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**CONTINUANCE INTENTION OF E-GOVERNMENT  
SERVICE: A STUDY OF TAX E-FILING SYSTEM IN  
MALAYSIA**

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**UUM**  
**Universiti Utara Malaysia**

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**CONTINUANCE INTENTION OF E-GOVERNMENT SERVICE: A STUDY OF TAX  
E-FILING SYSTEM IN MALAYSIA**



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**Kolej Perniagaan**  
(College of Business)  
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## ABSTRACT

Governments in every country including Malaysia have spent huge amount of money for the development of electronic government services generally and specifically in tax e-filing system to ease the government services. Despite increases in investments and expenses in the development of e-government services and considering low level usage of this service compared to its availability is an important issue to be considered. At this vein, investigating the continuance intention of tax e-filing system is important, as the more citizens continuously use the tax e-filing system, the more operation and management cost could be reduced, to achieve target of usage by taxpayers in near future and for the success of this system. As such, aim of this research is to investigate the influence of trust, perceived system quality and perceived information quality on continuance intention of tax e-filing system among taxpayers in Malaysia. The results of this study were obtained from 425 taxpayers in Malaysia by using the Structural Equation Modelling (SEM) AMOS. Overall, most of the hypotheses developed were supported with the acceptable beta value between 2.857 to 12.453. The study found that perceived usefulness, trust, perceived system quality and satisfaction have significant positive influence on continuance intention of tax e-filing system, while, perceived information quality has insignificant influence on continuance intention of tax e-filing system. On other hand, trust, perceived system quality and confirmation have significant influence on satisfaction. Additionally, satisfaction was found mediates the relationship between trust and continuance intention, and perceived system quality and continuance intention. Hence, the finding of this study imply that full benefits and success of the e-filing system cannot be realized without continued usage as an e-government service can be considered success if a significant number of users move beyond the initial adoption and use the e-government services on a continual basis.

**Keywords:** e-government, e-filing, continuance intention, trust, system quality

## ABSTRAK

Kerajaan di setiap negara termasuk Malaysia telah menghabiskan sejumlah besar wang untuk pembangunan perkhidmatan kerajaan elektronik secara umumnya, dan secara khusus dalam sistem cukai e-filing bagi memudahkan perkhidmatan. Meskipun ada peningkatan dalam pelaburan dan perbelanjaan pembangunan perkhidmatan e-kerajaan, dan memandangkan tahap penggunaan perkhidmatan ini yang rendah berbanding ketersediaannya, hal ini menjadi isu penting yang perlu dipertimbangkan. Dalam keadaan ini, menyelidik penerusan niat sistem cukai e-filing adalah penting, kerana lebih ramai rakyat menggunakan sistem cukai e-filing lebih banyak kos operasi dan pengurusan dapat dikurangkan, bagi mencapai sasaran penggunaan oleh pembayar cukai pada masa hadapan dan juga demi kejayaan sistem ini. Oleh itu, tujuan kajian ini adalah untuk menyelidik pengaruh kepercayaan, tanggapan kualiti sistem dan tanggapan kualiti maklumat pada penerusan niat sistem cukai e-filing dalam kalangan pembayar cukai di Malaysia. Dapatan kajian diperolehi melalui 425 orang pembayar cukai di Malaysia dengan menggunakan Pemodelan Persamaan Berstruktur (SEM) AMOS. Secara keseluruhannya, sebahagian besar hipotesis yang dibangunkan disokong dengan nilai beta yang boleh diterima iaitu di antara 2.857 hingga 12.453. Kajian mendapati bahawa tanggapan kebergunaan, kepercayaan, tanggapan kualiti sistem dan kepuasan mempunyai pengaruh positif yang signifikan terhadap penerusan niat untuk menggunakan sistem cukai e-filing, sementara tanggapan kualiti maklumat pula tidak mempunyai pengaruh yang signifikan pada penerusan niat untuk menggunakan sistem cukai e-filing. Sebaliknya, kepercayaan, tanggapan kualiti sistem dan pengesahan didapati mempunyai pengaruh yang signifikan keatas kepuasan. Selain itu, kepuasan didapati mengantarakan hubungan di antara kepercayaan dan penerusan niat, dan tanggapan kualiti sistem dan penerusan niat. Oleh itu, dapatan kajian ini membayangkan bahawa manfaat penuh dan kejayaan sistem e-filing tidak dapat direalisasikan tanpa penggunaan yang berterusan. Hal ini kerana perkhidmatan e-kerajaan hanya dianggap berjaya sekiranya jumlah penggunanya adalah besar dan melebihi penerimaannya pada peringkat awal serta menggunakan perkhidmatan e-kerajaan ini secara berterusan.

**Kata kunci:** e-kerajaan, e-filing, penerusan niat, kepercayaan, kualiti sistem



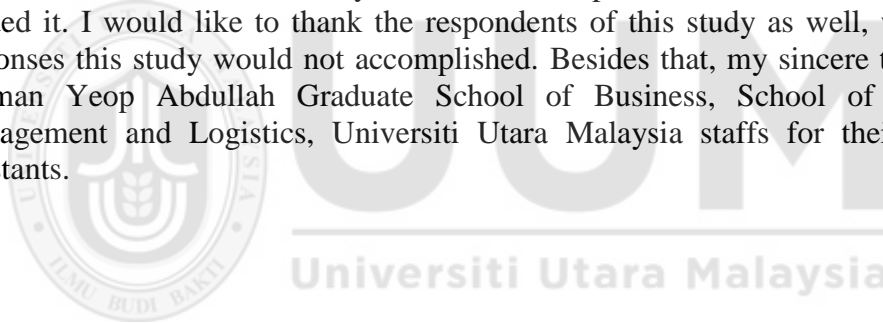
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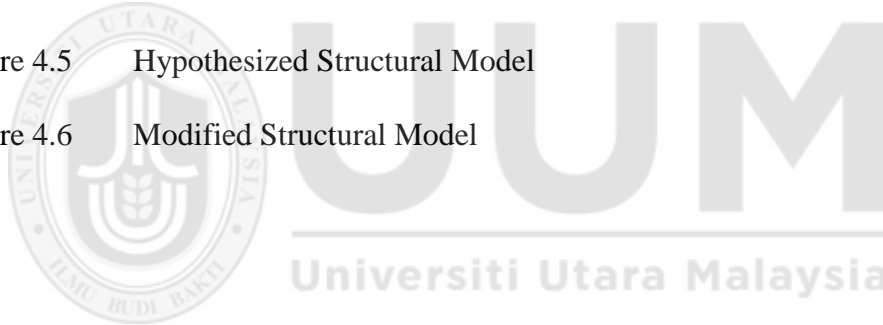
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## LIST OF ABBREVIATIONS

