience (Khan, Hameed & Khan, 2017; Abdullah, Jayaraman, Shariff, Bahari & Nor, 2016). Businesses have deployed Internet payment systems which obtained greater acknowledgment over time throughout the world Sheikh, Islam, Rana, Hameed & Saeed (2017) Having virtuous payment systems is the vertebral column of a greatly competitive country. It is imperative to maximize the effort to prioritize Internet payment as a national agenda in order to boost productivity and to contribute in upbringing a country's competitiveness (BNM, 2018).

France, the US and the UK as the developed countries have wholly advanced epayment systems; meanwhile the Asia-Pacific as among the developing countries in regions provide the growth thrust to the industry (Ashraf, Thongpapanl & Auh, 2014). For instance, it was stated by the Central Bank of Malaysia that Malaysia would accomplish greater economic development and greater competitiveness, provided that the nation will fully migrate from paper-based payment systems to Internet payment systems. This is because the latter provides, among other things, chances to upgrade competency levels and diminish the cost of working on business (BNM, 2017)

In the 2017-2018, Malaysia was ranked 23th in the World Economic Forum's Global Competitiveness. Although Malaysia moves up two ranks from the previous position, it is still faraway behind its neighbouring country Singapore, which ranked second runner-up worldwide, and other Asia-Pacific countries such as Japan and China, which ranked 9th and 15th respectively (Schwab et al. 2017). Apart from that, the World Bank reported that Malaysia has a modern payment system infrastructure that allows banks to conduct a high volume of transactions on a secured basis and low cost. However, data reveals that the existing infrastructure is not being used at its fullest capacity yet. According to Findex, in 2014 only 55 percent of adults that received wages reported that the salary was transferred into their account at financial institutions, and the remaining 45 percent were paid by their employer in cash. This latter figure illustrates the potential for advancing e-payments in Malaysia. A much higher percentage of workers could receive their monthly salaries and wages directly deposited into their bank accounts. This would not only be safer, but also more cost-effective. Among adults receiving wage payments, adults in the bottom 40 percent (income level) were more likely to receive their payments in cash. (WorldBank, 2017).

Therefore, Malaysia needs to fully shift from paper-based to electronic payment systems to attain economic development and better financial inclusions for its people, and consequently, develop the country's competitiveness. Malaysia is categorized as a cash-based country with only 56% of its transactions being cashless in 2017 (The Malaysian Reserve, 2018). In contrast, about 98% of the total value of transaction in Sweden are cashless with a target to increase this to 99.5% by 2020 (Capgemini, 2017).

Based on these figures, it can be seen that Malaysia will keep on relying heavily on cash and other paper-based payments. Given e-payment's importance, Malaysia, with a strong vision to advance from a developing to a developed country by 2020 (Razak 2014) needs to promote and migrate all payment stakeholders (especially businesses and consumers) to adopt Internet payment systems. However, various stakeholders in Malaysia, especially consumers, are still reluctant to fully use e-payment technology. For example, in the country's road toll fee collection system, many motor vehicle drivers still opt to endure long queues to pay cash, rather than using the shorter and faster lanes that accept prepaid electronic cards (Star, 2017) or the number of Zakat payers using internet payment is still low compared (only 4.4%) to the manual mode (Yaakub, Ramli, Muhamed & Muhammad, 2016).

In any case, it is a must to improve the knowledge of factors influencing consumers' and businesses' willingness to adopt Internet payment systems and also the challenges encountered by the technology service providers in providing reliable and efficient services to both parties. Understanding the determinants and the impacts of these critical factors on Internet payment systems adoption will be important to countries seeking to migrate to Internet payment systems. As such, in this thesis, the factors that influence Malaysia's Internet payment system adoption are empirically examined.

1.7 Objectives of the Study

The general objectives of this research were to examine the acceptance of Internet payment by Malaysian consumers, utilising the individual unified technology acceptance framework. The specific objectives were to:

i. identify the factors (performance expectancy, effort expectancy, social influence, facilitating condition, trust, perceived risk as independent variables) that have significantly influenced these consumers to adopt the Internet payment system;
ii. examine the environment associated with each of these identified factors (independent variables) and the consumers' Internet payment adoption behaviour;
iii. examine how these factors interact with each other (perceived risk as mediating; generational and gender difference as moderating) in regard to their relationship with the consumers' adoption behaviour; and
iv. propose a framework to analyse the adoption of Internet payment system by Malaysian consumers.

1.8 Significant and Contribution of the Study

1.8.1 Practical Implementation of the Study

In today's continuously evolving technology, the orientation between policy-making to develop information system and its action plan implementation has become very vital because failure to appreciate and utilise the benefits of new technologies can be disastrous to organisations. With the snowballing dependence on the Internet and developing use of electronic payment globally, organisations need to understand and evaluate the latest e-payment application that is beginning to appear at their doorways, with the Internet payment system being one of them. This study was designed to uncover the motivations behind the use of this application among Malaysian consumers. For e-commerce companies, business managers and consumers who are still wary of adopting the Internet payment system or are in the process of gathering information on it, this study can provide insights regarding the factors significantly influenced their peers who decided to utilise this innovation as a way of making payment.

For the Malaysian officials, especially those in the Ministry of Finance, Bank Negara Malaysia, Malaysian Communication Multimedia Commission (MCMC) and Cybersecurity Agency, the findings of this study may also prove beneficial. There are numerous government policies crafted to encourage the private sectors to embrace electronic commerce. As 'technology pushers', officials may be helped by the information gathered by this research, in order to comprehend more about the issues that have an impact on the adoption of Internet payment. Perhaps the added understanding will then enable them to assist businesses and individual users who

have already adopted e-commerce application, and to push other consumers who are yet to utilise the Internet payment application.

The contribution that is made upon the practice or policy in this research can be utilised by the regulators and policy makers to develop suitable policies and instructions in order to facilitate the adoption of Internet Payment System in a country. In addition, the stakeholders can fully comprehend and point out address businesses' and consumers' needs and interests through my assistance in the epayment industry for retail transactions, such as merchant acquirers and technology service providers. Last but not least, future research can opt to this study as an avenue to examine and compare similar samples in different countries.

1.8.2 Theoretical Implementation of the Study

This study also serves as a ground for consumer technology acceptance study. It suggests an alternative perspective for analysing the relationship between independent and dependent variables. Past studies on technology acceptance utilised linear regression as a way to evaluate the relationship amongst independent and dependent variables. The effects assumed were that while any one given independent variable was being analysed, other independent factors were irrelevant, or at the very most had only a dormant effect. Such assumption is debatable. This study utilised the path analysis (structure equation modelling), as it is believed that certain independent variables may act as mediators in their relations with the dependent variables and other independent variables. This provides a new way of viewing the relationship between independent variables.

Therefore, the main contribution of this study lies in it being the earliest empirical study on Internet payment in Malaysia, particularly on the individual consumer usage. This is due to the particular emphasis that the government has put on the retail sector in terms of payment. The scarcity of research on Internet payment has given this study an opportunity to contribute to the body of knowledge in several ways.

Firstly, this analysis expects to contribute to the improvement of new concepts, theories and models of Internet payment, particularly within the context of a developing country like Malaysia.

Secondly, as there is hardly any empirical evidence of Internet payment studies in the Malaysian e-commerce sector, this study consists of descriptive discussions in certain sections, which will analyse and detail the nature of Internet payment in Malaysia, whilst other sections, which are more critical, will discuss technology acceptance analytically. These contributions will clarify the meaning and improve the understanding of Internet payment in retail companies in Malaysia and in the context of an emerging country. Thus, this empirical and analytical study will expand the limited literature.

Thirdly, the study will raise awareness of the importance of Internet payment, and give a better understanding of how Internet payment can be effectively approached.

Fourthly, it is hoped that this study will enlighten policy-makers of the governmental bodies and managers in the retail sector by improving strategies for technology management in Malaysia.

Finally, it is also hoped that practitioners in the areas of business and information system are capable of using the outcomes to plan and develop new strategies and improve thepayment system processes in the Malaysian retail sector.

Businesses and consumers are persistently faced with technology adoption resolutions. For technologically developing countries like Malaysia wherein the chances for economic development is great and the advantages of technologies such as epayment is not yet fully ascertained, it is therefore imperative to analyse and examine the determinants that excite their behaviour in adopting such system.

There are various notable theoretical, methodological, and managerial contributions to the literature in this research. By transforming the UTAUT and prescribing the links between the variables that induce consumers' adoption of Internet payment system, a stronger predictive model with better results is able to be generated. The model is further enlarged by instituting a new independent variable: trust. Additionally, in order to better understand the relationship, the mediation implications between variables is to be analysed. A few relationships in consumer models were partially mediated by the perceived risk and new moderating variables are also initiated that influence the relationship between The Internet Payment Systems adoption factors. These moderating variables include generational distinctions and gender distinctions.

Overall, by investigating the factors that induce the adoption of Internet payment system in particular target groups in a particular country, UTAUT and Trust models are tentatively verified. (i.e., bank consumers in Malaysia). A quantitative methods approach is utilized as the methodology contribution and a set of questionnaires is prepared to clarify the factors that influence consumers to adopt or not adopt e-payment. This study elects structural equation modelling (SEM) approach using AMOS-SPSS 16, CFA analysis moderating technique to explicate the aforementioned relationships.

1.9 Organisation of the Thesis

This thesis is separated into six chapters. Chapter 1 is the Introduction, which provides the background information on Internet payment in Malaysia and describes its relation with consumers in Malaysia, as well as the opportunities provided to businesses by its utilisation. This chapter also explains the Malaysian government policy concerning the use of Internet and e-payment, the status of the Malaysian financial industry and the utilisation status of Internet payment by the financial industry worldwide, and the issue of its adoption by Malaysian consumers. Finally, the chapter presents the objectives of the study, its importance, and the structure of this study proposal.

Chapter 2 covers the literature review on past researches related to this study. It is divided into two main parts, with the first half covering research on Internet payment. It defines the Internet payment system by describing the different classifications of the Internet payment application. The second half of the chapter provides an overview of individual technology acceptance theories and one thrust model that describes in detailthe definition, authors, context, framework, differences, strength and weaknesses of each model. Lastly, this chapter discusses concerns relating to the overall strength and weaknesses of the models studies.

Chapter 3 discusses the conceptual framework of this study. It describes the design process of the proposed research model, explaining that the model provides information on the suggested dependent, independent, mediating and moderating variables, and also gives details on the forwarded hypothesis based upon framework.

Chapter 4 describes the processes involved in the data collection. This includes the explanation concerning the population from which the data was selected (sampling framework); how the data was collected (questionnaire design); how it was measured (variables measurements) and how it was analysed (using Structural Equation Modelling).

Chapter 5 discusses the statistical analysis that involved data screening to clean the data and presents descriptive statistics of the data that provided a general picture of the survey participants and their responses to the survey questions.

Chapter 6 summarises the empirical findings and explains their implication for research and practice. In addition, the contributions of the present study are discussed together with some considerable and meaningful guidance for future research.

REFERENCES

Abbas, S. K., Hasan, H. A., Asif, J., Ahmed, B., Hasan, & Haider, S. S. (2018). Integration of TTF, UTAUT an dITM for mobile Banking Adoption. *International Journal of Advance Engineering, Management and Science*, 4-9.

Abbate, J. (2000). *Inventing the Internet.* Boston: MIT Press.

Abdul-Muhmin, A. G. (2010). Transactions size effects on consumers' retail payment mode choice. *International Journal of Retail & Distribution Management, 38*(6), 460-478.

Abrahao, R. S., Moriguchi, S. N., & Andrade, D. F. (2016). Intettion of adaption of mobile payment: An analysis in the light of the Unified Theory of Acceptance and Use of Technology (UTAUT). *RAI Revista de Administracao Inovacao*, 221-230.

Abrazhevich. (2004). *Electronic payment systems: A users-centered perspective and interaction design.*

Abrazhevich, D., Markopoulos, P., & Rauterberg, M. (2009). Designing Internet-Based payment systems: Guidelines and Empirical Basis. *Human-Computer Interaction, 24*, 408-443.

AbuShabab, E., Pearson, J. M., & Setterstrom, A. J. (2010). Internet banking and customers' acceptance in Jordan: the unified model's perspective. *Communications of the Association for Information System, 26*(1), 494-524.

Adams, A., Nelson, R., & Todd, A. (1992). Percieved Usefulness, Ease of Use and Usage of Information Technology: A Replication. *MIS Quarterly, 16*, 227-247.

Adams, D. A., Nelson, R., & Todd, P. A. (1992). Perceived usefulness, ease of use and usage of information technology: A replication. *MIS Quarterly, 16*(2), 227-247.

Agag, G. M., & El-Masry, A. A. (2017). Why do consumers trust online travel websites? Drivers and outcomes of consumer trust toward online travel websites. *Journal of Travel Research*, 347-369.

Agarawal, R., & Prasad, J. (1999). Are Individual Differences Germane to the Acceptance of New Information Technologies. *DEcision Sciences, 30*(2), 361-391.

Agarwal, R., & Karahanna, E. (2000). Time flies when you're having fun: Cognitive absorption and beliefs about information technology usage. *MIS Quarterly, 24*, 665-694.

Agarwal, R., & Prasad, J. (1997). The Role of Innovation Characteristics and Perceived Volauntariness in the Acceptance of Information Technologies. *Decision Sciences, 28*, 557-581.

Agarwal, R., & Prasad, J. (1998a). The antecedents and consequence of user perceptions in information tehnology adoption. *Decision Support Systems, 22*, 15-29.

Agarwal, R., & Prasad, J. (1998b). A conceptual and opertional definition of personal Innovativeness in the the Domain of Information Technology. *Information System Research, 9*, 204-215.

Aguinis, H. (2004). *Regression analysis for categorical moderators.* New York: Guilford Press.

Ahmad, R., & Buttle, F. (2002). Retaining telephone banking customers at Frontier Bank. *International Journal of Bank Marketing, 20*(1), 5-16.

Ahuja, M. K., & Thatcher, J. B. (2005). Moving beyond intentions and toward the theory of trying: effects of work environment and gender on post-adoption information technology use. *MIS quarterly, 29*(3), 427-459.

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl, & J. (. Beckmann, *Action Control: From Cognition to Behavior* (pp. 11-39). New York : Springer-Verlag.

Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Process, 50*, 179-122.

Ajzen, I. (2002). Perceived behavioral control, sel-eficiacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology, 32*(4), 665-668.

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predecting social behavior.* Englewood Cliff, NJ: Prentice-Hall.

Ajzen, I., & Madden, J. (1986). Prediction of goal-directed behavior: Attitudes, intentions and perceived behavioral control. *Journal of Experimental Social Pschology, 22*, 453-474.

Akhter, S. H. (2003). Digital divide and purchase intention: Why demographic psychology matters. *Journal of Economic Psychology*, 321-327.

Akinci, S., Aksoy, S., & Atilgan, E. (2004). Adoption of Internet banking among sphisticated consumer segments in an advanced developing country. *International Journal of Bank Marketing, 22*(3), 212-232.

Aladwani, A. (2001). Online banking : a field study of drivers, development challenges and expectations. *International Journal of Information Mamagement, 2*, 213-225.

Alaiad, A., & Zhou, L. (2013). Patients' Behavioral Intention toward using Healtcare Roborts. *Proceedings of the Nineteenth Americas Conference on Information Systems* (pp. 1-11). Chicago Illinois: Researchgate.net.

Alam, S. S., Musa, R., & Hassan, F. (2009). Corporate customers' adoption of Internet banking: Case of Klang Valley business firm in Malaysia. *International Journal of Business and Management, 4*(4), 13-??

Alam, S., Nor, N. M., Ali, M. H., Omar, N. A., & Wel, C. A. (2018). Relationship between enterpreneur's traits and cloud computing adoption among Malay-owned SME in Malaysia. *Guadernos De Gestion*, 115-131.

Aldas-Manzano, J., Lassala-Navarre, C., Ruiz-Mafe, C., & Sanz-Blas, S. (2009). The role of consumers innovativeness and perceived risk in online banking usage. *International Journal of Bank Marketing, 27*(1), 53-75.

Alejandro, L., Powell, J. B., Brady, S., & Wohl, I. (2010). *An Overview and Examination of the Malaysian Service Sector.* New York: United State International Trade Commission.

Al-Fahim, N. H. (2012). Factors affecting the adoption of Internet Banking amoungs IIUM Student: A structuralequation modeling approch. *Journal of Internet Banking and commerce, 17*(3), 1-14.

Al-Gahtani, S. S., Hubano, G. S., & Wang, J. (2007). Information technology (IT) in Saudi Arabia: Culture and the acceptance and use of IT. *Information & Management , 44*(8).

Allen, H. (2003). Innovation in Retail Payment : E-Payment. *Bank of England Quarterly Bulletin*, 428-438.

Allerton, H. (2001). Generation why. *T+D, 5*(11), 56-60.

Al-Qeisi, K., Dennis, C., Hegazy, A., & Abbad, M. (2015). How viable is the UTAUT model in a non-Western context? *International Business Research* , 204-212.

Alraja, M. N. (2016). The effect of social influance and facilitating donditions on e-government acceptance from the individual employees' perspective. *Polish Journal of Management Studies*, 18-27.

Al-Shafi, S. (2009). *Factors affecting e-government implementation and adoption in the State of Qatar.* West London: Brunel University.

Alshare, K. A., & Mousa, A. A. (2014). The moderating effect of espiused cultural dimesnions on consumer's intention to use mobile payment devices. *Thirty Fifth International Conference on Information Systems*, 1-15.

Alshare. K. A, & Mousa, A. A. (n.d.). The moderating effect of espoused culture dimensions on consumer's intention to use mobile payment devices . *Thirty Fifth International Conference on Information s*.

Alvesson, M., & Karreman, D. (2007). Constructing mystery: Empirical matters in theory development. *Academy of Management Review, 32*(4), 1265-1281.

Alwahaishi, S., & Snasel, V. (2013). Consumers' Acceptance and Use of INformation and Communications Technology: UTAUT and Flow Based Theoretical Model. *Journal of Technology Management and Innovation, 8*(2), 61-73.

Amin, H. (2007). Internet Banking Adoption Among Young Intellectuals. *Journal of Internet Banking and Commerce, 12*(3), 1-13.

Amin, H., Hamid, M. R., Lada, S., & Anis, Z. (2008). The adoption of mobile banking in Malaysia: The case of Bank Islam Malaysia Berhad. *International Journal of Business and Society, 9*(2), 43-53.

Anderson, E., & Weitz, B. (1989). Determinants of continuity in conventional industrial channel dyads. *Marketing Science, 8*, 310-323.

Antonelli, C. (1995). The difussion of new information technoligies and productivity growth. *Journal Evolutionary Economics, 5*, 1-17.

Anuar, M. M., Adam, F., & Mohamad, Z. (2012). Muslim Consumers' Perception on Internet Banking Services. *International Journal of Business and Social Sciences, 3*, 63-71.

AppleInc. (2013, February 6). *Apple Press Info*. Retrieved November 22, 2014, from ITunes Store sets new records with 25 Billion Songs Sold: www.apple.com

Arbuckle, J. L. (2005). *Amos 6.0 Users' Guide* . New York: Amos Development Corporation.

Armesh, H., Saljoughi, Z. S., & Kord, B. (2010). Electronic Payment and its Impilcations. *Interdisciplinary Journal of Contemporary Research in Business, 2*(8).

Arnott, D. C. (2007). Research on trust: a bibliography and brief bibliometric analysis of the special issue submissions. *Europena Journal of Marketing, 41*(9/10), 1203-1240.

Ary, D., Jacobs, L. C., & Razavieh, A. (1996). *Introduction to research in education.* Orlando, Florida: Harcourt Brace College Publisher.

ASBJ. (1998). Developing Laws in the Internet Jungle . In B. N. Malaysia, *Annual Reports 1985-1997* (Vol. 1, pp. 6-7). The Asian Banker Journal .

Attuquayefio, S., & Addo, H. (2014). Using the UTAUT model to analyze students' ICT adoption. *International Journal of Education and Developing using ICT*, 52-59.

Awad, N. F., & Ragowsky, A. (2008). Establishing trust in electronic commerce through online word of mouth: An examnination across genders. *Journal of Management Information Systems, 24*(4), 101-121.

Awamleh, R., & Fernandes, C. (2006). Diffusion of Internet banking amongst educated consumers in a high income non-OECD country. *Journal of Internet Banking Commerce, 11*(3).

Ayo, C. K., & Ukpere, W. I. (2010). Design of a security inified e-payment system in Nigeria: A case study. *African Journal of Business Management, 4*(9), 1753-1760.

Azmi, A., Ang, Y. D., & Talib, S. A. (2016). Trust and justice in the adoption of a welfare e-payment system. *Transforming Government: People, Process and Policy*, 391-410.

Ba, S., & Pavlou, P. (2002). Evidance of the Effect of Trust Building Technology in Electronic Markets: Price and Buyer Behavior. *MIS Quarterly , 26*, 243-268.

Ba, S., Whingston, A., & Zhang, H. (1999). Building trust in the electronic market using an economic incentive mechanism. *Proceeding of the 1999 International Conference on Information System.* Charlotte, NC.

Babbie, E. (1995). *The practice of social research* . Belmont, CA: Wadsworth Publishing Co.

Babbie, E. (2012). *The practice of social research.* New York: Cengage Learning.

Babbie, E. (2015). *The practice of social research.* New York: Nelson Education.

Baddeley, M. (2004). Using e-cash in the the new economy: An economic analysis of micro-payment systems. *Journal of Electronic cpmmerce Research, 5*(4), 239-253.

Bagozzi, R. (1992). The self-rgulation of attitudes, intentions an behavior. *Social Psychology Quarterly, 55*, 178-204.

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), 3-20.

Bagozzi, R., & Yi, Y. (1989). The Degree of Intention Formation as a Moderator of the Attitude: Behavior Relationship. *Social Pschology Quarterly, 52*, 266-279.

Balakrishnan, M. (2009). Improving Payment System Efficiency in India: Next Steps. *Journal of Payment Strategy and System, 3*(4), 357-379.

Banker, R., Kauffman, J., & Mahmood, M. (1993). *Strategic Information Technology Management: Perspectives on Organizational Growth and Compatitive Advantage.* Hershey, PA: Idea Group Publishing.

Barkin, S. R., & Dickson, G. W. (1977). An Investigation of Information System Utilization. *Information Management, 1*(1), 35-45.

Barley, S. R. (1986). Technology as an Occasion for Structring: Evidence for Observations of Ct Scanners and the Social Order of Radiology Departments. *Administartive Science Quarterly , 31*(1), 78-108.

Barnett, R. C., & Marshall, N. L. (1991). The relationship between women's work and family roles and their subjective well-being and psychological distress. In M. Frankenhaeuser, V. Lundberg, & M. A. Chesney, *Women, Work and Health: Stress and Opportunities* (pp. 111-136). New York: Plenum.

Barney, J. (1991). Firm Resource and Sustained Competative Advantage. *Journal of Management, 17*, 99-120.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, amd statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distintion in social psychiligical research: conceptual, strategic and statistical considerations. *Journal of Persnoality and Social Psychology*, 1173-1182.

Bartlett, J. E., Kotrlik, J. W., & Higgins, C. C. (2001). Organizational research: Determining appropriate sample size in survey research . *Information Technology, Learning and Performance Journal , 19*(1), 43.

Bartlett, M. (2004). Analyst: Understading what shape generation can help the.... *Credit Union Journal, 8*(21), 14-17.

Bauer, R. (1967). Consumer Behavior as Risk Taking. In D. Cox, *Taking and Information Handling in Consumer Behavior.* Cambridge: Harvard University Press.

Baum, M. S., & Ford, W. (1997). *Secure electronic commerce.* New York: Prentice Hall.

Becker, J., & Niehaves, B. (2007). Epistemological perspective on IS research: a framework for analysing and systemtizing epistemological assumptions. *Information System Journal, 17*(2), 197-214.

Bednall, D. H., & Shaw, M. (2003). Changing Response Rates in Australian Market Reserch. *Austaralian Journal of Market Research, 11*, 31-41.

Belanche, D., Casalo, L. V., Flavian, C., & Schepers, J. J. (2014). Trust transfer in the continued usage of public e-services. *Information & Management,* , 627-640.

Belanger, F., Hiller, S., & Smith, J. (2002). Trustworthiness in electronic commerce: the role of privacy and site attributes. *Journal of Strategic Information System, 11*, 245-270.

Benassi, P. (1999). TRUSTe: An online privacy seal program. *Communication of the ACM, 42*, 56-57.

Benbasat, I., & Barki, H. (2007). Quo Vadis, TAM? *Journal of The AIS, 8*(4), 212-218.

Benbasat, I., & Weber, R. (1996). Research commentary: rethinking 'diversity' in Information system research. *Information System Research, 7*, 389-399.

Bentler, P. M. (1990). Comparative fit indices in structural models. *Psychological Bulletin, 107*, 238-246.

Bentler, P. M., & Chou, C. (1987). Practical issues in structural modeling . *Sociological Methods and Research, 16*(August), 78-117.

Benton, J. B. (1977). Electronic Funs Transfer: Pitfalls and Payoffs. *Harvard Business Veview, 55*, 16-19.

Bhattacherjee, A. (2000). Acceptance of e-commerce services: the case of electronic brokerages. *Systems, Man and Cybernetic, Part A; System and Umuans, IEE Transactions, 30*(4), 411-420.

Bhattacherjee, A. (2001). Understanding information systems continuance: an expectation-conformation model. *MIS quarterly*, 351-370.

Bhattacherjee, A. (2002). Individual turst in Online Firm: Scale Development and Initial Test. *Journal of Management Information Systems, 19*, 211-241.

Bhattacherjee, A., & Premkumar, G. (2004). Understanding changes in belief and attitude toward information technology usage: a theoritical model and longitudinal test. *MIS quarterly*, 229-258.

Bhimani, A. (1996). Securing the commercial Internet. *Communications of the ACM, 39*(6), 29-35.

Bhole, K. (2001). *The potential of Surver-based Interntet payment system: An attempt to assess the future of Internet payments.* Seville, Spain: Institute for Prospective Technological Studies.

Bick, G., Brown, A. B., & Abratt, R. (2004). Customer perceptions of the Value Delivered by Retail Banks in South Africa. *International Journal of Bank Marketing, 22(5),* 300-318.

Bigne, E., Ruiz, C., & Sanz, S. (2005). The impact of internet user shopping patterns and demographics on consumer mobile buying behaviour. *Journal of Electronic Commerce*, 193–209.

Black, N. J., Ennew, C., Winklhofer, H., & McKechine, S. (2002). Modeling costuer choice of distribution channels: an illustration from financial services. *International Journal of Bank Marketing*, *20*(4), 161-173.

Blair, M., & Stout, A. (2000). Trust, trustworthiness and the behavioral foundations of corporate law. *I Working Paper Series.* Georgetown University Law Center.

Blau, P. M. (1964). *Exchange and power in social life.* New York: Wiley.

Bloemer, J. M., de Ruyter, K., & Peeters, P. (1998). On the relatiinship between financial institution image, quality, satisfaction and loyalty. *International Journal of Bank Marketing, 16*, 276-286.

BNM. (2014, May 24). *Bank Negara Malaysia*. Retrieved May 24, 2014, from Payment Statistic: www.bnm.gov.my

BNM. (2014, November 27). *Deputy Governor's Keynote Address at the Payment System Forum and Exhibition 20014.* Retrieved December 15, 2014, from Cental Bank of Malaysia: www.bnm.gov.my

BNM. (2015, May 15). Statement of Asset. *Monthly Statistical Bulletin*, p. 1.

BNM. (2018, July 13). *Bank Negara Malaysia*. Retrieved May 24, 2014, from Payment Statistic: www.bnm.gov.my

Boddy, D., Boonstra, A., & Kennedy, G. (2008). *Managing Information Systems: Strategy and Organization* (3rd Edition ed.). London: Prentice Hall Financial Times.

Borrero, J. D., Yusafzai, S. Y., Javed, U., & Page, K. L. (2014). Expressive participation in Internet social movements: Testing the moderating effect of technology readiness and sex on student SNS use. *Computer in Human Behavior*, 39-49.

Bossone, B., & Cirasion, M. (2001). *The oversight of the Payment Systems: A Framework for the Development and Governmenet of Payment System in Emerging Economies.* The World Bank.

Boyne, G. A., Gould-Williams, J. S., Law, J., & Walker, R. M. (2005). Explaining the adoption of Innovation: An empirical analysis of public management reform. *Enviromnent and Planning C: Government & Policy*, *23*(3), 419-435.

Brennan, M. (1992). Techniques for Improving Mail Survey Response Rates. *Marketing Bulletin, 3*, 24-37.

Brennan, M., & Charbonneau, J. (2009). Improving mail survey response rate using choclate and repalcement questionnaires. *Public Opinion Quarterly, 73*(2), 368-378.

Brennan, M., Charbonneau, J., & Hercus, A. (2007). Coffee, Tea, or Replacement Questionnaires? Improving Mail Survey Response Rates from Volunteers. *Australasian Journal of Market & Social Research , 15*(1), 17-25.

Brick, J. M., Montaquila, J. M., Han, D., & Williams, D. (2012). Improving response rate for Spanish speakers in two-phase mall surveys. *Public Opinion Quarterly*, nfs050.

Brown, S. A., Dennis, A. R., & Venkatesh, V. (2010). Predicting collaboration technology use: Integrating technology adoption and colloboration research. *Journal of Management Information System*, 9-53.

Brunner, C., & Bennet, D. (1997). Technology and gender: Differences in masculine and feminine views. *NASSP, 81*(592), 46-51.

Buchan, N. R., Croson, R. T., & Solnick, S. (2008). Trust and gender: An Examination of behavior and beliefs in the Invest Game. *Journal of Economic Behavior and Organization*, 466-476.

Buck, S. P. (1996). Electronic Commerce - Would, Could and Should you use current Internet Payment mechanisms? *Internet Research, 6*, 5-18.

Bunnell, T. (2002). Multimedia Utopia? A Geographical Critique of High-Tech DEvelopment in Malaysia's Multimedia Super Corridor. *34*(2), 264-295.

Bunner, C., & Bennett, D. (1997). Technology and Gender: Differences in Masculine and Feminine Views. *Technology and Learning*, 46-51.

Burton-Jones, A., & Gallivan, M. J. (2007). Toward a deeper understanding of system usage in organizations: a multilevel perspactive. *MIS Quarterly* , 657-679.

Burton-Jones, A., & Straub, D. W. (2006). Reconceptualizing System Usage: An Approch and Empirical . *Information System Report, 17*(3), 228-246.

Butler, J. E. (1988). Theories of Technological Innovation as useful tools for corporate strategy. *Strategic Management Journal, 9*, 15-29.

Byers, R., & Lederer, J. (2001). Retail Bank Services Strategy: A modela of Traditional, Electronic and Mix Distribution Choices. *Journal of Management Information System, 18*, 129-152.

Byler, R. (2004). What is Money? *Mid-South Collage Computing Conference* (pp. 200-209). Mid-South Collage.

Cao, X., Yu, L., Liu, Z., Gong, M., & Adeel, L. (2018). Understanding mobile payment users' continuance intention: a trust transfer perspective. *Internet Research* , 456-476.

Capgemini. (2013, December 30). *World Payment Report 2013.* Retrieved December 15, 2014, from Capgemini : www.capgemini.com/financialservices

Carbonell, M., Torres, J., Izquierdo, A., & Suarez, D. (2008). New Payment Scenario in an Extended in an Extended version of The Traditional Model. *ICCSA*, 514-525.

Carlson, R. (1971). Sex differences in ego functioning: Exploratory studies of agency and comunion. *Journal of Consulting and Clinical Psychology, 37*(2), 267-277.

Carmines, E. G., & Zellers, R. A. (1979). *Realiability and validity assessment.* Beverly Hills: Sage Publications.

Celik, H. (2008). What determines Turkish customers' acceptance of internet banking? *International Journal of Bank Marketing, 26*(5), 353-370.

Celik, H. (2016). Customer online shopping anxiety within the Unified Theory of Acceptance and Use Technology (UTAUT) framework. *Asia Pacific Journal of Marketing and Logistics*, 278-307.

Cennamo, L., & Gardner, D. (2008). Generational differences in work values, outcomes and person-organization values fit. *Journal of Managerial Psychology, 23*(8), 891-906.

Chan, K. Y., Gong, M., Xu, Y., & Thong, J. Y. (2008). Examining User Acceptance of SMS: An Empirical Study in China and Hong Kong. *Proceedings of 12th Pacific Asia Conference on Information System* (pp. 3-7). China: Suzhou.

Chan, S. C., & Lu, M. T. (2004). Understanding internet banking adoption and use behavior: a HongKong perspective. *Journal of Global Information Management, 12*(3), 21-43.

Chan, Y. E. (2000). IT Value: The great divide between qualitative and quantative and individual and organizational measures. *Journal of Management Information Systems, 16*(4), 225-261.