AMOS	Analysis of Moment Structures
AVE	Average Variance Extracted
CFA	Confirmatory Factor Analysis
CI	Continuance intention
CONF	Confirmation
CR	Composite Reliability
df	Degree of Freedom
E-banking	Electronic banking
E-filing	Electronic filing
ECM	Expectation Confirmation Model
ECT	Expectation Confirmation Theory
GOF	Goodness of Fit
IRBM	Inland Revenue Board Malaysia
IS	Information system
MAMPU	Malaysia Administrative Modernization and Management Planning Unit
PIQ	Perceived Information Quality
PSQ	Perceived System Quality
PU	Perceived Usefulness
RMSEA	Root Mean Square Error Approximation
SAT	Satisfaction
SEM	Structural Equation Modelling
SPSS	Statistical Package for the Social Science
TAM	Technology Acceptance Model

TPB	Theory of Planned Behaviour
TR	Trust
UNPAN	United Nation Division for Public Administration and Development Management
UTAUT	Unified Theory of Acceptance and Use of Technology



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# **CHAPTER 1**

## **INTRODUCTION**

### **1.0 Introduction**

This chapter aims to provide brief overview of research on continuance intention towards electronic government (e-government) services and particularly in the electronic tax filing system (e-filing) context in Malaysia. This chapter contains background of study, problem statement, research questions, research objectives, significance of study, scope of study, definition of key terms and organization of thesis.

### **1.1 Background of Study**

In this twenty first century, organizations are competing each others to survive in this globalization arena. Not only organizations, government sectors of each country also facing challenges and keep on finding the best ways to provide the better government services to their citizens. For that government agencies increasingly explore and giving priority for information and communication technologies (ICTs) to improve, advance the delivery and dissemination of government services and information (Azmi, Kamarulzaman, & Hamid, 2012; Chen, 2010) by using internet as a powerful tool to deliver government services via electronic means (Wangpipatwong, Chutimaskul, & Papasratorn, 2009) to the benefits of citizens and organizations. As the tremendous growth of internet users worldwide (Internet World Statistics, 2013), affordability and accessibility of ICT (Ahmad, Markkula, & Oivo, 2013) makes many government around the world transformed the delivery of services from traditional services (manual method) to electronic means (Satapathy, Mahapatra, Patel, Biswas, & Mishra, 2014). Thus, this internet and ICT evaluation offers government a new

medium to reach their citizens (Ahmad et al., 2013). Moreover, as the citizens become more internet savvy and have experienced of good quality of electronic services (e-services) from private sectors; such as e-business, e-commerce and others, this caused citizens' to expect the same high standards of e-services from government agencies in the delivery of public services (Al-Shafi & Weerakkody, 2010). Thus, to cater the citizens' needs and to take priority of speedy growth of internet popularity government launches electronic government (e-government) services (Vathanophas, Krittayaphongphun, & Klomsiri, 2008) for the benefits of citizens and government.

E-government refers as the communication between government and citizens via computer and web enabled presence (Evans & Yen, 2006). According to Srivastava and Teo (2007) e-government defined as "use of information and communication technologies (ICTs) and internet to enhance the access and delivery of all facets of government services and operations for the benefits of citizens, business, employees and other stakeholders". E-government utilize technology to support a government's interaction with multiple stakeholders; citizens, employees, business and other government agencies (Joseph, 2013). The four main categories of e-government are government to citizen (G2C), government to business (G2B), government to government (G2G) and government to employee (G2E) (Joseph, 2013). As overall, e-government is involves a primary changes in the government operations such as public sector structure, culture, values and the traditions of conducting services by using ICT through website as an important medium in government agencies (Santhanamery & Ramayah, 2015) for the delivery and enhancement of public services to the stakeholders.

E-government were launched in worldwide with the objective to make radical changes to the traditional approach delivery of public service (Al-Mamari, Corbitt, & Gekara, 2013). At the international level, United Nation (UNPAN, 2012) and Waseda University (Waseda University, 2013) continuously doing researches on the development of e-government around the world. In a survey conducted by United Nation E-government Survey 2012 (UNPAN, 2012), 193 governments around the world embarked on some form of e-government services implementation for the delivery of services to the citizens. Various types of e-government services continuously implemented and consequently this initiatives provides various benefits to both the users' of the e-government services and government agencies such as saving in travelling cost and time, providing convenient to access government services and information anytime and anywhere, simplification of procedure, improvement in office management and reduced operation and management cost (Ahmad et al., 2013; Wangpipatwong et al., 2009; Warkentin, Gefen, Pavlou, & Rose, 2002).

As understanding significance of e-government services to the development of the country, Malaysian government launched Multimedia Super Corridor (MSC) in August 1996 to accelerate Malaysia's entry into Information Age (Ambali, 2009; Santhanamery & Ramayah, 2012a) and to achieve knowledge-rich society and status of fully developed nation by the year 2020 (Thominathan & Thurasamy, 2011). Besides that, Malaysian Public Sector ICT Strategic Plan (2011-2015) were launched on 7th July 2011 which targeted to move government services to zero face-to-face service delivery, with 90 percentage of all government services available through online by 2015 and at the same time targeting to have usage of 90 percentage of total



transaction through online by year 2015 (MAMPU, 2011). Along with the launches of MSC, Malaysia government have lined up seven specific flagships as pioneering projects under MSC and includes e-government flagship as one of it (Santhanamery & Ramayah, 2012a).

### **1.1.1 Government Spending**

Considering importance of e-government services for the development of the country, government around the world have been spending large amount of money in the form of hardware, software, training, maintenance and communication infrastructure for the development of e-government services (Bhatnagar, 2009; Kamarulzaman & Azmi, 2010). Gartner (2013) stated that information technology spending in the worldwide were recorded approximately \$3.8 trillion in year 2013. In Malaysia large amount of money have been invested; RM 537.70 million in eighth Malaysian plan and RM 572.70 million in ninth Malaysian plan for the development of e-government services (Abdullah, Mansor, & Hamzah, 2013) and predicted this amount to grow 10 percent annually (Norshita, Halimah, & Mohammad, 2010). These investment have been made with the hope that the developed facilities will encourage more citizens to use e-government services (Islam, Yusuf, Yusoff, & Johari, 2012). Thus, the overall availability of e-government services reflects action taken by supply-side (evaluation journey made by government institution as service provider) in the development of e-government system (Lim, Tan, Cyr, Pan, & Xiao, 2011) but the benefits and success of e-government services very much evaluated based on volume (numbers of users) and frequency of usage by users' of this services (UNPAN, 2012).