Chan, Y. E. (2000). The Great Divide Between Qualtitative and Quantitative and Individual and organizational measures. *Journal of Management Information Systems, 16*(4), 225-261.

Chandra, S., Srivastava, S. C., & Theng, Y. L. (2010). Evaluating the role of trust in consumer adoption of mobile payment systems: An empirical analysis. *CAIS*, 561-588.

Chang, I. C., Hung, W. F., & Li, Y. C. (2007). Physicians' Acceptance of Pharmacokinetics-basde Clinical DEcision Support Systems. *Expert System with Applications, 33*(2), 296-303.

Chang, I.-C., Hwang, H.-G. L., Li, Y.-C. L., & Chang, Y. (2007). Physicians' acceptance of pharmacokinetics-based clinical decision support systems. *Expert Systems with Applications*, 18-27.

Chang, M. K., Cheung, W., & Lai, V. S. (2005). Literature derived reference models for the adoption of online shopping. *Information & management, 42*, 543-559.

Chang, P. V. (2004). *The validity of an extended technology acceptance model (TAM) for predicting intranet/portal usage.* Chapel Hill, NC: University of North Carolina.

Chau, P. Y., & Poon, S. (2003). Octopus: an e-cash payment system success story. *Communications of the ACM, 46*(9), 129-133.

Chau, P., & Hu, P. (2001). Information Technology and Acceptance by individual professionals: A model comparison approach. *Decision Sciences, 32*, 699-710.

Chaum, D. L. (1981). Untraceble electronic mail, return, addresses and digital pseudonyms. *Communications of the ACM, 24*(2), 89-90.

Chellappa, R., & Pavlou, P. (2002). Perceived Information Security, Financial Liability and Consumer Trust in Electronic Commerce Transactions. *Juornal of Logistics Information Management, 15*, 358-368.

Chen, L., Gillenson, M. L., & Sherrell, D. L. (2002). Enticing online consumers: An extended technology acceptance perspective. *Information & Management, 39*, 705-719.

Chen, W., & Hirschheim, R. (2004). A paradigm and methodological examination of information system research from 1991 to 2001. *Information Systems Journal, 14*, 197-235.

Chen, Y. H., & Barnes, S. (2007). Initial trust and online buyer behavior. *Industrial Management & Data Systems, 107*(1), 21-36.

Chen, Y., Chou, J. S., Sun, H. M., & Cho, M. H. (2011). A novel electronic cash system with trustee-based anonymity revocation from pairing. *Electronic Commerce Research and Applications, 10*(6), 673-681.

Cheng, T. C., Lam, D. Y., & Yeung, A. C. (2006). Adoption of Internet banking: an empirical study in Hong Kong. *Decision Support Systems, 42*(3), 1558-1572.

Cheskin Research, S. A. (1999, March 02). Retrieved March 02, 1999, from eCommerce Trust Study: http://www.studioarchetype.com/cheskin/

Cheung, C. M., & Lee, M. K. (2006). Understanding consumer trust in internet shooping: a multidisciplinary approch. *Journal of the American Society for Information Science and Technology, 57*(4), 479-492.

Cheung, C., & Lee, O. (2000). Trust in Internet shopping: A proposed model and measurement instrument. *Proceeding of the 6th Americas Conference on Information system.* Long Beach CA.

Cheung, W., Chang, M. K., & Lai, V. S. (2000). Prediction of Internet and World Wide Web usage at work: a test of an extended Triandis model. *Decision Support Systems*, 83-100.

Chi, S. Y., Grant, K., & Edgar, D. (2007). Factors effecting the adoption of internet banking in Hong Kong: Implications for the banking sectors. *International Journal of Information Management, 27*, 336-351.

Chin, W. W., & Todd, P. A. (1995). On the Use, Usefulness, and Ease of Use of Structural Equation Modeling in MIS Research - A Note of Caution. *MIS Quarterly*, 237-246.

Chiu, C. M., Wang, E. T., Fang, Y. H., & Huang, H. Y. (2014). Understanding customers' repeat purchase intentions in B2C e-commerce: the roles of utilitarian value, hedonic value and perceived risk. *Information Systems Journal*, 85-114.

Chong, A. Y., Ooi, K. B., Lin, B., & Tan, B. I. (2010). Online banking adoption: An empirical analysis. *International Journal of Bank Marketing, 28*(4), 267-287.

Chou, D., & Chou, A. Y. (2000). A guide to the Internet revolution in banking. *Information System Management , 17*(2), 51-70.

Christie, B. (1981). *Face to File Communication: A Psychological Approch Information System.* New York: Wiley.

Chuan, C. L. (2006). Sample size estimation using Krejcie and Morgan and Cohen statistical power analysis: a comparison. *Journal Penyelidikan IPBL, 7*, 1675-1643.

Clay, K., & Strauss, R. (2000). Trust, risk and electronic commerce: nineteenth century lessons fro the. *Procedding of the 93rd Annual Conference on Taxation.* National Tax Association .

Clemons, E. K., Gu, B., & Lang, K. R. (2002). Newly vulnerable markets in an age of pure information products: an analysis of online music and online news. *Journal of Management Information Systems, 19*(3), 17-41.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* Hillsdale: NJ: Lawrence Erlbaum Associates, Publishers.

Cohen, J. (1992). Quantitative methods in psychology: A power primer. *Psychological Bulletin, 112*(1), 155-159.

Coleman, J. S. (1984). Introducing social structure into economic analysis. *America Economic Review, 74*, 84-88.

Collier, J. E., & Sherrell, D. L. (2010). Examining the influance of control and convenience in a self-service setting. *Journal of the Academy of Marketing Science, 38*(4), 490-509.

Coman, A., & Ronen, B. (1995). Information Technology in operation management: a theory of constrainst approch. *Internation Journal of Production Research, 33*(5), 1403-1415.

Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. *MIS quarterly*, 189-211.

Cooper, D. R., & Schindler, P. S. (2011). *Business research method* (7th Edition ed.). New York: McGraw-Hill.

Cotteleer, M. J., Cotteleer, C. A., & Prochnow, A. (2007). Cutting Checks: Challenges and Choice in B2B E-payment. *Communications of The ACM, 50(6)*, 56-61.

Cowart, K. O., Fox, G. L., & Wilson, A. E. (2008). A structural look at consumers innovativeness and self-congruence in new product purchases. *Psychology & Marketing, 25*(12), 1111-1130.

Cox, B. G., Binder, D. A., Chinnappa, B. N., Christianson, A., Colledge, M. J., & Kott, P. S. (1995). *Business Survey Methods.* New York: John Wiley and Sons.

Cox, D. F., & Rich, S. U. (1964). Perceived and sonsumer decision-making: The case of telephone shopping. *Journal of Marketing Research* , 32-39.

Crede, A. (1996). Electronic commerce and the banking industry: The required nad opportunities for new payments systems using the Internet. *The journal of Computer-Mediated Communication, 1*(3).

Cresswell, J. W. (2009). *Research Design: Qualitative, quantitative and Mixed Methodes Approches* (3rd Edition ed.). California: Sage Publication.

Cresswell, J. W., & Cresswell, J. D. (2017). *Research Design: Qualitative, quantitative and Mixed Methodes Approches* (3rd Edition ed.). California: Sage Publication.

Creswell, J. W. (2012). *Qualittative inquiry and research design: Choosing amoung five approches.* California: Sage Publications.

Culnan, J., & Armstrong, K. (1999). Information privacy concerns, procedural fairness and impersonal turst: An empirical investigation. *Organization Science, 10*, 104-115.

Cunningham, L. F., Gerlach, J., & Harper, M. D. (2005). Perceived risk and e-banking services: an analysis from the perspective of the consumer. *Journal of Financial Services: an analysis from the perspective of the consumer, 10*(2), 165-78.

Curtin, R., Presser, S., & Singer, E. (2005). Chenage in Telephone Survey Non-response over the Past Quarter Century. *Public Opinion Quarterly, 69*, 87-98.

Dabholkar, P. A., & Bagozzi, R. P. (2002). An Attitudinal Model of Technology-Based Self-Service: Moderating Effects of Consumer Traits and Situational Factors. *Journal of the Academy of Marketing Science, 30*(3), 184-201.

Dai, X., & Grundy, J. (2007). An off-line, decentralized micro-payment system for thin-client application. *Electronic Commerce Research and Applications, 6*(1), 91-101.

Daniel, E. (1999). Provision of electronic banking in the UK and the Repbulic of Ireland. *International Journal of Bank Marketing, 17*(2), 72-82.

Das, K. (1998). Between trust and control: Developing confidence in partner cooperation in alliance. *Academy of Management Review, 23*, 491-513.

Dasgupta, S., Paul, R., & Fuloria, S. (2011). Factors affecting behavior intentions toward mobile banking usage: Empirical evidence from India. *Romanian Journal of Marketing, 3*(1), 6-28.

Datta, P. (2011). A preliminary study of e-commerce adoption in developing countries. *Information System Journal, 21*(1), 3-32.

Davies, J., Foxall, G., & Pallister, J. (2002). Beyond the intention-behavior mythology: an integrated model of recycling. *Marketing Theory, 2*, 29-113.

Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*, 319-340.

Davis, F. D. (1993). User Acceptance of Information System: System charecteristic, user perception and behavioral impact. *International Journal Man-Machine Study*(38), 475-487.

Davis, F. D., & Venkatesh, V. (2004). Toward preprototype user accepatance testing of new information system: Implication of software project management. *IEEE Transactions on Engineering Management, 51*(1), 31-46.

Davis, F., Bagozzi, R. P., & Warshaw, P. R. (1992). Extrinsic and Intrinsic Motivation to Use Computers in the Workplace. *Journal of Applied Social Psychology, 22*(14), 1111-1132.

Davis, F., Bagozzi, R., & Warshaw, P. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoritical Models. *Management Science, 35*, 982-1003.

Dayal, S., Landesbeg, H., & Zeisser, M. (1999). How to build turst online. *Marketing Management , 8*, 64-69.

De Leeuw, E., Callegaro, M., Hox, J., Korendijk, E., & Lensvelt-Mulders, G. (2007). The influance of advance letters on response in Telephone Survers a Meta-Analysis. *Public Opinion Quarterly , 71*(3), 413-443.

Deal, J. J., Altman, D. G., & Rogelberg, S. G. (2010). Millenials at work: What we know and what we need to do (if anything). *Journal of Psychology, 25*(2), 191-199.

Deffuant, G., Huet, S., & Amblard, F. (2005). An Individual-Based Model of Innovation Diffusion Mixing Socal Value and Individual Benefit. *American Journal of Sociology, 110*(4), 1041-1069.

Deitel, H. M., Deitel, P. J., & Nieto, T. R. (2002). *Internet & World Wide Web.* New Jersey: Prentice Hall.

Delafrooz, N., Paim, L. H., & Khatibi, A. (2011). Understanding consumer's Internet purchase in Malaysia. *African Journal of Business Management, 5*(3), 2837-2846.

Dellarocas, C. (2001). Building Trust Online: The design of reliable reputatation reporting mechanisms for online trading communities . *Working Paper 101.* Cambridge, AM: Sloan School of Management, MIT.

DeLone, W. H. (2003). The DeLeon and McLean Model of information system success: a ten-year update. *Journal of Management Systems, 19*(4), 9-30.

Delone, W. H. (2003). The DeLone and McLEan model of information systems success: a ten-year update . *Journal of management information system, 19*(4), 9-30.

DeLone, W. H., & McLean, E. R. (1992). Information System Sucess: The quest for the dependent variable. *Information System Research, 3*(1), 60-95.

Deng, Z., Lu, Y., Wei, K. K., & Zhang, J. (2010). Understanding customer satisfaction and loyalty: An empirical study of mobile instant messages in China. *International journal of information management*, 289-300.

Department of Statistics Malaysia. (2018, July 14). *Department of Statistics Malaysia, Official Portal*. Retrieved from Statistic: Population and Demography: https://www.dosm.gov.my/v1/index.php?r=column/cone&menu_id=Nk1JZnJBMm1TdmRFS0xaTXZnanIrQT09

DeSanctis, G., & Poole, M. S. (1994). Capturing the Complexity in Advabced Technology Use: Adaptive Structuration Theory. *Organization Science, 5*(2), 121-147.

Deutsch, M. (1960). The effect of motivational orientation upon trust and suspicion. *Human Relations, 13*, 123-140.

Devaraj, S., & Kohli, R. (2003). Performance impact of Infromation technology: Is actual use the messing link? *Management Science, 49*(3), 273-289.

Dholakia, R. R. (2006). Gender and IT in the household: Evolving patterns of Internet use in the United States. *The Information Society, 22*(4), 231-240.

DiDio, L. (1998). Beta testers endorse e-checks. *Computerworld, 32*, 57.

DigitalMalaysia. (2014, May 24). *Digital Malaysia*. Retrieved May 24, 2014, from What is Digital Malaysia: www.digitalmalaysia.my

Dillman, D. A. (2000). *Mail and Internet Surveys: The Tailored Design Method.* New York: Wiley.

Dillon, W. A., Kumar, A., & Mulani, N. (1987). Offending estimates in convariance structure analysis: Comments on the causes and solutions to Heywood cases. *Psychological Bulletin*, 126-135.

DiMaggio, P. J. (1995). "What Theory Is Not: Comments". *Administrative Science Quarterly, 40*(3), 391-397.

Dimitriadis, S., & Kyrezis, N. (2011). The effect of trust, channel technology and transaction type on the adoprion of self-service bank channels. *The Service Industries Journal, 31*(8), 1293-1310.

Dishaw, M. T., & Strong, D. M. (1999). Extending the Technology Acceptance Model with Tasktechnology Fit Constructs. *Information and Management, 36*(1), 9-21.

Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of price, brand, and store information on buyers' product evaluation. *Journal of marketing research*, 307-319.

Doll, W. J., & Torkzadeh, G. (1998). Developing a multidimensional measure of system-use in an organizational context. *Information System, 33*(4), 171-185.

Doney, M., & Cannon, P. (1997). An Examination of the nature of trust in buyer-seller relationship. *Journal of Marketing, 61*, 35-51.

Druten, E., Sawan, R., Wilson, D., Sullivan, W., & Kanchan, A. (2013, October 15). *Capgemini.* Retrieved May 26, 2014, from Trends in the global bank industry 2013: www.capgemini.com

Dunbar, K., & Fugelsang, J. (2005). Scientific thinking and reasoning. In K. J. Holyoak, & R. G. Morris, *The Cambridge handbook of thinking and reasoning* (pp. 705-725). Cambridge, England: Cambridge University Press.

Duric, Z., Maric, O., & Gasevic, D. (2007). Internet Payment System: A New Payment system for Internet TranscationsJan. *Journal of Universal Computer Science, 13*(4), 470-503.

Dwivedi, Y. K., Rana, N. P., Jeyaraj, A., Clement, M., & Willuams, M. D. (2017). Re-examining the unified theory of acceptance and use of technology (UTAUT): Toward a revised theoretical model . *Information Systems Frontiers*, 1-16.

Dwyer, F., Schurr, H., & Oh, S. (1997). Output sector munificence effects on the internal polotical economy of marketing channels. *Journal of Marketing Research, 24*, 347-358.

Eagly, A., & Chaiken, S. (1993). *The Psychology of Attitudes.* Fort Worth, TX: Harcourt Brace Jovanovich.

Earle, J., & Cvetkovich, G. (2000). Socil trust and culture in risk management. In G. Cvetkovich, & R. Lofstedt, *Social Truts and the Management of Risk.* Earthscan Press.

Easingwood, C. J., & Storey, C. (1997). The value of multi channel distribution systems in the financial services sector. *Service Industries Journal, 16*(2), 223-224.

Easley, R. F., Devaraj, S., & Crant, J. M. (2003). Relating Collaborative Technology Use to Teamwork Quality and Performance: An Empirical Analysis. *Journal of Management Information Systems, 19*(4), 249-270.

Ecommerce-europe. (2012, April 1). *Report Ecommerce Europe Online Payment 2012.* Retrieved December 16, 2014, from Ecommerce Europe: www.ecommerce-europe.eu/stream/report-online-payments-2012

Einwiller, S., & Will, M. (2001). The role of reputation to engender trust in electronic markets. *Proceedings of the 5th Intentional Conference on Corporate Reputation, Identity and Competitiveness.* Paris.

Eisenstadt, S. N. (1968). *Max weaer on charisma and institution buidling.* Chicago: Chicago Univeristy Press.

Elliot, S., & Loebbecke, C. (2000). Interactive, Interorganizational Innovations in Electronic Commerce. *Information Technology and People, 13(1)*, 46-67.

eMarketer. (2013, June 27). *B2C Ecommerce Climbs Worldwide, as Emerring Markets Drive Sales Higher*. Retrieved May 16, 2014, from eMaketer: http://www.emarketer.com

Ennew, C., Wright, M., & Watkins, T. (1989). Personal financial services: marketing strategy determination. *International Journal of Bank Marketing, 7*(6), 3-8.

Eriksson, K., Kerem, K., & Nilsson, D. (2005). Customer acceptance of internet banking in Estonia. *The International Journal of Bank marketing, 23*(2/3), 200-215.

EScobar-Rodriguez, T., & Carvajal-Trujillo, E. (2014). Online purchasing tickets for low cost carriers: A application of the united theory of acceptance and use of technology (UTAUT). *Tourism Management*, 70-88.

Evans, D. (2011, April 1). *The Internet of Thinngs: How the Next Evolution of the Internet is Changing Everything.* Retrieved May 16, 2014, from Cisco Internet Business Solution Group: http://www.cisco.com

Eveland, J. D. (1986). Diffusion, Technology Transfer and Implementation: Thinking and talking about change. *Science Communication, 8*(2), 303-322.

Eveland, J. D. (1986). Diffusion, Technology Transfer, and Impelementation Thinking and Talking about change. *Science Communication, 8*(2), 302-322.

Eze, U. C., Yaw, L. H., Manyeki, J. K., & Har, L. C. (2011). Factors affecting Internet Banking Adoprtion among Young Adults: Evidance from Malaysia. *International Proceddings Economic Development Research, 5*(1).

Fang, K. (1998). An analysis of electronic-mail usage. *Computer in Human Behavior*, 349-374.

Faqih, K. M., & Jaradat, M. I. (2015). Assessing the moderating effect of gender differences and individualism-collectivism at individual-level on the adoption of mobile commerce technology: TAM3 perspective. *Journal of Retailing and Consumer Services*, 35-52.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior. A introduction to theory and research.* Reading, MA: Addison-Wesley.

Flavian, C., Guinaliu, M., & Torres, E. (2005). The influance of corporate image on consumer trust: A comparative analysis in traditional versus interntet banking. *Internet Research, 15*(4), 447-470.

Fogg, J., Marshall, J., Laraki, O., Osipovich, A., Varma, C., Fang, N., . . . Treinen, M. (2001). What Makes Web Sites Credibel? A Report on a Large Quantitative Study. *ACM SIGCHI, 3*, 61-67.

Forbes. (2013, July 1). *How Many Things Are Currently Connected To The "Internet of Things" (IoT)?* Retrieved May 16, 2014, from Forbes: http://www.forbes.com

Forsythe, S., Liu, C., Shannon, D., & Gardner, L. (2006). Development of a scale to measure the perceived benefits and risks of online shopping. *Journal Interaction Marketing*, 55–75.

Fowler, F. J. (2014). *Survey Research Methods.* New York: Sage Publication.

Fox, R. J., Crask, M. R., & Kim, J. (1988). Mail Survey Response Rate: A Meta-Analysis of Selected Techniques for Improving Response. *Public Opinion Quarterly, 52*, 467-491.

Foxall. (2003). The behaviour analysis of consumer choice: an introduction to the special issue. *Journal of Economic Psychology, 24*, 581-588.

Foxall, G. R. (1997). *Marketing Pschology.* London: Macmillan.

Futrell, C. M., & Lamb, W. L. (1974). Effective on Mail Survey Return Rates of Including Questionnaires with Follow-up Letters. *Perceptual and Motor Skills, 52*, 11-15.

Gable, G. G., Sedera, D., & Chan, T. (2008). Re-conceptualizing information system success: the IS-impact measurement model. *Journal of the Association for Information Systems, 9*(7), 18.

Gallagher, D., Ting, L., & Palmer, A. (2008). A journey into the unknown: Taking the fear oit of structural equation modeling with AMOS for the first-time user . *The Marketing Review*, 255-275.

Ganesan, S. (1994). Determinanats of Long-term orientation in Buyer-Seller Relatinships. *Journal of Marketing, 58*, 1-19.

Gao, Y. (2005). Interctivity and amusement in electronic commerce. *Encyclopedia of Information Science and Technology, III*, 1607-1611.

Garson, G. D. (2012). *Hierarchial linear modeling.* SAGE.

Gefen, D. (2000). E-Commerce: The Role of Familirity and Trust. *Omega: The International Journal of Management Science, 28*, 725-737.

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

Gefen, D. R., Warkentin, M., & Pavlou, P. (2004). Cultural Diversity and Turst in IT Adoption: A Comparison of USA and South African e-Voters. *Journal of Global Information Systems, 13*, 54-78.

Gefen, D., & Heart, T. (2006). On the need to include national culture as a senteral issue in e-commerce trust beliefs. *Journal of Global Systems, 14*(4), 1-30.

Gefen, D., & Straub, D. (1997). Gender Difference in the Perception and Use of E-Mail: An Extension to the Technology Acceptance Model. *MIS Quarterly, 21*, 389-400.

Gefen, D., & Straub, D. (2000). The Realitive Importance of Perceived ease of use in IS adoption: A study of E--commerce adoption. *Journal of The AIS, 1*, 1-28.

Gefen, D., Benbasat, I., & Pavlou, P. A. (2008). A research agenda for trust in online environments. *Journal of Management Information Systems, 24*(4), 275-286.

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in Online Shipping. *MIS Quarterly , 27*, 151-169.

Gendall, P. (2000). Responding to the Problem of Nonresponse. *Australasian Journal of Marketing Research, 8*, 3-18.

Gendall, P., Leong, M., & Healey, B. (2005). The Effect of Pre-paid Non-monetary Incentives in Mail Surveys. *ANZMA 2005 Conference* (p. CDROM). Australia: Free-mantel.

Gentry, L., & Calantone, R. (2002). A comparison of Three Models to Explain Shop-Bot use on the web. *Psychology and Marketing, 19*(11), 945-956.

Geogescu-Roegen, N. (1958). The nature of expectations and uncertainty . In Bowman, & M. J., *Expectations, Uncertainty and Business Behavior*. New York: Social Science Research Council.

Gerrard, P., & Cunningham, J. B. (2003). Diffusion of Internet banking in Singapore. *International Journal of Bank Marketing, 21*(1), 16-28.

Gerrard, P., Cunningham, J. B., & Devlin, J. F. (2006). Why consumers are not using internet banking. *Journal of Services Marketing, 20*(3), 160-168.

Gill, S., Stockard, J., Johnson, M., & Williams, S. (1987). Measuring gender differences: The expressive dimension and critique of androgyny scale. *Sex Roles, 17*, 7-8.

Giovanis, A. N., Binioris, S., & Polychronopolus, G. (2012). An extension of TAM Model with IDT and security/privacy risk in the adoption of internet banking services in Greece. *EuroMed Journal of Business , 7*(1), 24-53.

Glassman, S., Manasse, M., Abadi, M., Gauther, P., & Sobalvarro, P. (1995, July). *The millicent protocol for inexpensive commerce.* Retrieved May 2, 2014, from 4th International WWW Conference: www.w3.org

Goh, D. (2011, April 22). *PayPal Reveals Malaysian Online Shoping Trends*. Retrieved August 25, 2014, from Malaysia Hardware Zone.com: http://www.hardwarezone.com.my/

Golembiewski, R. T., & McConkie, M. (1975). The centerality of interpersonal trust in group process. In C. L. Cooper, *Theories of group processes* (pp. 131-185). New York: Wiley.

Golembiewski, R., & McConkie, M. (1975). The centerality of interpersonal trust in group processes. In G. Cooper, *Theories of group process* (pp. 131-185). London: John Wiley and Sons.

Gonzalez, A. G. (2004). PayPal: The legel status of C2C payment systems. *Computer Law and Security Review, 20*(4), 293-299.

Goodhue, D. L. (2007). Comment on Benbasat and Barki's "Quo Vadis TAM" article. *Journal of the Association for Information Systems, 8*(4), 15.

Goodhue, D. L., & Thompson, R. L. (1995). Task-technology fir and individual performance. *MIS quarterly*, 213-236.

Gopalakrishnan, S., & Damanpour, F. (1997). A Review of Innovation Research in Economics, Seciology and Technology Management. *International Journal of Management Science, 6*(1), 15-28.

Gounaris, S., & Koritos, C. (2008). Investigating the drivers of Internet banking adoption decision: A comparison of three alternative framework. *International Journal of Bank Marketing, 26*(5), 282-304.

Grabner-Krauter, S., & Faullant, R. (2008). Consumer acceptance of internet banking: the influence of internet trust. *International Journal of banking marketing, 26*(7), 483-504.

Grabner-Krauter, S., & Kaluschas, E. A. (2003). Empirical research in on-line trust: a review and critical assessment. *International Journal of Human-Computer Studies, 58*(6), 783-812.

Granovetter, S. (1985). Economic action and social structure. *American Journal of Sociology, 91*, 481-510.

Guba, E., & Lincoln, Y. (1998). Competing paradigmsin qualitative research . In N. Denzin, & Y. Lincoln, *The landscape of qualitative research: theories and issues* (pp. 195-220). London: Sage.

Gupta, B., Dasgupta, S., & Gupta, A. (2008). Adoption of ICT in a Government Organization in a Developing Country: An Empirical Study. *Journal of Strategic Information Systems, 17*(2), 140-154.

Gurau, C. (2002). Online banking in transition economies: The implementation and development of inline banking system in Romania. *The International journal of Banking Marketing, 20*, 285-296.

Guriting, P., & Nudbisi, N. O. (2006). Borneo online banking: Evaluating customer perception and behavioral. *Management Research News, 29*(1/2), 6-15.

Hair, J. F., Bush, R. P., & Ortinau, D. J. (2003). *Marketing Research - Within a Changing Information Environment* (2nd edition ed.). New York: McGraw-Hill/Irwin.

Hair, J. F., Hult, G. T., Ringle, C., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM).* London: Thousand Oaks.

Hair, J. F., Tatham, R. L., Anderson, R. E., & Black, W. (2006). *Multivariate data analysis.* Upper Saddle River, NJ: Pearson Prentice Hall.

Haque, A. K., Tarofder, A. K., Rahman, S., & Raquib, M. (2009). Electronic transaction of internet banking and its perception of Malaysian online customers. *African Journal of Business Management, 3*, 248-259.

Hardgrave, B. C., Davis, F. D., & Reimenschneider, C. K. (2003). Investigating determinants of software developers' intention to follow methodologies. *Journal of Management Information System, 20*(1), 123-151.

Harris, H., Guru, B. K., & Avvari, M. V. (2011). Evidance of Firms' Perceptions Toward Electronic Payment Systems (EPS) in Malaysia. *International Journal of Business & Information, 6*(2), 226-245.

Hartwick, J., & Barki, H. (1994). Explaining the role of user participation in information system use. *40*(4), 440-465.

Harvey, L. (1987). Factors Affecting Response Rates to Mailed Questionnaires: A Comprehensive Literature Review. *Journal of Market Research Society, 29*, 341-353.

Harwood, M. (2002). Talking to the generations: How to market to different age groups. *Community Banker, 11*(7), 28-33.

Hawes, J., Kenneth, E., & Swan, J. (1989). Trust earning perceptions of sellers and buyers. *Journal of Personal Selling and Sales Management, 9*, 1-8.

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical Mediation Analysis in the New Millennium. *Communication Monographs*, 408-420.

He, F., & Mykytyn, p. p. (2007). Decision factors for the adoption of an online payment system by customers. *International Journal of E Business Research, 3*(4), 1-32.

Heaney, J. G. (2007). Generations X and Y'sinternet banking usage in Australia. *Journal of Financial Services marketing, 11*(3), 196-210.

Heberlein, T. A., & Baumgartner, R. (1978). Factors Affecting Response Rates to Mailed Questionnaires: A Qualitative Analysis of the Published Literature. *Amercan Sociological Review, 43*, 447-462.

Heikkinen, P., & Iivarinen, T. (2011). Ensuring trust in electronic payment media. *Journal of Payments Strategy & Systems, 5*(2), 161-168.

Heng, S. (2004). E-payments: modern complement to traditional payment systems. *Economics: Digital Economy and structural change*, (44), 1-8.

Hernandez-Murillo, R., Llobet, G., & Fuentes, R. (2010). Strategic online banking adoption. *Journal of Banking & Finance, 34*(7), 1650-1663.

Hirschheim, R. (2007). Introduction to the special Issue on "Quo Vadis TAM-Issues and Reflections on Technology Accpetance Research. *Journal of the Association for Information Systems, 8*(4), 9-12.

Hirschheim, R., & Klein, H. K. (1989). Four paradigms of information systems development. *Communications of the ACM, 32*(10), 1199-1216.

Ho, S. S., & Ng, V. T. (1994). Customers' Risk Perceptions of Electronic Payment System. *International Journal of Bank Marketing, 12(8)*, 26-38.

Hoffman, D. L., Novak, T. P., & Chartterjee, P. (1995). Commercial scenarios for the web: Opportunities and challenges. *Journal of Computer-Mediated Communication, 1*(3), 10-20.

Hoffman, D., Novak, T., & Peralta, M. A. (1999). Building Consumer Trust Online. *Communication of The ACM, 42*, 80-85.

Hofstede, G. (1980). *Culture's consequences: International differences in work related values*. London: Sage.

Holspple, C. W., & Sasidharan, S. (2005). The dynamics of trust in B2C e-commerce: a research model and agenda. *Information Systems E-business Management, 3*(4), 377-403.

Hong, S. J., Thong, J. Y., & Tam, K. Y. (2006). Understanding Continue Information Technology Usage Behavior: A Comparison of Three Models in the Context of Mobile Internet. *Deccision Support Systems, 42*(3), 1819-799.

Hong, S., & Tam, K. Y. (2006). Understanding the adoption of multi-purpose infomation appliances: The case of mobile data services. *Information Systems Research, 17*, 162-179.

Horovitz, B. (2012, April 15). *USA Today*. Retrieved March 22, 2015, from After Gen X< Millennials, what should next generation be?: www.usatoday.com

Hosmer, L. (1995). Trust: the connecting link between organizational theory and philosophical ethics. *Academy of Management Review, 20*, 379-403.

Howcrof, B., Hamilton, R., & Hewer, P. (2002). Consumer attitude and the usage and adoption of home-based banking in the United Kingdom. *International Journal of Bank Marketing, 20*(3), 111-121.

Hsia, J. W., Chang, C. C., & Tseng, A. H. (2014). Effects of individuals' locus of control and computer self-efficacy on their e-learning acceptance in high-tech companies. *Behaviour & Information Technology*, 51-64.

Hsu, C.-L., & Lu, H. (2007). Consumer behavior in online game communities: a motivational factor perspective. *Computers in Human Behavior*, 1642-1659.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional creteria versusu new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 1-55.

Hu, P., Chau, P., Sheng, O., & Tam, K. (1999). Examining the Technology Acceptance Model Using Physician Acceptance of Telemedicine Technology. *Journal of Managemen Information System, 16*, 91-112.

Huam, H. T., Khalil, M. N., Eng, T. Y., Khor, J. H., Lim, Y. M., & Tan, L. Y. (2008). Predictors of intention to continue using Internet banking service: An empirical study of current users. *Internetional Journal of Business and Information, 3*(1), 233-244.

Humphrey, D. B., Pulley, L. B., & Vesala, J. M. (1996). Cash, Paper and Electronic Payment: A Cross- Country Analysis. *Journal of Money, Credit and Banking, 28*(4), 914-939.

Hung, P. S. (2006). Continued use of a Chinese online portal: an empirical study. *Behavioral & Information Technology, 27*(3), 201-209.

Hunt, S. D., Sparkman Jr, R. D., & Wilcox, J. B. (1982). The pretest in survey research: Issues and preliminary findings. *Journal of Marketing Research*, 269-273.

Husted, B. W. (1989). Trust in business relations: Directions for empirical research. *Business and Professional Ethics Journal, 8*(2), 23-40.

Iacobucci, D. (2008). *Mediation Analysis.* Thousand Oaks: SAGE Publication, Inc.

Igbaria, M., & Tan, M. (1997). The consequences of information technology acceptance on subsequent individual performance. *Information and management, 32*(3), 133-121.

Igbaria, M., Iivari, J., & Maragahh, H. (1995). Why di Individuals use Computer Technology? A Finish Case Study. *Information and Management, 29*, 22-238.

Im, I., Hong, S., & Kang, M. S. (2011). An international comparison of technology adoption: Testing the UTAUT model. *Information and Management, 48*(1), 1-8.