Nevertheless, government's huge investment in upgrading technology and ICT infrastructure, many e-government services have been received low responses from citizens as certain technologies and resources not been fully utilized by citizens who still prefer to use traditional services with queue up in government offices rather than employs online services (Abdullah et al., 2013; Aziz & Idris, 2012a). Based on the UNPAN (2012) and UNPAN (2014) survey, e-government development index of Malaysia have been improved from 0.6101 in year 2010 to 0.6703 in year 2012 and to 0.6115 in year 2014 but with a dropped in ranking from 32nd (2010) to 40th (2012) and to 52th (2014). Malaysia was recorded in second ranking in South-Eastern Asia category with Singapore and Brunei Darussalam which are in first and in third ranking (UNPAN, 2012). Malaysia's e-participation ranking and index dropped from 12 (0.6571) year 2010 (UNPAN, 2010), 14 (0.5000) in year 2012 (UNPAN, 2012) and to 59 (0.5294) (UNPAN, 2014).

Thus, although great efforts have been taken by Malaysian government in the development of e-government services, the adoption rate of this e-services among citizens is still low (Alias, Idris, Ashaari, & Kasimin, 2011; Thominathan & Ramayah, 2013) compared with the availability of e-government services. However, this problem of low adoption not only faced by Malaysia but also faced by many other countries. According to UNPAN (2012) survey, e-government services usage level in most of the countries still low and far been limited than the availability and fast growing provision of the services including in most advanced countries. More importantly, the main challenges being faced by most of the government in providing online public services is that in engaging and retaining citizens for continued use of e-government services (Teo et al., 2008). According to Bhattacharjee (2001) while

initial acceptance of an information system is important first step towards realize IS success but its eventual success highly depends on continued use rather than first time use. Moreover, Wangpipatwong, Chutimaskul and Papasratorn (2008) stated that citizens' initial adoption and subsequent continued usage of e-government could reduced more operation and management cost.

Thus, above scenario depicted that e-government services were developed with huge amount of investment for the benefits of the country and citizens who becomes more internet savvy users. Despite rapid growth in e-government services development, low usage and more importantly the continued usage of this e-government services problem is crucial to be identified for the realization of benefits and full success of this service. According to Gauld et al. (2010) a country can be successful in technology development and delivery of e-government services, but a system is failure system if the potential users do not use or continually utilize of that technology.

Saha, Nath and Salehi-Sangari (2012) suggested that it is difficult to focus every aspect of e-government services and suggested to limit the area or context of which e-government services to be researched specifically. Accordingly, this research will focus on tax e-filing system in Malaysia which is fall on government to citizen (G2C) category of electronic service.

### **1.1.2 Overview of e-filing system**

Electronic tax filing (e-filing) system is one of project under e-government flagship (Hussein, Mohamed, Ahlan, & Mahmud, 2011). While there are many online services

that involves interaction between government to citizens (G2C), e-filing is one of the most important, advanced and have great impact on society and development in the country (Azmi et al., 2012; Hussein, Mohamed, Ahlan, Mahmud, & Aditiawarman, 2009). In Malaysia, tax e-filing system was launched by Inland Revenue Board Malaysia (IRBM) in year 2006 on behalf of Malaysian government for the purpose of filing tax electronically by salaried taxpayers (Hussein et al., 2011). The main objective of e-filing system development is to facilitate tax compliance and to provide services to taxpayers through use of internet technologies and World Wide Web (WWW) (Hussein et al., 2011). In addition, other two fold objectives are; to be more effective in the tax filing returns' processing task and operational process and to serve better the taxpayers' interest by overcome and solve taxpayers problems or difficulties with manual method (using paper based system) and at the same time to encourage voluntary compliance by the tax payers in filing tax return (Ambali, 2009). In Malaysia, the idea to move towards e-filing system as alternative to the existing manual tax return system taken place for the vision of a fully developed country to be achieved by year 2020 (Aziz & Idris, 2012a). By using tax e-filing system, taxpayers able to prepare, report and pay tax returns through online (Hussein et al., 2011).

Tax authorities in the world increasingly making used e-filing system for the improvement in operational efficiency and effectiveness and as well as to modernize service delivery (Mpinganjira, 2015). Since e-filing system was introduced in 2006, tax authority (IRBM) in Malaysia have been invested substantial amount of money and resources in the development of e-filing system (Azmi et al., 2012). The e-filing system have undergone progressive improvement such as used more robust engine like Firefox and Opera (Ambali, 2009), three fold increases in the internet bandwidth

for e-filing website from 90MB to 300MB (Meikeng, 2014), improvement in server capacity (Islam et al., 2012) and also Disaster Recovery Plan action taken to protect electronic services and relevant data (Meikeng, 2014).

Currently in Malaysia there are two major tax filing methods, which are manual tax filing and electronic filing system (Thominathan & Thurasamy, 2011). Thus, e-filing system is serves as an alternative channel to the taxpayers for submit their tax return through online (Ambali, 2009). Not only in Malaysia, in many countries e-filing system is also voluntary usage e-government services as the taxpayers have options to submit tax returns via e-filing system or else submit manually as paper income tax return (Ojha et al., 2009).

In Malaysia through traditional manual system, taxpayers have to submit their tax returns manually. First, IRBM will send to the eligible taxpayers, such as BE and B form for Resident individual; M form to Non-Resident Individuals; C, R and CP 204 forms to Companies, P, E forms for others categories of taxpayers. Then, the tax payers need to fill up the forms, do self computation on the amount of tax need to pay, attach together all the payment receipts and need to submit the completed set of form with the attachment to IRBM branches by personally or through mail. After that, IRBM will send confirmation of the payment amount to the taxpayers (Thominathan & Thurasamy, 2011). While in electronic tax filing system, taxpayers have to log in e-filing system, select and complete the appropriate form, sign the form and submit the form electronically. Once, the from is submitted, immediate acknowledgment will be send to the taxpayers from tax authority (World Bank, 2013). In addition, during the process of key-in information, users of the system are given flexibility to move back

and forth between pages (Kamarulzaman & Azmi, 2010). Thus, with using e-filing system, taxpayers and tax practitioners able to prepare and do payment of tax returns through electronically via the enabling technologies (Ambali, 2009; Hussein et al., 2011). As overall, this e-filing system serves as a major advantage over traditional manual procedures as this system integrates tax preparation, filing and payment, which eventually makes tax filing and payment easier (Ambali, 2009).