IMF. (2013). *Malaysia: Financial Sector Stability Assessment.* Washington: International Monetory Fund.

InternetWorldStats. (2014, February 9). *Malaysia Internet usage and marketing reports*. Retrieved May 24, 2014, from Internet World Stats: Usage and population Statistic: www.internetworldstats.com

Ives, B., & Learmonth, G. P. (1984). The information system as competitive weapon. *Communication of the ACM, 27*(12), 1193-1201.

Jackson, C. M., Chow, S., & Leitch, R. A. (1997). Toward an understanding of the behavioral intention to use an information system. *DEcision Sciences, 28*(2), 357-389.

Jackson, J. D., Yi, M. Y., & Park, J. S. (2013). An empirilcal test of three mediation models for the relationship between personal innovativeness and user acceptance technology. *Information & Management, 50*(4), 154-161.

Jano, Z., Janor, H., Rajendraan, E., & Saad, M. S. (2011). E-banking adoption strategies among the academicians: the case of Malaysia. *Proceedings of the 6th Annual London Business Research Conference, South Kensington.* London: Association of Consumer Research.

Jaruwachirathanakul, B., & Fink, D. (2005). Internet Banking adoption strategies for a developing country: The case of Thailand. *Internet Research, 15*(3), 195-311.

Jarvenpaa, S. L., & Tractinsky, N. (1999). Consumer trust in an Internet Store: A cross-culture validation. *Journal of Computer Mediated Communication, 51-36*.

Jarvenpaa, S. L., Shaw, T. R., & Staples, D. S. (2004). Toward contextualized theories of trust: The role of trust in global virtual teams. *Information system research, 15*(3), 250-267.

Jarvenpaa, S., & Tractinsky, N. (1999). Consumers trust in an Internet store: A cross-cultural validation . *5*, 1-36.

Jarvenpaa, S., Knoll, K., & Leidner, D. (1998). Is anybodyout there?: The implications of turst in global virtual teams. *Journal of Management Informaton System, 14*, 29-64.

Jarvenpaa, S., Tractinsky, N., & Vitale, M. (2000). Customer Trust in an Internet Store. *Information Technology and Management, 1*, 45-71.

Jayawardhena, C., & Foley, P. (2000). Changes in the banking setor: The case of Internet banking in the UK. *Internet Research: Electronic Networking Applications and Policy, 10*(1), 19-30.

Jayawardhena, C., Kuckertz, A., Karjaluoto, H., & Kautonen, T. (2009). Antecedents to permission based mobile marketing: an initial examination. *European Journal of Marketing* , 473–499.

Jen, W., Lu, T., & Liu, P. T. (2009). An integrated analysis of technology acpetance behaviour models: Comparison ot three major models. *MIS Review, 151*, 89-121.

Jobber, D., Saunders, J., & Mitchell, V. W. (2004). Pre-paid Monetary Incentive Effects on Mail Survey Response. *Journal of Business Research, 57*, 347-350.

John, D. R., & Cole, C. A. (1986). Age differences in information processing: understanding deficits in young and elderly consumers. *Journal of Consumer Research*, 297-315.

John, G. (2006). The essential impact of context on organizational behavior. *Academy of management review, 31*(2), 386-408.

John, G. (2006). The essential impact of context on organizational behavior. *Academy of management Review*, 386-408.

Johnson, D., & Grayson, K. (2005). Cognitive and affective trust in service relationships. *Journal of Business Research, 58*(4), 500-507.

Johnson, M. J., & Moore, E. C. (2001). *Apparel product development* (2nd ed.). Englewood Cliffs: Prentice Hall.

Johnson-George, C., & Swap, W. (1982). Measurement of specific interpersonal trust: Construction and validation of a scale to access trust in a specific other. *Journal of Personility and Social Psychology, 43*, 1306-1317.

Jones, K., & Leonard, L. N. (2008). Trust in consumer-to-consumer electronic commerce. *Information & Management, 45*(2), 88-95.

Jones, S., Wilikens, M., Morris, p., & Masera, M. (2000). Trust requirement in e-business. *Communication of ACM, 43*, 81-87.

Joreskog, K. G., & Sorbom, D. (1993). *LISREL 8: Structural equation modeling with the SIMPLIS command language.* Mooresville, Ill: Scientific Software International.

Joreskog, K. G., Sorbom, D., & Du Toit, S. H. (2001). *LISREL 8: New statistical features.* Mooreville, Ill: Scientific Software International.

Joseph, M., & Stone, G. (2003). An empirical evaluation of US bank customer perception of the impact of technology on service delivery in the banking sector. *Journal of Retail & Distribution Management, 31*(4/5), 190-202.

Joshua, A. J., & Koshy, M. P. (2011). Usage patterns of electronic bank services by urban educated customers: Glimpses from India. *Journal of Internet Banking and Commerce, 16*(1), 1-12.

Junadi, S. (2015). A Model of Factors Influencing Consumer's Intention To Use E-payment System in Indonesia. *Procedia Computer Science*, 214-220.

Kahn, C. M., & Roberds, W. (2009). Why pay? An introduction to payments economics. *Journal of Financial Intermediation, 18*(1), 1-23.

Kalakota, R., & Whinston, A. B. (1996). *Frontiers of Electronic Commerce.* Reading MA: Addison-Wesley.

Kalakota, R., & Whinston, B. (1997). *Electronic commerce: A manager's guide.* Reading, MA: Addison Wesley.

Kamel, S., & Hassan, A. (2003). Assesing the introduction of electronic banking in Egypt using the technology acceptance model. *Annal of Cases on Information Technology, 5*, 1-23.

Kanuk, L., & Berenson, C. (1975). Mail Surveys and Response Rates: A Literature Review. *Journal of Marketing Research, 12*, 440-53.

Kaplan, S., & Garrick, B. J. (1981). On the quantitative definition of risk . *Risk Analysis, 1*(1), 11-27.

Kapoor, K., Dwivedi, Y., & Williams, M. (. (2014). Examining the role of three sets of innovation attributes for determining adoption of the interbank mobile payment service. *Information Systems Frontiers*, 310-322.

Karahanna, E., & Limayem, M. (2000). E-mail and V-mail Usage: Generalizing across Technologies. *Journal of Organizational Computing and Electronic Commerce, 10*(1), 49-66.

Karahanna, E., Agarwal, R., & Angst, C. M. (2006). Reconceptualizing compatibility beliefs in technology acceptance research. *MIS Quarterly, 30*, 781-804.

Karahanna, E., Straub, D. W., & Chervany, N. L. (1999). Information technology adoption across time: a cross-sectional comparison of pre-adoption and post-adoption beliefs. *MIS quarterly*, 183-213.

Karjaluoto, H., Mattila, M., & Pento, T. (2002). Factors underlying attitude formation towards online banking in Finland. *International Journal of Bank Marketing, 20*(6), 261-272.

Keen, P., Balance, C., Chan, S., & Schrump, S. (2000). *Electronic Commerce Relationship: Trust by Design.* Upper Saddle Rive, NJ: Prentice Hall.

Kenny, D. A. (2008). Reflection on mediation. *Organizational Research Method, 11*(2), 353-358.

Kerlinger, F. N. (1986). *Foundations of behavioral research.* New York: Holt: Rinehart and Windston Inc.

Keynes, J. M. (1937). General Theory of Employment. *Quarterly of Journal of Economics, February*, 209-223.

Khan, U., K., Hameed, Z., Khan, & U., S. (2017). Understanding Online Banking Adoption in a Developing Country: UTAUT2 with Cultural Moderators. *Journal of Global Information Management* , 43-64.

Khatibi, A., Thyagarajan, V., & Seetharaman, A. (2003). E-commerce in Malaysia: Perceived benefits and barriers. *Vikalpa, 28*(3), 77-82.

Khechine, H., Lakhal, S., Pascot, D., & Bytha, A. (2014). UTAUT model for blended learning: The role of gender and ege in the intention to use webinars. *Interdisciplinary Journal of E-Learning and Learning Objects*, 33-52.

Kijsanayotin, B., Pannarunothai, S., & Speedie, S. M. (2009). Factors influncing health information technology adoption in Thailand's community health centers: Applying the UTAUT model. *International Journal of Medical Informatics, 78*(6), 404-416.

Kim, D. J., Ferrin, D. L., & Rao, H. R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk and thair antecedents. *Decision Support Systems, 44*(2), 544-564.

Kim, G., Shin, B., & Lee, H. G. (2009). Understanding dynamics between initial trust and usage intentions of mobile banking. *Information Systems Journal, 19*(3), 283-311.

Kim, H.-W., Chan, H. C., & Gupta, S. (2007). Value-based adoption of mobile Internet: An empirical investigation. . *Decision Support Systems*, 111-126.

Kim, S., Lee, K. H., Hwang, H., & Yoo, S. (2015). Analysis of the factors influance healthcare professionals' adoption of mobile electronic medical record (EMR) using the unified theory ofacceptance and use of technology (UTAUT) in a tertiary hospital. *BMC medical informatic and decision making*, 12-20.

Kimball, R., & Gregor, W. (1995). How distribution is transforming retail banking: changes leading banks are making. *Journal of Retail Bankig Services, 17*(3), 1-9.

King, W. R., & He, J. (2006). A meta-analysis ot the technology acceptance model. *Information & Management, 43*(6), 740-755.

Kini, A., & Choobineh, J. (1998). Trust in electronic commerce: Definition and theroritical considerations. *Proceddings of the 31st Hawaii Internatioal Conference on System Scienace.*

Kleijnen, M., Wetzels, M., & de Ruyter, K. (2004). Consumer acceptance of wireless finance. *Journal of Financial Services Marketing, 8*(3), 206-217.

Kleinrock, L. (2010). An eraly history of the Internet communication. *Communication Magazine, IEEE, 48*(8), 26-36.

Kline, R. B. (1998). *Principles and practice of Structural Equation Modeling.* New York: Guilford Press.

Knight, F. (1921). *Risk, Uncertainty and Profit.* Boston MA: Hart, Schaffins and Marx.

Koenig-Lewis, N., Marquet, M., Palmer, A., & Zhao, A. L. (2015). Enjoyment and social influence: predicting mobile payment adoption. *The Service Industries Journal*, 537-554.

Koenig-Lewis, N., Palmer, A., & Moll, A. (2010). Predicting young consumers' take up of mobile banking services. *International Journal of Bank Marketing, 28*(5), 410-432.

Kolodinsky, J. M., Hogarth, J. M., & Hilgert, M. A. (2004). The Adoption of Electronic Banking Technology by US Consumers. *International Journal of Bank Marketing, 22*, 238-259.

Kolsaker, A., & Payne, C. (2002). Engendering trust in e-commerce: a study of gender-based concern. *Marketing Intelligence & Planning , 20*(4), 206-214.

Komiak, S. X., & Bennasat, I. (2004). Understanding customer trust in agent-mediated electronic commerce, web-mediated electronic commerce, and traditional commerce. *Information Technology and Management, 5*(1-2), 181-207.

Koufaris, M., & Hampton-Sosa, W. (2004). The development of initial trust in an online company by new customers. *Information & Management, 41*(3), 377-397.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement , 30*, 607-610.

Kuisma, T., Laukkanen, T., & Hiltunen, M. (2007). Mapping the reasons for resistance to Internet banking: a means-end approach. *International Journal of International Management, 27*(2), 75-85.

Kupperschmidt, B. (2000). Multigenerational employee: strategies for effective management. *Health Care Manager, 19*, 65-76.

Laforet, S., & Li, X. (2005). Consumers' attitudes towards online an mobile banking in China. *The International Journal of Bank Marketing, 4/5362-380*.

Lallmahamood, M. (2007). An Examination of individual's Perceived Security and Privacy of the Internet in Malaysia and the Influance of Their Intention to use E-Commerce: Using An Extenion of the Technology Acceptance Model. *Journal of Internet Banking and Commerce, 12*(3), 1-26.

Laudon, K. C., & Traver, C. G. (2001). *E-commerce: Business, technology and society*. London: Addison Wesley.

Laukkanen, P., Sinkkonen, S., & Laukkanen, T. (2008). Consumer resistance to internet banking: postponers, opponents and rejectors. *International Journal of Bank Marketing, 26*(6), 440-455.

Lederer, A. L., Maupin, D. J., Sena, M. P., & Zhuang, Y. (2000). The technology acceptance model and the world wide web . *Decision Support Systems, 29*(3), 269-282.

Lee, A. S., & Baskerville, R. (2003). Generalizing generability in Information System research. *14*(3), 221-243.

Lee, E.-J., Kwon, K.-N., & Schumann, D. W. (2005). Segmenting the non-adopter category in the difusion of Internet banking. *International Journal of Bank Marketing, 23*(5), 414-437.

Lee, J., & Moray, N. (1992). Trust, control strategies and allocation of functions in human-machine systems. *Ergonomics, 35*, 1243-1270.

Lee, M., & Turban, E. (2001). A trust model for consumer internet shopping. *International Journal of Electronic Commerce, 6*, 75-91.

Lee, R., Murphy, J., & Swilley, L. (2009). The moderating influence of hedonic consumption in an extended theory of planned behaviour. *The Service Industries Journal*, 539-555.

Lee, Y. H., Hsieh, Y. C., & Hsu, C. N. (2011). Adding Innovation Diffusion Theory to the Technology Acceptance Model: Supporting Employees' Intentions to use E-Learning systems. *Educational Technology and Society, 14*(4), 124-137.

Lee, Y., Kozar, K. A., & Larsen, K. R. (2003). The Technology Acceptance Model: Past, Present and Future. *Communications of the AIS, 12*, 752-780.

Lefebvre, P. J. (1999). "Digital Money" - a view from European Commision. *European Business Review, 99*, 242-256.

Legris, P., Ingham, J., & Collerette, P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information and Management, 40*(3), 191-204.

Lepak, D. P., Smith, K. G., & Taylor, M. S. (2007). Value creation and value capture: a multilevel perspective. *Academy of management review, 32*(1), 180-194.

Lewicki, R., & Bunker, B. (1995). Trust in relatinship: A model of trust development and decline. In B. Bunker, & J. Rubin, *Conflict, Cooperation and Justice.* San Francisco: Josse-Bass.

Lian, J. W., & Yen, D. C. (2014). Online shopping drivers and barriers for older adults: Age and gender differences. *Computers in Human Behavior*, 133-143.

Liang, H. G., Xue, Y. J., Ke, W. L., & Wei, K. K. (2010). Understanding the influance of team climate on IT use. *Journal of the Association for Information Systems*, 414-432.

Liao, Z., Cheung, M. T., & study, a. e. (2002). Internet-based e-nbanking and consumer attitude: a. *Information and Management, 39*, 283-295.

Liff, S., & Shepherd, A. (2004, July 1). *An evolving gender digital divide?* Retrieved January 14, 2015, from Oxford: Oxford Internet Institute: http://www.ox.oii.ac.uk/resources

Lim, N. (2003). Consumers' perceived risk: resouces versus consequences. *Electronic Commerce Research and Applications, 2*(3), 216-228.

Limayem, M., Hirt, S. G., & Cheung, C. M. (2007). How Habit Limits the Predictive Power of Intention; The Case of IS Continuance. *MIS Quarterly , 31*(4), 705-737.

Lin, C., & Nguyen, C. (2011). Exploring e-payment adoption in Vietnam and Taiwan. *Journal of Computer Information System, 51*(4), 41-51.

Lin, W. B. (2008). Construction of Online Consumer Behavior Models: A Comparative Study of Industries in Taiwan. *International Journal of Commerce and Management, 18*(2), 123-149.

Linsky, A. (1975). Stimulating Responses to Mailed Questionnaires: A Review. *Public Opinion Quarterly , 39*, 82-101.

Littler, D., & Melanthiou, D. (2006). Consumer perceptaions of risk and uncertainty and the implications for behaviour toward innovative retail services: the case of internet banking. *Journal of Retailing and Consumer Services, 13*(6), 431-443.

Liu, C., & Arnett, K. P. (2000). Exploring the factors associated with Web site success in the context of electronic commerce. *Information & management, 39*(2), 23-33.

Liu, L., Miguel Cruz, A., Rios Rincon, A., Buttar, V., Ranson, Q., & Goertzen, D. (2015). What factors determine therapists' acceptance of new technologies for rehabilitation: A study using Unified Theory of Accpetance and Use of Technology (UTAUT). *Disability and rehabilitation*, 447-577.

Lockett, A., & Litter, D. (1997). Adoption of direct banking services in the UK. *Journal of Marketing Management, 13*, 791-811.