Prior studies revealed that manual tax filing limits the capability of processing tax filing quickly and this consequently causes delays or takes times in the process collection of income taxes from taxpayers (Ambali, 2009). Other than that, with the increases in the amount of taxpayers caused additional man power and extra time required to process tax returns in the manual tax filing system as data have to be entered manually into the database (Ambali, 2009). Moreover, manual tax filing system consume more monetary cost such as postage and travelling expenses involves for the tax filing submission purpose (Ibrahim & Pope, 2011).

Alternatively, e-filing system serves more measurable benefits to the taxpayers than manual tax filing method. E-filing system offers benefits of flexibility of time in filing tax returns (Azmi et al., 2012). This allows taxpayers to submit or file their tax returns from anyplace and at anytime in a given specific tax filing period (Ambali, 2009) without queuing up in tax office branches (Lu & Ting, 2013) where this provide greater convenience to the taxpayers (Ambali, 2009). According to Lu and Ting (2013) the other benefit is e-filing system is simple and fast and secure process. Furthermore, the system reduces and minimizes errors of the calculation of tax returns

(Azmi et al., 2012). Faster refund is another important benefit that citizens received when tax return done electronically (Rahim, Ahmad, Aziz, Hamid, & Nen, 2012).

Additionally, administratively e-filing system also offers greater benefits to the service providers or tax authorities (Azmi et al., 2012 and Hussein et al., 2010). Firstly, e-filing system helps in reducing workloads of service provider (Azmi et al., 2012) where the system shortens the process and indirectly reduces superfluous human resources (Lu & Ting, 2013). Secondly, e-filing system allowing saving in operational cost by converting the submission of manual tax returns into a paperless process (Azmi et al., 2012). Thirdly, the system also reducing the tax returns processing, storage and management cost (Azmi et al., 2012) and indirectly this help to save and reallocate the resources to other task such as auditing, customer services and etc (World Bank, 2013). Fourthly, the system also reduces printing and mailing costs of service provider (Ramoo, Ramayah, Lo, & Ping, 2013). Lastly, the system allows service provider to manage the process of tax filing by the citizens effectively via the enabling technologies (Hussein et al., 2011).

During the initial launches of e-filing system in Malaysia received many negative responses and also have been debated in many mass media about this system (Hussein et al., 2011). The following year 2007, total of 700,000 taxpayers e-filed their tax return, the number then increased to 874,814 (2008) (Islam et al., 2012), 1,466,507 (2009) (Annual Report IRBM, 2010) to 1,666,134 in year 2010. In year 2011 the usage number was recorded 1,914,110 submission via e-filing system by individual tax payers (Annual Report IRBM, 2011). This volume usage rate of e-filing system shows that only approximately 34 percent of 5.5 million total registered individual tax payers in year 2011 have submitted tax return via e-filing system (Annual Report



IRBM, 2011; Gazali, 2012), where this volume is far short from the IRB goal to have 80 percentage of taxpayers using e-filing system by year 2011 (Tallaha, Shukor, & Hassan, 2014). IRBM not withdrawn from target of 80 percent usage and again set goal to reach 80 percent usage of e-filing system by Malaysian taxpayers in near future (Islam et al., 2012). In year 2012, 2,268,222 number of taxpayers submitted tax return via e-filing (Annual Report IRBM, 2012). Based on Malaysian Well Being Report (year 2013) this amount reflect 39.0 percentage of taxpayers filed their tax through e-filing system (Economic Planning Unit, 2013). Whereas this means that 61.0 percentage of taxpayers still submitting tax manually.

Thus, above statistics shows that even though there is increases in acceptance of e-filing system, but it is quite low compared to the total number of registered tax payers and expectation of IRBM in Malaysia (Ghazali, 2014; Islam et al., 2012) despite huge investment, improvement of technology and various promotion activities to enhance or increase level of usage e-filing system (Ambali, 2009; Aziz & Idris, 2012b). Figure 1.1 shows overall volume of Malaysian individuals and companies using e-filing increased from five percentage to 34 percentage within year 2006 and 2011 (World Bank, 2013).

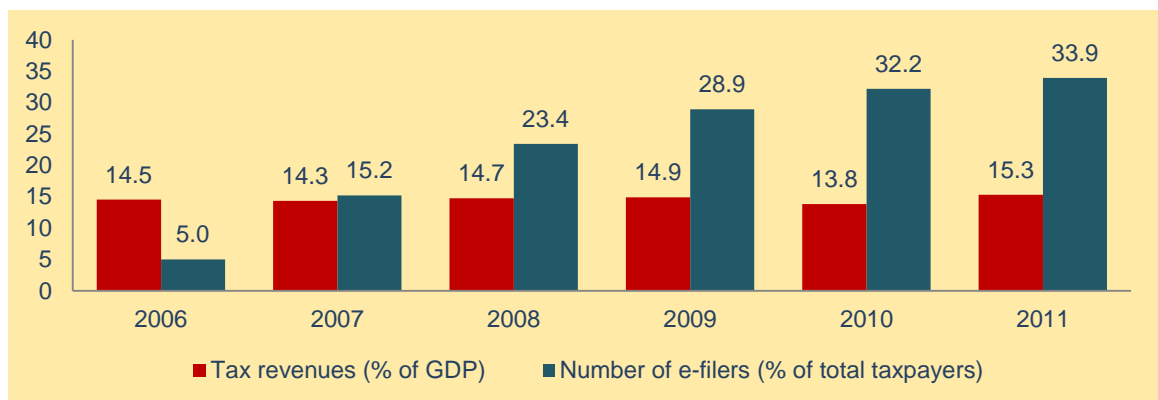


Figure 1.1

*E-filing usage has increased among individuals and companies in Malaysia*

Source: World Bank (2013)

Although e-filing system receiving much attention, growing trends and serves measurable benefits to the tax payers and tax authorities or service providers (Ambali, 2009; Azmi et al., 2012; Lu & Ting, 2013; Rahim et al., 2012; Ramoo et al., 2013) this system has been slow in gaining acceptance among taxpayers (Azmi et al., 2012). Other than that, since e-filing system is completely voluntary, the main challenges faced by Malaysia government is to encourage tax payers to submit tax returns through online instead of manual submission (Dorasamy, Marimuthu, Raman, & Kaliannan, 2010). More importantly, according to Bhattacharjee (2001), even initial acceptance of information system (IS) is an essential first stage to realize an IS success but its eventual achievement or success highly depends on continued use than first time use. Hence, e-government success especially e-filing system success depends more on continuous use rather than first time use (Chen et al., 2015).