Loo, W. H., Yeow, P. H., & Chong, S. C. (2009). User acceptance of Malaysian government multipurpose smartcard applications. *Government Information Quarterly, 26*, 358-367.

Lou, H., Luo, W., & Strong, D. (2000). Perceived Critical Mass Effect on Groupware Acceptance. *European Journal of Information Systems, 9*(2), 91-103.

Lu, J., Yu, C. S., & Liu, C. (2005). Facilitating conditions, wireless trust and adoption intention. *Journal of Computer Information Systems*, 17-24.

Lu, J., Yu, C. S., & Yao, J. E. (2003). Technology acceptance model for wireless internet. *Internet Research, 13*(3), 206-222.

Lucas Jr, H. C. (1978). Empirical evidence for a descriptive model of implementation. *MIS Quarterly*, 27-42.

Lucas, H. C. (1978). Empirical evidance for a descriptive model of implementation. *MIS Quarterly, 2*(2), 27-41.

Lucas, H. C., & Spitler, V. K. (1999). Technology use and performance: A field study of broker workstations. *Decision Science, 30*(2), 1-21.

Luhmann, N. (1988). Familiarity, cinfidence, trust: Problems and alternatives. In D. Gambetta, *Trust.* New York: Basil Blackwell.

Machauer, A., & Morgner, S. (2011). Segmentation of Bank customers by expected benefits and attitides. *The International Journal of Bank Marketing, 19*(1), 6-18.

Mackinnon, D. (2008). *Introductioon to statistical mediation analysis.* New Yor: Taylor & Francis.

MacKinnon, D. P. (2008). *Introduction to Statistical Mediation Analysis.* New York: Lawrence Erlbaum Associates.

Madden, T., Ellen, P., & Ajzen, I. (1992). A Comparison of the Theory of Planned Behavior and the Theory of Reasoned Action. *Personality and Social Psychology, 18*, 3-9.

Madigan, R., Louw, T., Dziennus, M., Graindorge, T., Ortega, E., Graindorge, M., & Merat, N. (2016). Acceptance of Automated Road Transport Systems (ARTS) an adaption of the UTAUT model. *Transportation Research Procedia*, 2217-2226.

Magsamen-Conrad, K., Upadhyaya, S., Joa, C. Y., & Dowd, J. (2015). Bridgind the divide: Using UTAUT to predict multigenerational tablet adoption practices. *Computers in Human Behavior*, 186-196.

Maillet, E., Mathieu, L., & Scotte, C. (2015). Modeling factors explaining the acceptance, actual use and satisfaction of nurses using an Electronic Patient Record in acute carre setting: An extension of the UTAUT. *International Jjournal of medical informatisc*, 36-47.

MalaysiaPayPal. (2014, November 21). *PayPal Malaysia*. Retrieved November 21, 2014, from PayPal Service Maaysia: www.paypal.com/my

Malhotra, Y., & Galletta, D. F. (1999). Extanding the Technology acceptance model to aacount for social influance: Theoritical bases and empirical validation. *Proceedings of the 32nd Annual Hawai International.* System Sciences.

Manstead, A., & Parker, D. (1995). Evaluating and Extending the Theory of Plannaed Behavior. *European Review of Social Psychology, 6*, 69-95.

Marcella, A. (1999). *Establishing Trust in Vertical Markets.* Altamonte Springs, FL: The Institute of Internal Auditors.

Marciniak, J. (2002). Why aren'y they worried? *Brandweek, 43*(32), 29.

Maroofi, F., Hashemi, R., & Nargesi, Z. (2012). Survey of Customers' Conceptions of Security and Trust in E-Payment System. *Asian Journal of Business Management, 4*(3), 275-285.

Marsan, C. D. (2012, June 12). *IPv6: Why we need new Internet Protocol.* Retrieved May 16, 2014, from TechWorld: http;//Slideshow.techworld.com/ipv6

Marsh, H. W., & Hocevar, D. (1985). Application of Confirmatory Factros Analysis to The Study of Selcconcept: First and Higer Order Factor Models and Their Ivvariance Accross Groups. *Pschological Bulletin*, 97.

Martin, J., Mortimer, G., & Andrews, L. (2015). Re-examining online customer experience to include purchase frequency and perceived risk. *Journal of Retailing and Consumer Services*, 81-95.

Mason, W. H., & Wolfinger, N. H. (2001). *Cohort Analysis.* Los Angeles: California Centre for Population Research, University of California.

Massetti, B., & Zmud, R. W. (1996). Measuring the Extent of EDI Usage in Complex Organizations: Strategies and Illustrative Examples. *MIS Quarterly, 20*(3), 331-345.

Mathieson, K. (1991). Predicting User Intentions: Comparing the Technology Acceptance Model with the Theory of Planned Behavior. *Information Systems Research, 2*, 173-191.

Mattila, M., Karjaluoto, H., & Pento, T. (2003). Internet banking aoption among mature customer: early majority or laggards? *Journal of Service Marketing, 17*(5), 514-528.

Maude, D., Raghunath, R., Sahay, A., & Sanda, P. (2000). Banking on the device. *The McKinsey Quarterly, 3*, 87-97.

Mayer, R., Davis, J., & Schoorman, F. (1995). An Integrative Model of Organizational Trust. *Academy of Management Review, 20*, 709-734.

McKnight, D. H., & Chervany, N. L. (2002). What trust means in e-commerce customer relationships: An interdisplinary conceptual typology. *International Journal of Electronic Commerce, 6*(2), 35-59.

McKnight, D. H., Choudhury, V., & Kacmar, C. (2002). Developing and validating measure for e-commerce: an integrative typology. *Information system research, 13*(3), 334-359.

McKnight, D. H., Kacmar, C. J., & Chudhury, V. (2004). Shifting factors and the ineffectiveness of Third Assurances seals: A two-stage model of initial trust in a web business . *Electronic Markets, 14*(3), 252-266.

McKnight, D., Choudhury, V., & Lacmer, C. (2002). The impact of initial trusr on intention to transact with a web site: a trust building model . *Journal og Strategic Information Systems, 11*, 297-323.

McKnight, D., Cummings, L., & Chervany, N. (1998). Initial turst formation in new organizational relationships relationships. *Academy of Management Review, 23*, 472-490.

MCMC. (2014, March 12). *Internet Users Survey 2012*. Retrieved December 16, 2014, from Malaysian Communication and Multimedia Commision : www.skmm.gov.my

MDEC. (2018, July 13). *Malaysia Digital Economy Corporation Sdn Bhd*. Retrieved from MSC Malaysia, a winning strategy: https://www.mdec.my/msc-malaysia/

MIDA. (2014, May 24). *Malaysia Investment Development Authority*. Retrieved May 24, 2014, from Invest in Malaysia: www.mida.gov.my

Miniwatts Group. (2012, June 30). *The Internet Big Picture: World Internet Users and Population Stats*. Retrieved May 8, 2014, from Internet World Stats: www.internetworldstats.com

Mirza, A. P., Wallstrom, A., & Mirza, O. P. (2009). Adoption of Internet banking by Iranian consumers: An empirical invstigation. *Journal of Applied Sciences, 9*(4), 2567-2575.

Mitchell, J. (1980). Electronic Funds Transfer. *International Journal of Retail and Distribution, 8*, 40-42.

MITI. (2007). *Malaysia International Trade and Industry Report 2007*. Kuala Lumpur: Ministry of International Trade and Industry.

MITI. (2013). *MITI Report 2012*. Kuala Lumpur: Ministry of International Trade and Industry.

MOF. (2009, November). *Ministry of Finance Malaysia*. Retrieved May 2014, from Economic Report 2009/2010: www.treasury.gov.my

Mols, N. P. (2000). The Internet and service marketing: the case of Danish retail banking. *Internet Research: Electronic Networking Applicaton and Policy, 10*(1), 7-18.

Mols, N. P. (2001). Organizing for the effective intorduction of new distribution channels in retail banking. *European Journal of Marketing, 35*(5/6), 661-686.

Mols, N. P., Bukh, P. N., & Nielsen, J. F. (1999). Distribution channel strategies in Danish retail banking. *International Journal of Terail Management, 2137-47*.

MoneyMuseum. (2014). *History of Money in Malaysia:*. Retrieved May 5, 2014, from moneymuseum.bnm.gov.my

Montazemi, A. R., & Saremi, H. Q. (2014). Factors affecting Adoption of Online Banking: A Meta-analytic Structural Equation Modeling study. *Informatio & Management*, 1-17.

Moore, G., & Benbasat, I. (1991). Development of an instrument to measure the perceptions of adopting an information technology. *Information System Research , 2*, 173-191.

Moorman, C., Deshpande, R., & Zaltman, G. (1993). Factors affecting trust in marketing research relationships. *Journal of Marketing, 57*, 81-101.

Morgan, R., & Hunt, S. (1994). The committment-trust theory of relationship marketing. *Journal of Marketing, 58*, 20-38.

Morris, M. G., & Venkatesh, V. (2000). Age differences in technology adoption decision: Implication for a changing work force. *53*(2), 375-403.

Moutinho, L., & Phillips, P. A. (2002). The imoact of strategic planning on the competitivness, performance and effectiveness of bank branches: a neural network analysis. *International Journal of Bank Marketing, 20*(3), 102-110.

Moutinho, L., & Smith, A. (2000). Modelling bank customer satisfaction through mediation of attitude towards human and automated banking. *International Journal of Bank Marketing, 18*, 124-134.

Mowery, D. C., & Simcoe, T. (2002). Is the Internet a US invention? An economic and technology history of computer networking. *Research Policy , 31*(8), 1369-1387.

Mukherjee, A., & Nath, P. (2003). A model of trust in online relationship banking. *International Journal of Bank Marketing, 21*(1), 5-15.

Mukherjee, A., & Nath, P. (2003). A Model of Turst in Online Relationship Banking. *Internationa journal of Bank Marketing, 21*, 5-15.

Munger, D. (2009). Expedited payments: The next frontier in US online financial services. *Journal of Payment Startegy and Systems, 3*(1), 83-91.

Munusamy, J., Chelliah, S., & Annamalah, S. (2013). Demoghaphic Factors and Adoption of Retail Internet Banking: An Experience in Malaysia. *International Journal of Management and Innovations, 5*(2), 34-48.

Murray, M. (2000). Young Internet users likely to shop for mortgages online. *Real Estate Finance Today, 17*(45), 1-3.

Mussweiler, T., & Strack, F. (2001). The semantics of anchoring . *Organizational Behavior and Human Decision Process, 86*, 234-255.

Nath, R., Schrick, P., & Parzinger, M. (2001). Bankers' perspectives on Internet banking. *E-Service Journal, 1*(1), 21-36.

Ndubisi, N. O., & Sinti, Q. (2006). Customer attitudes, system's characteristics and Internet banking adoption in Malaysia. *Management Research News, 29*(1/2), 16-27.

Neufeld, D. J., Dong, L., & Higgins, C. (2007). Chrismatic Leadership and User Acceptance of Information Technology. *European Journal of Information Systems , 16*(4), 494-510.

Neufeld, D. J., Dong, L., & Higgins, C. (2007). Chrismatic Leadership and User Acceptance of Information Technology. *European Journal og Information Systems, 16*(4), 494-510.

Neuman, B. C., & Medvinsky, G. (1995). Requirements for Network Paymment: The NetCheque Perspective. *Proceeding of IEEE COMPCONS '95*. New York: IEEE.

Neuman, W. L. (2003). *Social Research Method: Qualitative and Quantitative approches.* Boston: Person Education.

Neuman, W. L. (2013). *Social Research Method: Qualitative and Quantitative approches.* Boston: Person Education.

Nielsen. (2012, June 6). *Nielsen Newswire*. Retrieved May 26, 2014, from Shop sentiment how consumers feel about shping in-store, online and via mobile: www.nielsen.com

NITC. (2002, May 2). *Malaysia National Information Technology Council*. Retrieved May 24, 2014, from Malaysia National Information Technology Policies: nitc.mosti.gov.my

Njite, D., & Parsa, H. G. (2005). Structural equation modeling of factors that influance consumer internet purchase intention of services. *Journal of Service Research, 5*(1), 44-59.

Noorderhaven, N. (1996). Oppertunism and trust in transaction cost economics. In J. Groenewegen, *Transaction cost economic and beyond.* Boston: Kluwer Academic Publishers.

Nor, K. M., & Pearson, J. M. (2008). An exploratory study into the adoption of internet banking in a developing country: Malaysia. *Journal of Internet Commerce, 7*(1), 29-73.

Nor, K. M., Sutanonpaiboon, J., & Mastor, N. H. (2010). Malay, Chinese and Internet banking. *Chinese Management Studies, 4*(2), 141-153.

Norum, P. S. (2003). Examinitation of generational differences in house hold apparel expenditure. *Family and Consumer Science Research Journal, 32*(1), 52-75.

NST. (2014, October 25). *New Straits Times Online*. Retrieved May 16, 2014, from New Straits Times Online: www.nst.com.my/2014-budget

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd Edition ed.). New York: McGraw-Hill.

Nurittamont, N. (2017). Understanding the Role of Technology Acceptance Influence on Internet Banking Intention : An Empirical Study in Consumer of Commercial Bank . *International Journal of Applied Computer Technology and Information Systems*, 28-33.

Oakes, L. (2011). Fasters Payments: Managing customers expectations. *Journal of Payments Strategy & Systems, 5*(1), 30-37.

O'Brien. (1997). *Introduction to Information Systems* (8th Edition ed.). New York: Irwin McGraw-Hill.

O'brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. *Qual. Quan.*, 673-690.

OECD. (2006, April 18). *Online Payment system for e-commerce.* Retrieved November 31, 2014, from Organization for Economic Cooperation and Development: www.oecd.org

Ogawara, S., Chen, J. C., & Chong, P. P. (2002). Mobile Commerce : The Future Vehicale of E-payment in Japan. *Journal of Internet Commerce, 1(3)*, 29-41.

Oliveira, T., Thomas, M., Baptista, G., & Campos, F. (2016). Mobile payment: Understanding the determinants of customers adoption and intention to recommend the technology. *Computers in Human Behavior*, 404-414.

Ong, C. S., & Lai, J. Y. (2006). Gender differences in perceptions and relationships among dominants of e-learning acceptance . *Computer in Human Behavior, 22*(5), 816-829.

Orlikowski, W. J. (1992). The duality of Technology: Rethinking the Concept of Technology in Organizations. *Organization Science, 3*(3), 398-417.

O'Shaughnessy, J. (1988). *Competitive Marketing: A Strategic Approch.* Boston MA: Unwin-Hyman.

Ozdemire, S., Trott, P., & Hoecht, A. (2008). Segmenting Internet banking adopter and non-adopters in teh Turkish banking sector. *International Journal of Banking Marketing, 26*(4), 212-236.

Ozkan, S., Bindusara, G., & Hackney, R. (2010). Facilitating the adoption of e-payment systems: theoretical construct and empirical analysis. *Journal of Enterprise Information Management, 23*(3), 305-325.

Pallant, J. (2005). *SPSS survival manual* (2nd Edition ed.). Sydney: Allen and Unwin.

Palmer, J., Baily, J., & Faraj, S. (2000). The role of ibtermediaries in the development of turst on the WWW: The and promenence of trusted third parties and privacy statements. *Journal of Computer Mediated Communications, 5*(3).

Pang, J. (1995). *Banking and Finance in Malaysia.* Malaysia: Federal Publication Sdn Bhd.

Panurach, P. (1996). Money in Electronic commerce: Digital cash, electronic fund transfer and Ecash. *Communication of The ACM, 39.*

Papadopoulou, P. A., Kanellis, P., & Martakos, D. (2001). Trust and relationship building in electronic commerce. *Internet Research, 11*, 322-332.

Parameswaran, S., Koshore, R., & Li, P. (2015). Within -study measurement invariance of the UTAUT instrument: An assessment with user technology engagement variables. *Information & management*, 317-336.

Park, H. C., & Kim, G. Y. (2003). Identifying key factors affecting consumer purchase behavior in an online shopping context. *International of Retail & Distribution Management*, 16-29.

Park, J., Yang, S., & Lehto, X. (2007). Adoption of mobile technology for Chinese consumers . *Journal of Electronic commerce research, 8*(3), 196-206.

Parry, E., & Urwin, P. (2011). Generational differences in work values: A review of theory and evidence. *International Journal of Management Review, 13*(1), 79-96.

Parthasathy, M., & Bhattacherjee, A. (1998). Understanding post-adoption behavior in the context of online services. *Information Systems Research, 9*(4), 362-379.

Patsiotis, A. G., Hughes, T., & Webber, D. J. (2011). Adopters and non-adopters of internet banking: a segmentation study. *International Journal of Bank Marketing, 30*(1), 20-24.

Paul, P. (2001). Getting inside Gen Y. *American Demographics, 23*(9), 42-49.

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

Pavlou, P. A., & Fygenson, M. (2006). Understanding and predicting electronic commerce adoption: a extension of the theory of planned behavior. *MIS quarterly*, 115-143.

PayPal. (2014, May 28). *PayPal*. Retrieved May 28, 2014, from Get Started with Payments: www.paypal.com

Peffers, K., & Ma, W. (2003). An agenda for research about the value of payment system for transactions in electronic commerce. *Journal of Information technology Theory and Application, 4*(4), 4-16.

Pennington, M. C. (2004). Cycles of innovation in the adoption of information technology: a view for language teching. *Computer Assised Language Learning, 17*(1), 7-33.

Peter, J., & Ryan, J. (1976). An investigation of perceived risk at the brand level. *Journal of Marketing Journal, 14*, 184-188.

Peterson, R. A., Balasubramanian, S., & Bronnenberg, B. J. (1997). Exploring the implication of the Internet for consumer marketing. *Journal of the Academy of Marketing Science, 25*(4), 329-346.

Phaal, R., Farrukh, C. J., & Probert, D. R. (2004). Technology roadmapping: A planning framework for evolution and revolution. *Technological Forecasting and Social Change, 71*, 5-26.

Philips, L. W., & Sternhal, B. (1977). Age differences in information processing: a perspective on the age consumer. *Journal of Marketing Research*, 444-457.

Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahnila, S. (2004). Consumer acceptance of online banking: an extension of the technology acceptance model. *Internet Research, 14*(3), 224-235.

Pires, G., Stanton, J., & Eckford, A. (2004). Influences on the perceived risk of purchasing online. *Journal of Consumer Behavior*, 118–131.

Podsakoff, P. M., Scott, B. M., Jeong-Yeon, L., & Podsakoff, N. P. (2003). Common Methid Bias in Behavioral Research: A Critical Rwview of the Literature and Recommended Remedies. *Journal of Applied Psychology, 88*(5), 879-903.

Poenar, C. (2008). A study looking the Electronic Payment market. *Revista Informatica Economice, 1*(45), 120-123.

Polach, J. (2007). Managing an age diverse workforce. *MIT Sloan Management Review, 48*, 9.

Poon, W. C. (2008). Users' Adoption of e-banking services: The Malaysia perspective. *Journal og Business and Industrial Marketing, 23*(1), 59-69.

Porter, M. E. (2001). Strategy and The Internet. *Harvard Business Review, 79*(3), 62-78.

Prescott, M. B., & Conger, S. A. (1995). Information technology innovations: a classification ny IT locus of impact and research approch. *ACM SIGMIS Databased, 26*(2-3), 20-41.

PricewaterhouseCooper. (2013, October 25). *2003/2004 Malaysian Tax and Business Booklet.* Retrieved December 16, 2014, from Prince Waterhouse Cooper: www.pwc.com/en_MY/my/assets/publications/20012-2014

Puccinelli, N. M., Goodstein, R. C., Grewal, D., Price, R., Raghubir, P., & Stewart, D. (2009). Customer experience management in retailing: understanding the buying process. *Journal of Retailing, 85*(1), 15-30.

Puschel, J., Mazzon, J. A., & Hernandez, J. M. (2010). Mobile banking: Proposition of an integrated adoption intention framework. *International Journal of Bank Marketing, 28*(5), 389-409.

Rajoo, D. A. (2014, May 18). *Bernama Greater KL Special Page*. Retrieved May 24, 2014, from Malaysia Embarking on Digital Masterplan: www.greaterkl.bernama.com

Raman, M., Stephenaus, R., Alam, N., & Kuppusamy, M. (2008). Information Technology in Malaysia: E-Service quality and Uptake of Internet banking. *Journal of Internet Banking and Commerce, 13*(2), 1-16.

Ratnasingham, P. (1998). The important of Trust in Electronic commerce. *Internet Research, 8*, 313-321.

Ratnasingham, P. (1999). Implicit trust in the risk assessment process of EDI. *Computers & Security , 18*(4317-321).

Ratnasingham, P., & Pavlou, P. (2003). Technology Turst in Internet-based Interorganizational Electronic Commerce. *Journal of Electronic Commerce in Organizations, 1*, 17-41.

Rayport, J. F., & Sviokla, J. .. (1995). Expliting the virtual balue chain. *Harvard Business Review, 73*(6), 75.

Rea, L. M. (2012). *DEsigning and conducting survey research: A comprehensive guide.* London: John Wiley & Sons.

Reichheid, F., & Schefter, P. (2000). E-Loyalty: Your Secret weapon on the Web. *Harvard Business Review, 78*(A), 105-113.

Reid, M., & Levy, Y. (2008). Integrating trust and computer self-efficacy with TAM: An empirical assessment of consumers' acceptance of banking information system in Jamaica. *Journal of Internet banking and commerce, 12*(3), 2008-2012.

Rempel, J. K., Holmes, J. G., & Zanna, M. P. (1985). Trust in Close Relationships. *Journal of Personality and Social Psychology, 49*(1), 95-112.

Rhodes, S. (1983). Age-related differences in work-attitude and behaviour: a review and conceptual analysis. *Psychological Bulletin, 93*, 328-367.

Ridings, C., Gefen, D., & Arinze, B. (2002). Some antecedents and effects of trust in virtual communities. *Journal of Stratgeic Infoamtion Systems, 11*, 271-295.

Riedl, R., Hubet, M., & Kenning, P. (2010). Are there neural gender differences in Online trust? An FMRI study on the perceived tristworthhiness of Ebay offers. *MIS Quarterly, 34*(2), 397-428.

Riquel, H., & Rios, R. E. (2010). The moderating effect of gender in the adoption of mobile banking. *Internationla Journal of Bank Marketing, 28*(5), 328-341.

Risinger, D. (2012, April 26). *Bay a product on Walmart.com: Pay with...cash?* Retrieved August 29, 2014, from CNET: www.cnet.com

Rodgers, S., & Chen, Q. M. (2002). Post- Adoption Attitudes to Advertising on the Internet. *Journal of Advertising Research, 42*(5), 95-104.

Rogers, E. (1983). *Diffusion of Innovation.* 1983: The Free Press.

Rogers, E. (1995). *Diffusion of Innovations.* New York: The Free Press.

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

Rogers, E., & Scott, K. (1997). The Diffusion of Innovations model and outreach from the National of Libraries of Libraries of Medicine to Native America Commununities. *In procedings of the National Network of Libraries of Medicine Conference* . Seattle: Pacific Northwest Region.

Rose, G., Khoo, H., & Straub, D. W. (1999). Current technology impediments to business-to-consumer electronic commerce. *Communication of the AIS, 1*(1), 1-74.

Rotchanakitumnuai, S., & Speece, M. (2003). Barriers to Internet banking adoption: a qualitative study among corporation customers in Thailand. *International Journal of Bank Marketing, 21*(6), 312-323.

Roth, J. (2009). Expedited payments: A fee service to compensate for the rising costs of online bill payments. *Journal of Payments Strategy & Systems, 3*(1), 24-33.

Rotter, B. (1967). A new scale for the measurement of interpersonal trust. *Journal of Personality and Social Psychology, 35*, 651-665.

Rousseau, M., Sitkin, B., Burt, S., & Camerer, C. (1998). Not so different after all: A cross-disipline view of trust. *Academy of Management Review, 23*, 293-404.

Ryan, B., & Gross, N. (1943). The difussion of hybrid seed corn in two Iowa communities. *Rural Sociology, 8*, 15-24.

Ryan, R. (2002). From G.I.s to Gen-Ys'. *Texas Banking, 91*(9), 8-10.

Said, M. F. (2007). xxxxx. *xxxx*.

Salam, A. F., & Pegels, C. C. (2003). Consumer-perceived risk in e-commerce transactions. *Communications of the ACM, 46*(12), 325-331.

Salant, P., & Dillman, D. A. (1994). *How to conduct your own survey*. New York: John Wiley & Sons, Inc.

Salisbury, W. D., Pearson, R. A., Pearson, A. W., & Miller, D. W. (2001). Perceived security and World Wide Web purchase intention. *Industrial Management & Data Systems, 101*(4), 165-177.

Salo, J., & Karjaluoto, H. (2007). A conceptual model of trust in the online enviroment. *Online Information Review, 31*(15), 604-621.

Sarel, D., & Marmorstein, H. (2003). Marketing online banking services: the voice of the customer. *Journal of Financila Services Marketing, 8*(2), 106-118.

Sarker, S., Valacich, J. S., & Sarker, S. (2005). Technology adoption by groups: A valence perspective. *Journal of the association for Information systems, 6*(2), 37-71.

Sathye, M. (1999). Adaption of Internet banking by Australian consumer: An empirical investigation. *International Journal of Bank Marketing, 17*(7), 324-334.

Schepers, J., & Wetzels, M. (2007). A meta-analysis of the technology acceptance model: Investigating subjcative norm and moderating effects. *Information and Management, 44*(1), 90-103.

Schlosser, A. E., White, T. B., & Lloyd, S. M. (2006). Converting web site visitors into buyers: how web site investment increases consumer trusting belief and online purchase intentions. *Journal of Marketing , 70*, 133-148.

Schnediderman, B. (2000). Designing trust into Online Experiences . *Communications of the ACM, 43*, 47-59.

Schumacker, R. E., & Lomax, R. G. (2004). *A Beginners Guide to Structural Equation Modeling.* London: Lawrence Erlbaum.

Schurr, P., & Ozanne, L. (1985). Influance on exchang process: Buyers' preconceptions of a sellers's trustworthiness and barganing toughness. *Journal of Consumer Research, 11*, 35-51.

Seeback, B. (1995). Payment Services for Global Online System including Internet. *The Electronic Library , 13*, 127-141.

Sekaran, U. (2000). *Research methods for business: A skill building approch.* New York: John Wiley & Sons.

Sekaran, U. (2006). *Research methods for business: A skill building approch.* New York: John Wiley & Sons.

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approch.* New York: John Wiley & Sons.

Serenko, A., Turel, O., & Yol, S. (2006). Moderating roles of user demographics in the American customer satisfaction model within the context of mobile services. *Journal of Information Technology Management*, 20–32.

Shanmugam, B., & Guru, B. K. (2003). *Electronic Banking in Malaysia.* Kuala Lumpur: Institut Bank-bank malaysia.

Shariffadeen, T. S., Hasan M. A, & Hasan, M. S. (2016). Acceptance and Usage of Webcasting Among Users of Selected Cyber Cafes in Klang Valley. *Malaysian Jurnal of Communication, 24*, 46-26.

Sharma, S., Durand, R. M., & GuriArie, O. (1981). Indentification and analysis of moderator variables. *Journal of marketing research*, 291-300.

Sheehan, K. (1999). An investigation of gender differences in on-line privacy concern and resultant behaviour. *Internet Marketing* , 159-173.

Sheehan, K. B. (2002). Toward a Typology of Internet Users and Online Privacy Concern. *The Information Society*, 21-32.

Sheeran, P. (2002). Intention-Behavior relations: A conceptual and empirical review. *European review of social psychology, 12*(1), 1-36.

Sheppard, B. H., Hartwick, J., & Warshaw, P. R. (1988). The theory of reson action: A meta-analysis of past research with recommendations for modicfications and future research. *Journal of consumer Research*, 352-343.

Shergill, G. S., & Li, B. (2005). Internet banking - Anempirical investigation of customers' behavior for online banking in New Zealand . *Journal of E-Business, 5*(1), 1-17.

Shih, Y.-Y., & Fang, K. (2004). The use of a decomposed theory of planned behavior to study Internet banking in Taiwan. *Internet Research, 14*(3), 213-223.

Shin, D.-H. (2009). Towards an understanding of the consumer acceptance of mobile wallet. *Computer in Human Behavior*, 1343-1354.

Shon, T.-H., & Swatman, P. M. (1998). Identifying Effectiveness Criteria for Internet E-Payment System. *Internet Research , 8*, 202-218.

Shrivastava, P. (1995). Environmental Technologies and Competitive Advantage. *Strategic Management Journal, 16*, 183-200.

Shwayder, M. (2012, September 24). *International Business Times*. Retrieved May 26, 2014, from One-Third of World's Population Using Internet, Developing Nations Showing Biggest Gains: www.ibtimes.com

Shy, O., & Tarkka, J. (2002). The market for elecronic cash card. *Journal of Money Credit and Banking, 34*(2), 299-324.

Sing, S., Srivastava, V., & Srivastava, R. K. (2010). Costumer acceptance of mobile banking: A concept framework. *SIES Journal of Management, 7*(1), 55-64.

Singh, S. (2004). Impersonalisation of Electronic Money : Implications for Bank Marketing. *International Journal of Bank Marketing, 22*(7), 504-521.

Sitkin, S., & Weingart, L. (1995). Determinants of risky decision making behavior: Atest of the mediating role of risk perceptions and risk propensity. *Academy of management Journal, 38*(6), 1573-1592.

Slade, E. L., Dwivedi, Y. K., Piercy, N. C., & Williams, M. D. (2015). Modeling consumers' adoption intentions of remote mobile payments in the United Kingdom: Extending UTAUT with innovativeness risk and trust. *Psychoology & Marketing*, 860-873.

Slade, E. L., Dwivedi, Y. K., Piercy, N. C., & Williams, M. D. (2015). Modeling consumers' adoption intentions of remote mobile payments in the United Kingdom: extending UTAUT with innovativeness, risk, and trus. *Psychology & Marketing*, 860-873.

Smith, M., Baily, J., & Brynjolfsson, E. (2000). Understanding Digital Markets; Review and Assessment. In E. Brynjolfsson, & B. Kahin, *Understanding the Digital Economy.* Cambridge: MIT Press.

Smith, R. G. (1999). Internte Payment system and their security risk. *Journal of Financial Crime, 7*(2), 155-160.

Sohail, M. S., & Shanmugham, B. (2003). E-banking and customer preferences in Malaysia: An empirical investigation. *Information Sciences*, 207-217.

Sohail, S. M., & Shanmugham, B. (2003). E-banking and customer preferences in Malaysia: An Empirical investigation. *Informations Sciences, 150*(3), 207-217.

Soldatos, J. (1995, August). Future trends in marketing bank services. *The Australian Bankers*, 157-162.

Sripalawat, J., Thongmak, M., & Ngramyarn, A. (2011). M-banking in metropolitan Bangkok and a comparison with other countries. *The Journal of Computer Information Systems, 51*(3), 67-76.

Steward, C. S. (2002). Gen X rising. *Potentials, 35*(9), 22-31.

Straub, D., & Burton-Jones, A. (2007). Veni, vidi, vici: Breaking the TAM logjam. *Journal of the Association for Information Systems, 8*(4), 5.

Straub, E. T. (2009). Understanding technology adoption: Theory and future directions for informal learning. *Review of Educational Research, 79*(2), 625-649.

Strauss, W., & Howe, N. (1991). *Generations: The History of America's Future, 1584-2069.* New York: William Morrow.

Sughanti, B. (2001). Internet baking patronage: an empirical investigation of Malaysia. *Journal of Intenet Banking and Commerce, 6*(1).

Suh, B., & Han, I. (2002). Effect of trust on customer acceptance of Internet. *Electronic Commerce Research and Application, 1*, 247-263.

Suki, N. M. (2010). An empirical study of fectors affecting the internet adoption among Malaysian consumers. *Journal of Internet Banking and Commerce, 15*(2), 1-11.

Suki, N. M., & Suki, M. N. (2017). Modeling the determinants of consumers' attitudes toward online group buying: Do risks and trusts matters? *Journal of Retailing and Consumer Services*, 180-188.

Summers, B. J. (2012). *Payment System: Design, Governance and Oversight.* London: Central Banking Publications Ltd.

Sun, Y., & Bhattacherjee, A. (2011). Multi-level analysis in information systems research: the case of enterprise resource planning system usage in China. *Enterprise Information Systems, 5*(4), 469-494.

Sun, Y., & Jeyarai, A. (2013). Information adoption and continuance: A longitudinal study of individuals' behavioral intentions. *Information & Management, 50*(7), 457-465.

Sun, Y., Bhattacherjee, A., & Ma, Q. (2009). Extending Technology Usage to Working Seeting: The role of perceived work compatibility in ERP implementaton. *Informatuon and Management, 46*(4), 351-356.

Sun, Y., Shen, X. L., & Wang, N. (2013). Dealing with the Transition from Web to Mobile Services: The Role of Consistency and Trust. *PACIS* , 61-69.