Thus, based on above discussion it is noted that e-filing system is one of important e-government service which become an important medium for collection of taxes (a primary sources of fund for the development of the country) from the salaried tax payers and more importantly the taxpayers' continued use of this system is vital for the full success of this e-filing system. In addition, given the government's huge investment for the development and upgrades of e-filing system and 80 percent of target of the adoption yet to be achieved, thus the identification of the factors that influences continuance intention deemed to be important for the success and to promote continuous usage intention among e-filing system users.

## 1.2 Problem Statement

Despite increases of investments and expenses in the development of e-government services and considering low level usage of this services than availability, thus at this vein continuance (continued use) intention deems to be important towards e-government services and particularly in tax e-filing system as more citizens continuously use this online services, the more operation and management cost could be reduced (Thominathan & Ramayah, 2014), to achieve 80 percent of target usage by taxpayers near future (Islam et al., 2012) and for the success of this system. Furthermore, at the same time the increases number of tax e-filing users indicates important sign to tax authority how to retain the existing users of e-filing system (Azmi & Aziz, 2015). This is because, most of government agencies that provides online public services faces challenges to retain and keeping citizens engage to continued use the existing e-government services (Teo et al., 2008).

According to Datuk Dr Mohd Shukor Mahfar (IRBM tax operation division deputy director-general), the cost for manual tax filing printing and issuing a form is cost RM6.88 to each taxpayer and overall its cost RM 5.4 million to issue 800,000 forms to the individual taxpayers and sole proprietors who is still prefer to fill up tax return forms manually (Shari, 2010). While, with e-filing usage for the purpose of tax return, IRBM Malaysia managed to saved RM 6.88 per form (Aziz & Idris, 2012a) and nearly RM 9,162,845.64 have been saved in year 2009 (Santhanamery & Ramayah, 2013). Moreover, as cited in UNPAN (2014) only less than half of the taxpayers have adopted tax e-filing system despite promise of faster refund by IRBM. Thus, heavy investment made in e-government services and particularly in e-filing system would become waste of effort if the citizens not utilizing the particular system for long term

(Thominathan and Ramayah, 2014). More importantly, infrequent or ineffective usage of a technology after initial adoption caused undesirable cost and waste of effort on the development of particular online technology (Hong, Thong, & Tam, 2006). Moreover, Heeks (2008) revealed that only 15 percent of e-government projects are successful, 50 percent of e-government projects recorded partially failed and totally failed amounted 35 percent and more importantly the major portion of failures projects were from developing countries. In addition, according to recent study by UNPAN (2014) the number of e-government usage in most of developing countries is lower than 50 percent and suggested that more improvement is needed on demand side to increase take-up of e-government. Rehman, Esichaikul and Kamal (2012) stated that there is great deal of attention is needed for the developing countries to makes e-government projects successful.

Therefore, initial adoption and at same time subsequent continued usage of e-government services necessary to receive the maximum benefit of e-government service (Alalwan, 2013). While initial adoption of e-government services is a key indicator of e-government success, but this does not necessarily lead to the desired outcome unless a significant number of citizens move about beyond the initial adoption and use the e-government services on continual basis (Wangpipatwong et al., 2009). Moreover, even a technology is success in initial adoption, users' will re-evaluate their decision and may decline or discontinue use it in future again if that technology does not meet user's requirement (Bhattacharjee, 2001; Hernandez-Ortega, Serrano-Cinca, & Gomez-Meneses, 2014; Limayem & Hirt, 2003; Wangpipatwong et al., 2008)

Based on above contention, understanding factors that influences continuance (continued use) intention towards e-government services is an essential step to achieve government goal (Alalwan, 2013) particularly in e-filing context which is target to achieve 80 percent usage near future (Islam et al., 2012) and overall Malaysian government's target to achieve zero face-to-face service delivery with target usage 90 percentage of total transaction by citizens through online by year 2015 (MAMPU, 2011), to reduce more operation and management cost (Thominathan & Ramayah, 2014) and to ensure success of this services. This is because continuance at individual level have been deems to be important for long term sustainable of web-based services (Lee & Kwon, 2011) and central to the survival for the electronic service providers (Bhattacharjee, 2001).

By analysing existing literatures in continuance intention and e-government, despite past researches provide profound importance of user's continuance intention, to date most of the prior studies are have been focused more on initial adoption of e-government services (Aziz & Idris, 2012b; Azmi et al., 2012; Azmi & Kamarulzaman, 2010; Azmi & Bee, 2010; Hussein et al., 2011; Ilias & Razak, 2009; Ilias, Suki, Yaso, & Rahman, 2008; Lean et al., 2009; Ramayah, Yusoff, Jamaludin, & Ibrahim, 2009; Ramoo et al., 2013; Suki & Ramayah, 2010; Tallaha et al., 2014) while very less research is focused on continuance (continued use) intention (Belanche, Casalo, Flavian, & Schepers, 2014; Hoehle, Huff, & Goode, 2012; Santhanamery & Ramayah, 2012b) which is about what happens beyond the initial adoption stage (Limayem, Hirt, & Cheung, 2007) empirically in e-government services and specifically in e-filing context in Malaysia. Where, very limited studies that emphasized on the motivation behind the continuance intention of e-filing

system. This shows that, less focused is considered in the long-term engagement and interactions among e-government service provider and citizen (Chatfield & AlAnazi, 2013). Hence, study by Chatfield and AlAnazi (2013) stated that the full benefits of e-government is difficult to achieve if users without or not continuously use e-government services beyond initial adoption. Other than that, the research in e-government studies relatively sparse in developing countries especially focused on post adoption and in Malaysia particularly. Much of the prior e-government studies focused on developed countries in the western world. Thus, given the paucity of continuance intention research both generally in e-government context and particularly in e-filing context, thus to fill this gap in the literature, this research attempt to investigate factors that influences citizens' continuance intention towards e-filing system in Malaysia.

Trust is central issues in most of places; daily business interaction, communication, transaction and especially in involvement of this interaction through internet (Hussein et al., 2011). But, researchers just beginning to discover the role of trust in e-government researches empirically (Belanger & Carter, 2008). Trust is essential and critical element when uncertainty or risk is involves in online environment (Belanche, Casalo, & Flavian, 2012; Belanche et al., 2014; Belanger & Carter, 2008) due to privacy and security of users are at risk as the exchanges of personal and sensitive information through internet to the service provider (Venkatesh, Thong, Chan, Hu, & Brown, 2011). In addition, increases in computer hacking, identity theft, online fraud and other internet related prohibited activities more prevalent than ever before due to the disclosure and transmission of personal and sensitive information (Belanche et al., 2014; Venkatesh et al., 2011). In Malaysia, based on the statistics from Cyber

Security Malaysia (2013), 10,636 security incident such as online fraud, hacking, malicious programs, intrusions and other prohibited activities were recorded in year 2013 in which this record were increased from 9986 incidents than a year before. Increases in amount of online vulnerabilities, may cause user's to reconsider back their willingness to share important personal and private information through e-services in future (Belanche et al., 2014). In e-filing system context, even government have been improved and gain significant response from citizens, lack of trust in system and security and privacy issues remains as main citizens' issue and concerns when using e-filing system due to transaction of personal information (Ambali, 2009; Hussein et al., 2011) specifically and of e-government services (Belanger & Carter, 2008; Sahari, Zainal Abidin, Kasimin, & Mohd Idris, 2012) generally. Trust is more crucial in the perspective of e-government as citizens could not find alternative online channel that provide same purpose (Teo et al., 2008). In the absent of sufficient trust in e-government generally and e-filing specifically users will revert back to traditional offline interaction with government (Santhanamery & Ramayah, 2012b; Teo et al., 2008). This will lead undesirable lost and failure to the government (Santhanamery & Ramayah, 2012b). Although importance of trust highlighted in previous researches, based on review of past studies, to date it had been find out that role of trust have been widely considered and researched in initial adoption of e-government services while there have been less focused is given in post-adoption stages or continuance intention especially in e-government particularly in tax e-filing system in Malaysia empirically. Other than that, as noted earlier the issue of increases of various type of online vulnerabilities in Malaysia, due to trust have been one of main challenges in e-filing implementation in Malaysia (Ambali, 2009; Hussein et al., 2011), as relatively little is known role trust on post adoption stage or in continuance intention empirically



in e-government research (Belanche et al., 2014) and particularly in e-filing system and then as a strong call for further research role trust in e-government context (Teo et al., 2008), therefore trust is considered in this research as e-filing system involves of transmission of personal and sensitive information (Hu et al., 2009) and risks between taxpayers and government.

Other than that, from review of previous studies, have identified that the extant of prior studies extensively focused on examination of system quality and information quality perception towards initial intention to use and subsequent satisfaction in e-government and e-filing context (Almahamid et al., 2010; Ilias & Razak, 2009; Khayun & Ractham, 2011; Rehman et al., 2012; Wang & Liao, 2008). Even, quality perception largely formed through user's personal previous experiences with the technology itself, but in post adoption context this perception can have direct effects on users' future intention to use or not (continuance decision) that technology again in future (Teo et al., 2008). However, in past studies, researchers have given little attention on quality factors to examine continued use in e-government context (Wangpipatwong et al., 2009) and particularly in e-filing context. Although e-government development have become global trend, but the mechanisms that pertaining to the way which quality belief affects citizen's continuance usage or long term adoption of e-government remains largely unclear in past studies (Teo et al., 2008).

Although tax e-filing system have improved, gained significant response and existed many years in most of the countries including in Malaysia, issues regarding system quality such as technical difficulties, functional difficulties, slow processing speed,

system breakdown and downtimes issues which forced the users to queue in the system still exist (Chen, 2010; Chen et al., 2015; Chumsombat, 2014; Hussein et al., 2011) and this caused user dissatisfied and weaken overall users' perception towards the system (Chen et al., 2015). Other than that, issues such as imbalance and asymmetrical information regarding taxpayers incomes and deductible expenditures impacts negative perception towards e-filing system information quality (Chen, 2010). Hence, regardless how good are the information is, if it cannot proceed effectively and efficiently, overall perception will become negative (Chen, 2010; Chen et al., 2015). In online tax filing system, when citizens use the system needs to download necessary documents, navigate different pages, precise and sufficient information at right time to complete task related activities (Saha et al., 2012). Furthermore, Saha et al. (2012) suggested that since perceived quality is an key determinants of a web success, thus citizens perceptions and expectations need to be identified to increase efficiency and effectiveness of online tax filing service. In this regards, based on above scenario, it is reasonable, meaningful and crucial to understand the influence of perceived system quality and perceived information quality on continuance intention of tax e-filing system. Moreover, as to best of researcher knowledge, the literatures lacks empirical research that confirms the importance of perceived system quality and perceived information quality towards continued use intention specifically in tax e-filing context. Hence, this research attempt to explore the relationship of perceived system quality and perceived information quality on continuance intention of tax e-filing system in Malaysia.

Perceived usefulness is defined as "the degree to which a person belief that using particular system would enhance his or her job performance" (Davis, 1989). Previous

studies found that perceived usefulness have significant influence on continuance intention (Akter et al., 2012; Al-Maghrabi & Dennis, 2011; Ambali, 2009; Belanche et al., 2014; Chong, 2013; Hoehle et al., 2012; Hu et al., 2009; Jiang, 2011; Lee, 2010; Li & Liu, 2014; Limayem & Cheung, 2011; Thominathan & Ramayah, 2014; Wangpipatwong et al., 2008; Zhou, 2011). At the same time some prior researchers also have found that statistically insignificant influence of perceived usefulness on continuance intention (Almahamid, 2009; Hung, Yang, & Hsieh, 2012; Jiang & Ji, 2014; Shiau & Chau, 2012; Susanto et al., 2012). Perceived usefulness considered in this study as inconsistency nature of findings relationship between perceived usefulness and continuance intention in previous studies.

Satisfaction is individual's feelings of pleasure or disappointment which is resulting from comparing the individual's perception of a product's or service's performance to the user's expectation level (Hsu & Chiu, 2004). One of important challenges facing by government in providing e-government services is to maintain and to continuously improve user' satisfaction with the provided e-services (Alruwaie, El-Haddadeh, & Weerakkody, 2012). Moreover, specifically in the context of e-filing system government faces challenges in the development of e-filing system that can satisfy the taxpayer's needs, desires and perception (Carter, Shaupp, Hobbs, & Campbell, 2011). In addition, from review past literatures found out that limited research done on influence of satisfaction on continuance intention in e-government research (Irani et al., 2012) especially in e-filing context in Malaysia. Prior researches (Bhattacharjee, 2001; Chang, 2013; Chen et al., 2012; Hernandez-Ortega et al., 2014; Hoehle et al., 2012; Yaya, Marimon, & Casadesus, 2014) have been examined and found satisfaction played mediator role in various context of technologies adoption. Similar

to past studies, this research also aim to test mediating effect of satisfaction to determine whether satisfaction influences relationship between perceived usefulness, trust, perceived system quality and perceived information quality on continuance intention of tax e-filing system.