Sussman, S. W., & Siegal, W. S. (2003). Informational Influence in Organizations: An Integrated Approach to Knowledge Adoption. *Information Systems Research , 14*(1), 47-65.

Swanson, E. B. (1982). Measuring User Attitude in MIS Research: A Review. *Omega International Journal of Management Science, 10*, 157-165.

Sykes, T. A., Venkatesh, V., & Gosain, S. (2009). Model of acceptance with peer support: a social network perspective to understand employees' system use. *Management Information Systems Quarterly, 33*(2), 9.

Szajna, B. (1993). Determining information system usage: Some issues and examples. *Information Management, 25*(3), 147-154.

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

Taddesse, W., & Kidan, T. G. (2005). *e-Payment: Challenges and Opportunities in Ethiopia.* Ethiopia: United Nations Economic Commission For Africa.

Tan, G., Ooi, K.-B., Chong, S.-C., & Hew, S.-C. (2014). FC mobile credit card: The next frontier of mobile payment? *Telematics and Informatics*, 292-307.

Tan, M., & Teo, T. S. (2000). Factors indluencing the adoption of Internet banking. *Journal of the AIS, 1*(5), 1-42.

Tarhini, A., El-Masri, M., Ali, M., & Serrano, A. (2016). Extending the UTAUT model to understand the consumers' accepatance and use of internet banking in Lebanon: A structural eqiation modeling approch. *Information Technology & People*, 830-849.

Taylor, J. W. (1974). The role of risk in consumer behavior. *The Journal of Marketing*, 54-66.

Taylor, S., & Todd, P. (1995). Understanding Information Technology usage: A test of competing models. *Information System Research, 4*, 144-176.

TeleGeography. (2018, July 13). *Telekom Malaysia ubveil new tariffs*. Retrieved from TeleGeography: https://www.telegeography.com/products/commsupdate/articles/2018/07/04/telekom-malaysia-unveils-new-tariffs/

Teo, S. H. (2001). Demographic and motivation variables associated wirh the Internet usage activities. *Journal of Internet Research, 11*(2), 125-137.

Teo, T. S., & Liu, J. (2007). Customer trust in e-commerce in the United States, Singapore and China. *Omega - The International Journal of Management Science, 35*, 22-38.

Teoh, C. H., & Md Nor, K. (2007). Consumer acceptance of mobile banking. *Journal of Technology Maagement and Enterpreneurship, 6*(1), 1-17.

Thomas, L., & Thompson, B. (1994). Perceptions of control over health: A confirmatory LISREL construct validity study. *Annual Meeting of Mid-South Educational Research Association* . Nashville.

Thompson, R. L., Higgins, C. A., & Howell, J. M. (1991). Personal computing: Toward a concept model of utilization. *MIS quarterly* , 125-143.

Thompson, R. L., Higgins, C. A., & Howell, J. M. (1994). Influance of Experience on Personal computer utilization: Testing a Conceptual Model. *Journal of Management Information System, 11*(1), 167-187.

Thong, J. Y., Hong, S. J., & Tam, K. Y. (2006). The effect of post-Adoption Belief on the Expectation-Confirmation Model for Information Technology Continuence. *International Journal of Human-Computer Studies, 64*(9), 799-810.

Thornton, J., & White, L. (2001). Customer orientation and usage of financial distribution channels. *Journal of Services Marketing, 15*(3), 168-185.

Treiblmaier, H., Pinterits, A., & Floh, A. (2008). Success factors of Internet Payment. *International Journal of Electronic Business, 6*(4), 369-385.

Triandis, H. C. (1980). Reflections on trends in cross-cultural research. *Journal of cross-cultural psychology*, 35-58.

Truong, D., & Jitpaiboon, T. (2008). How IT purchasing preparedness facilitates e-market place usage. *Journal of Enterprise Information Management, 21*(2), 198-218.

Turan, H. A. (2012). Internet shopping behavior of Turkish customers: comparison of two competing models. *Journal of throretical and applied electronic commerce research, 7*(1), 77-93.

Twenge, J. M., Campbell, S. M., Hoffman, B. J., & Lance, C. E. (2010). Generational differences in work values: Leisure and extrinsic values increasing social and intrinsic values decreas. *Journal of Management, 36*(5), 1117-1142.

Uddin, S. S., Mushtaque, K., Ali, A., & Khan, M. A. (2014). The role of Multimedia Super Corridor in the Cyber Development of Malaysia. *International Research Journal of Social Sciences, 3*(4), 33-37.

UNDESA. (2014, January 1). *United Nation Public Administration Country Studies.* Retrieved April 1, 2015, from UN E-government survey 2014: www.unpan3.un.org

UNDESA. (2018, July 13). *United Nation Public Administration Country Studies.* Retrieved April 1, 2015, from UN E-government survey 2018: www.unpan3.un.org

Urban, G., Sultan, F., & Willian, O. (2000). Making Trust the center of your Internet Strategy. *Sloan Management Review, 1*, 39-48.

Urban, G., Sultan, F., & Willian, Q. (2000). Making Trust the center of your Internet strategy. *Sloan Management Review, 1*, 39-48.

US Federal Reserved System. (2013, December 19). *The 2013 Federal Reserved Payment Study*. Retrieved June 04, 2015, from US Federal Reserved Bank Services: https://www.frbservices.org/files/.../2013_payment_study_summary.pdf

Vallacher, R., & Kaufman, J. (1996). Dynamics of action identification: Volatility and structure in the mental representation of behvior . In P. M. Gollwitzer, & J. A. Bargh, *The psychology of action: Linking cognition and motivation behavior* (pp. 260-282). New York : Guilford.

van der Heijden, H. (2004). User Accepatance of Hedonic Information System. *MIS Quarterly , 28*(4), 695-704.

Vandenberg, R. J. (2006). Statistical and Methodological Myths and Urban Legends. *Organizational Research Methods*, 194-201.

Vanetti, R. (2010). Strategic innovation in payments systems: What are the next big things? *Journal of Payments Strategy & Systems, 4*(1), 17-25.

Vazques-Casielles, R., Suarez-Alvares, L., & Diaz-Martin, A. (2005). Turst as a key factor in successful relationship between consumers and retail service provider. *The Service Industries Journal, 25*(1), 83-101.

Venkatesh, V. (1999). Creation of Favorable User Perception: Exploring the Role of Intrinsic Motivation. *MIS Quarterly , 23239-260.*

Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating perceived behavioral control, computer anxiety and enjoyment into the technology acceptance model. *Information Systems Research , 11*, 342-353.

Venkatesh, V. (2006). Where To Go From Here? Thoughts on Future Directions for Research on Individual-Level Technology Adoprtion with a Focus on Decision Making. *Decision Sciences, 37*(4), 497-518.

Venkatesh, V., & Bala, H. (2008). Technology Acceptance Model 3 and a Research Agenda on Interventions. *Decision Science, 39*(2), 273-315.

Venkatesh, V., & Davis, F. (2000). A Theoretical Extension of the Technology Accepatcne Model: Four Longitudinal Field Studies. *Management Science, 46*, 186-204.

Venkatesh, V., Davis, F. D., & Moris, M. G. (2007). Dead or Alive? The Development, Trahectory and Future of Technology Adoption Research. *Journal of The AIS, 8*(4), 268-286.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, G. B. (2003). User Acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425-478.

Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer Accepatance and Use of Information Technology: Extending the Unified Theory of Acceptance and use of Technology. *MIS Quaterly , 36*(1), 157-178.

Venkatseh, V., Thong, J. Y., & Xu, X. (2016). Unified theory of Acceptance and use of technology: A synthesis and the road ahead. *Journal of The Association for Information System*, 328-376.

Vicziany, M., & Puteh, M. (2004). Vision 2020, the Multimedia Super Corridor and Malaysian universities. *Asia Examined: Proceedings of the 15th Biennial Conference of the Asian Studies Association of Australia* (pp. 1-21). Asian Studies of Australia Inc.

Vincent-Wayne, M. (1999). Consumer perceived risk: Conceptulizations and models. *European Journal of Marketing, 33*(1), 163-195.

Visa International. (2014, May 28). *Visa International*. Retrieved May 28, 2014, from Secure Online Shooping: www.visa.com.my

Von Reisen, R. D. (1979). Postcard Reminders versus Questionnaires and Mail Survey Response Rates from a Professional Population. *Journal of Business Research, 7*, 1-7.

Wade, M., & Hulland, J. (2004). The resource-based view and information system research: review, extension and suggestion for future research. *MIS Quarterly, 28*, 107-142.

Wan, W. W., Chung-Leung, L., & Chow, C. W. (2005). Customers' adoption of banking channels in Hong Kong. *The International Journal of Bank Marketing, 23*(2/3), 255-272.

Wandoko, W., Abbas, B. S., Budiastuti, D., & Kosala, R. (2017). Online trust building through third party trust transfer and third party protection. *In Journal of Physics: Conference Series* (p. 12060). IOP Publishing.

Wang, M. C. (2012). Determinants and consequence of consumer satisfaction with self-service technology in a retail setting. *Managing Service Quality, 22*(2), 128-144.

Wang, Y., Wang, Y., Lin, H., & Tang, T. (2003). Determinants of user acceptance of Internet banking: an empirical study. *International Journal of Service Industry Management, 14*, 501-519.

Wansink, B., Kent, R. J., & Hoch, S. J. (1998). An anchoring and adjustment model of purchase quantitative decision. *Journal of Marketing Research, 35*, 71-81.

Warrington, T., Abgrab, N., & Caldwell, H. (2000). Building Trust to develop Competitive Advantage in E-Business Relationship. *Competitiveness Review, 10*, 160-168.

Warshaw, P. R. (1980). A new model for predicting behavioral intentions: An alternative to Fishbein. *Jpurnal of Marketing Research, 17*(2), 153-172.

Warshaw, P. R., & Davis, F. D. (1985). Disentangling Behavioral Intention and Behavioral Expectation . *Journal of Experimental Social Psychology, 21*(3), 213-228.

Watson, N. (2002). Generation wrecked. *Fortune, 146*(7), 183-190.

Weber, R. (2004). Editor's comments: the rhetoric of positivism versus interpretivism: a personal view. *MIS Quarterly, 28*(1), iii-xii.

Weber, R. (2012). Evaluating and Developing Theories in the Information System Discipline. *Journal of the Association for Information Systems*, 1-30.

Webster, J., & Martocchio, J. (1992). Microcomputer Playfulness: Development of a measure with workplace implications. *MIS Quarterly , 16*, 201-226.

Wells, H. G., & Mayne, A. J. (1938). *World brain.* New York: Methuen & Company.

Williams, M. D., Rana, N. P., & Dwivedi, Y. K. (2015). The unified theory of acceptance and use of technology (UTAUT): a literature review. *Journal of Enterprise Information Management*, 443 - 488.

Williamson, O. (1993). Calculativeness, trust and economic organization . *Journal of Law and Economic, 30*, 131-145.

Williamson, O. E. (1975). *Markets and hierarchies: Ananlysus and antitrust implications.* New York: Free Press.

Wilson, A., Ramamurthy, K., & Nystrom, P. C. (1999). A multi-attribute mesasure for innovation adoption: The context of imabing technology. *IEEE Transactions on Engineering Management , 46*(3), 311-321.

Wonglimpiyarat, J. (2009). Banking Strategies in Launching E-payment Innovations. *International Journal of Electronic Business, 7(4)*, 428-443.

Worthington, S. (1995). The Cashless Society. *International Journal of Retail of Distribution Management, 7*, 31-40.

Wu, J.-H., & Wang, S.-C. (2005). What drives mobile commerce? An empirical evaluation of the revised technology acceptance model. *Information and Management, 42*(5), 719-729.

Wu, P. F. (2012). A mixed methods approch to technology acceptance research. *Journal of the Association for Information Systems, 13*(3), 171-187.

Wu, W.-Y., & Chang, M.-L. (2007). The role of risk attitude on online shopping: experience, customer satisfaction, and repurchase intention. *Soc. Behav. Personal*, 453–468.

Xin, H., Techatassanasoontorn, A. A., & Tan, F. B. (2015). Antecedents of consumer trust in mobile payment adoption. *Journal of Computer Information Systems*, 1-10.

Xu, H., & Gupta, S. (2009). The effects of privacy concerns and a personal innovativeness on on potential and experienced customers' adoption of location-based services. *Electronic Markets, 19*(2-3), 137-149.

Yadav, M. S. (1994). How buyers evaluate product bundle: A model of anchoring and adjustment. *Journal of Consumer Research, 21*, 342-353.

Yakhlef, A. (2001). Does the Internet compete with or complement bricks-and-mortar bank branches? *International Journal of Retail and Distribution Management, 29*(6272-281).

Yang, S., Lu, Y., Gupta, S., & Zhang, R. (2012). Mobile payment services adoption across time: An empirical study of the effects of behavioral beliefs, social influences, and personal traits. *Computer in Human Behavior*, 129-142.

Yang, Z. L., & Peterson, R. T. (2004). Customer Perceived Value, Satisfaction, and Loyalty: The Role of Switching Costs. *Psychology and Marketing, 21*(10), 799-822.

Yavas, U., & Shemwell, D. J. (1996). Bank image: exposition and illustration of correspondence analysis. *Intornational Journal of Bank Marketing, 14*(1), 15-21.

Yi, M. Y., Jackson, J. D., Park, J. S., & Probst, J. C. (2006). Understanding Information Technology Acceptance by Individual Professional: Toward an Integrative View. *Information and Management, 43*(3), 350-363.

Yi, M. Y., Jackson, J. D., Park, J. S., & Probst, J. C. (2006). Understanding informaton technology accpetance by individual profesional: Toward an integrative view. *Information & Management, 43*(3), 350-363.

Yigitcanlar, T., & Sarimin, M. (2010). Orchestrating knowledge-based urban development: lessons from Multimedia Super Corridor, Malaysia. *Knowedge-Based DEvelopment for Cities and Societies: Integrated Multi-Level Approches*, 281-295.

Yousafzai, S. Y., Foxall, G. R., & Pallister, J. G. (2010). Explaining internte banking behavior: theory of resoned action, theory of planned behavior or technology acceptance model? *Journal of Applied Social Psychology, 40*(5), 1172-1202.

Yousafzai, S. Y., Pallister, J. G., & Foxall, G. R. (2003). A porposed model of e0trust for electronic banking. *Technovation, 23*(11), 847-860.

Yousafzai, S. Y., Pallister, J. G., & Foxall, G. R. (2005). Strategis for Building and Communicating Trust in Electronic Banking: A Field Experiment. *Psychology and Marketing, 22*(2), 181-201.

Yousafzai, S., Pallister, J., & Foxall, G. (2009). Multi-dimensional role of trust in Internet banking adoption. *The Service Industries Journal, 29*(5), 591-605.

Yu, C. S. (2012). Factors affecting individuals to adopt mobile banking: Empirical evidance from the UTAUT model. *Journal of Electronic Commerce Research, 13*(2), 104-121.

Yu, H. C., Hsi, K. H., & Kuo, P. J. (2002). Electronic payment systems; an analysis and comparison of types. *Technology in Society, 24*(3), 331-347.

Yu, J., & Cooper, H. (1983). A Qualitative Review of Research Design Effects on Response Rates to Questionnaires. *Journal of Marketing Research, 20*, 36-44.

Yuthas, K., & Young, S. T. (1998). Material matters: assessing the effectiveness of materials managment IS. *Information Management , 33*(3), 115-124.

Zand, D. (1972). Trust and managerial proble solving. *Administrative Science Quarterly, 17*, 229-239.

Zeithaml, V. A. (1988). Consumer Perceptions of Price, Quality and Value: A Means-End Model and Synthesis of Evidence. *Journal of Marketing, 52*(July), 2-22.

Zhao, A. L., Hanmer-Lloyd, S., Ward, P., & Goode, M. M. (2008). Perceived risk and Chinese consumers' Internet banking services adoption. *International Journal and Bank Marketing , 26*(7), 505-525.

Zhou, T. (2015). An empirical examination of users' switch from online payment to mobile payment. *International Journal of Technology and Human Interaction*, 55-66.

Zhuo, T., Lu, Y., & Wang, B. (2010). Integrating TTF and UTAUT to explain mobile banking user adoption . *Computers in Human Behavior, 26*(4), 760-767.

Zokaee, S., Ebrahimi, S. B., & Ghazizadeh, M. (2012). Eletronic Payment System Evaluation: A Case Study in Iran. *Information Managemenr and Business Review, 4*(3), 120-127.

Zucker, L. (1986). Production of Trust: Institutional Sources of Economic Structure. *Research in Organizational Behavior, 8*, 53-111.