As overall, there is relevance to study perceived usefulness, trust, perceived system quality, perceived information quality and satisfaction factors on continuance intention of tax e-filing system in Malaysia to achieve the fixed goal and for the full success of this electronic service in near future.

### **1.3 Research Questions**

The primary aim of this research is to investigate the influence of trust, perceived system quality and perceived information quality on continuance intention of tax e-filing system in Malaysia. The specific research questions that identified for this research are as follow:

- 1) What is the relationship between perceived usefulness and continuance intention of tax e-filing system?
- 2) What is the relationship between trust and continuance intention of tax e-filing system?
- 3) What is the relationship between perceived system quality and continuance intention of tax e-filing system?
- 4) What is the relationship between perceived information quality and continuance intention of tax e-filing system?
- 5) What is the relationship between satisfaction and continuance intention of tax e-filing system?

- 6) What is the relationship between perceived usefulness, trust, perceived system quality, perceived information quality and confirmation on satisfaction?
- 7) What is the relationship between confirmation and perceived usefulness?
- 8) Does satisfaction mediate the relationship between perceived usefulness, trust, perceived system quality and perceived information quality on continuance intention of tax e-filing system?

#### **1.4 Research Objectives**

The objectives of this research are as follows:

- 1) To investigate the relationship between perceived usefulness and continuance intention of tax e-filing system.
- 2) To investigate the relationship between trust and continuance intention of tax e-filing system.
- 3) To investigate the relationship between perceived system quality and continuance intention of tax e-filing system.
- 4) To investigate the relationship between perceived information quality and continuance intention of tax e-filing system.
- 5) To investigate the relationship between satisfaction and continuance intention of tax e-filing system.
- 6) To investigate the relationship between perceived usefulness, trust, perceived system quality, perceived information quality and confirmation on satisfaction.
- 7) To investigate the relationship between confirmation and perceived usefulness.

- 8) To investigate whether satisfaction mediate the relationship between perceived usefulness, trust, perceived system quality and perceived information quality on continuance intention of tax e-filing system.

### **1.5 Significance of study**

From review of past literatures have shown that user's continuance intention is important for the further and full success of an online service (information system). As mentioned earlier, most of the prior studies focused more on individual adoption of an information system while lack of empirical studies that focused on continuance intention or post adoption environment which is about what happens beyond the initial adoption stage in e-government studies and particularly in e-filing context in Malaysia. Thus, this research enhances e-government literatures by exploring and providing insight about the factors that seems to influence continuance intention of tax e-filing system in Malaysia. The researcher expects that this research have contributed theoretically and practically by broadening and deepening continuance intention and e-government literature.

In the aspect of theoretical contribution, the finding from this study expects to strengthen, enrich body of knowledge and theory of continuance intention in e-government context. The research attempted to use Expectation Confirmation Model (ECM) developed by Bhattacharjee (2001) in tax e-filing system with relevant additional factors (perceived system quality, perceived information quality and trust) in Malaysia to elucidate factors which influences continuance intention towards e-government services or more specifically in tax e-filing system. To date, although few researchers have developed linkages between the constructs (that chosen in this

research) but as researcher aware of there is very lack of empirical studies have overlooked the linkages as outline in this research in a single model which investigates factors that influences continuance intention of tax e-filing context. Thus, this research attempt to provide a comprehensive set of model that influences continuance intention towards e-filing system. Furthermore, based on review of past literatures most of the technology adoption and e-government studies specifically in Malaysia focused more on initial adoption than continuance intention, thus to date as researcher aware of and have not found yet the newly developed model in this research have been used in Malaysia before this in e-government and specifically in e-filing context. Continuance usage contributes to the subsequent or full success of an information system.

Thus, this research may help academicians in the e-government field and particularly in Malaysia as only quit few studies that tackle this similar issues previously (Thominathan & Ramayah, 2014). Hope the outcome of this research provided a comprehensive understanding on the factors that have greatest influences on user's continuance intention towards e-filing system. Furthermore, in user's post adoption environment the identification of trust, perceived system quality and perceived information quality beliefs or perceptions will improve the effectiveness and efficiency of e-government service generally and e-filing system particularly. Therefore, this research would benefit the practitioners as well as academicians in enhancement of body of knowledge. Furthermore, the research model developed in this research could provide reference for further any studies in different types of e-government services in future.

From the practical contribution side, the above information regarding an user's continuance intention decision is desirable for e-government services generally and particularly in e-filing context as the overall usage still very low than available resources which have been developed with huge amount of investment and to achieve government's goal and success of particular technology. Through this research, hopes that this study will provide and assist IRBM (a responsible organization handling income tax matters) to identify about more accurate factors that influences user's continuance intention towards e-filing system. Thus, the result from this research could grant useful guidelines that can facilitate IRBM and service designer to advance, deliver effective service, provide convenience and accessibility, formulate better strategies to improve system and information quality and manipulate system design as what taxpayers needed which could help enhance taxpayers to continuously use the e-filing system in future.

### **1.6 Scope of study**

It is difficult to focus every aspect of e-government services in one study (Saha, Nath and Salehi-Sangari, 2012). Therefore it is essential to limit the area of the study and thus this research will focus on tax e-filing system in Malaysia which is fall on government to citizen (G2C) category of electronic service. The scope of this research focuses on factors that influences individual taxpayer's continuance intention towards e-filing system in Malaysia. The selection of this e-government service is because of its crucial role in the process collection of taxes from salaried taxpayers. Since taxes are primary sources of government for the development of infrastructure in the country. Furthermore, e-filing system is one of the e-government service which have most important, advanced and have great impact on society and development in the



country (Azmi et al., 2012; Hussein, Mohamed, Ahlan, Mahmud, & Aditiawarman, 2009). In this research, questionnaire survey method used for the data collection purpose. The population of this research is individual taxpayers in Malaysia.

### **1.7 Definition of Key Terms**

This section describes some main key terms used in this research. The key terms indicate the operational definitions of the variables and assist in understanding the concept within the context of the study.

a. Continuanace intention

Continuance intention defined as users' intention to continue using a technology (Bhattacharjee, 2001). In this research, continuance intention defined as taxpayers' intention to continue using e-filing system to file their tax return.

b. Perceived usefulness:

Perceived usefulness defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989). In the context of this research, perceived usefulness defined as taxpayers believes that using e-filing system would enhance taxpayers' performance of tax filing submission via tax e-filing system.

c. Confirmation:

Users' perception of the congruence between expectation of a technology use and its actual performance (Bhattacharjee, 2001). In the case of tax e-filing

system, taxpayers' perception of the congruence between expectation of the e-filing system use and its actual performance.

d. Satisfaction:

Satisfaction is refers as individual evaluation of the product or services based on overall experience with it (Oliver, 1980). In the context of this research, satisfaction is defined as taxpayers' evaluation of the e-filing system based on overall experience with it.

e. Trust:

In e-government, trust means user trusting that the e-government service provides accurate information, data will be protected, and transaction will be conducts in a secure manner and recorded appropriately (Sengovia, Jennex, & Beatty, 2009). The extent that an individual believes that using e-government is secure and has no privacy threats (Chong, 2011). In e-filing context, taxpayers' believes that using e-filing system is secure, has no privacy threats and data will be protected.

f. Perceived system quality:

Perceived system quality defined as the users' evaluation of an IS from the technical and design perspectives (Islam, 2012). In the context of this research, perceived system quality defined as taxpayers' evaluation of tax e-filing system from the technical and design perspectives.

g. Perceived information quality:

Perceived information quality refers to the extent to which a user views the information provided by a website as current, accurate, relevant, useful and comprehensive (Yi, Yoon, Davis & Lee, 2013). In the context of this research, perceived information quality defined as the extent the taxpayers views the information provided by e-filing system as current, accurate, relevant, useful and comprehensive.

### **1.8 Organization of Thesis**

This research organized into five chapters. The following describes briefly each of the chapter.

Chapter one presented the important topic of this research which includes background of the study, problem statement, research questions, research objectives, significance of study, scope of study, definition of key terms and the organization of thesis.

Chapter two is literature review which explained about review of issues, definition and findings from past studies related to e-government, continuance intention, perceived usefulness, trust, perceived system quality, perceived information quality, confirmation, satisfaction and development of theoretical framework and hypotheses based on literature review.

Chapter three covers about research methodology which presented about the methodology have been used in this study which covers research design, sampling method, construction of questionnaire, data collection and analysis method.

Chapter four covered about result of finding which consists of description about profile of respondents, test of non-response bias, data screening process which includes missing data, outliers, normality, multicollinearity, linearity, homoscedasticity to obtain reliable data for the further analysis. Furthermore, this section also covered about measurement and structural model results.

Chapter five covered about the key findings and highlighted contribution of this study. This chapter also presents the limitation of the study, as well recommendation for future research and conclusion.



## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

Chapter two discusses overview of e-government and review of literatures based on previous empirical findings on continuance intention, perceived usefulness, trust, perceived system quality, perceived information quality, confirmation and satisfaction variables. Lastly, theoretical framework and hypotheses of this research developed.

#### **2.1 Overview of e-Government**

Revolution in information and communication technology (ICT) have transformed government and citizens' way of interaction where this changes turned to new form of government called as e-government (Rehman et al., 2012). There are diverse definitions of e-government in existing literatures. Saha et al. (2012) stated that there is no one universally applicable definition of e-government. According to Evans and Yen (2006) e-government is communication or interaction between government and citizen via computer or web enabled services. Srivastava and Teo (2007) defined e-government as use of ICT and internet technology for the benefits of government's stakeholder group (citizens, businesses and government itself) to enhance the delivery and access of all facet of government services. While Chen (2010) stated that e-government is use of IT to improve the delivery of government services. Thus, overall this definition implied that government's use of information and communication technologies to transform and improve government services through providing e-government services.

### **2.1.1 Type of e-government**

In previous researches with regards to e-government function, Fang (2002) sorted e-government into eight categories; government to citizen (G2C), citizen to government (C2G), business to government (B2G), government to business (G2B), government to government (G2G), government to employee (G2E), government to nonprofit (G2N) and nonprofit to government (N2G). However, Evans and Yen (2006) divided e-government into four main categories; government to citizen (G2C), government to business (G2B), government to government (G2G) and government to employee (G2E).

Government to citizens (G2C) is about the service delivery focus on communication between citizen and government in an efficient and electronic manner (Evans & Yen, 2006). Government to business (G2B) is about service provided by government to all type of private institutions through facilitating access to important information and services (Fgee & Alkallas, 2013). This category focus on gather relevant and better information and focus on reduce cost (Evans & Yen, 2006) and covers areas such as procurement, employee reporting and control, business life cycles, reporting sales tax and control and environment compliance (Boon, Ramayah, Ping, & Lo, 2013). Government to government (G2G) focused on improvement on efficiency in delivery and transaction of information within government or with other government agencies (Evans & Yen, 2006). Government to employee (G2E) category focus on delivery systems within the e-government system to create substantial savings by allowing better management of supply chain and information gathering process (Evans & Yen, 2006).

The focus of this research falls on government to citizen (G2C) category. This is because the online tax filing system is a type of government to citizens (G2C) electronic service which provide opportunity to availing online tax services to taxpayers (Saha et al., 2012). Moreover, as this research is intends to empirically investigate the continuance intention perspective of the taxpayers, who is the link between the government and the citizens. According to Wang and Liao (2008) the key to make e-government success is not depends on technology but on the citizens. Other than that, a study regarding G2C could reflect about the significance of the e-government implementation in Malaysia (Hussein et al., 2011). Thus this research focus on tax e-filing system continuance intention on the citizen perspectives.

### **2.1.2 Stages of e-government**

United Nation E-government survey have identified four major e-government development stages which involves; emerging information services, enhanced information services, transactional services and connected services (UNPAN, 2012). The first stage of emerging information services, involve government providing of basic information about laws, public policy, regulations, related documentation and provide links to government department, ministries and other branches of government. At the second stage, enhanced information services, involves government providing one or two way communication between government and citizens such as downloadable of government applications and services. The third stage is transactional services, involves two way communication and interaction between government and citizens such as e-voting, filing taxes online, downloading and uploading forms, license renewal, financial transaction and others. The last stage is connected services, the most sophisticated process which involves integration of

G2C, G2G and interactions, which involve government requisition of information and opinion from citizen using web 2.0 or other interactive tools which more to give empowerment to citizens in decision making process and involved in government activities. Its transfers governments' information, data and knowledge through integrated applications.

### **2.1.3 E-government system in Malaysia**

Former U.S. vice president (Al Gore) raised the idea of e-government, with the vision of linking citizens to various government agencies to get all the type of government services through automated and automatic way, to complete government tasks itself with the emerging technology networks, to decrease cost, to speed up the delivery process and increase effectiveness in the implementations (Almarabeh & Ali, 2010). In Malaysia, e-government was visualised by former Prime Minister Tun Dr. Mahathir Mohammed with conceptualized the national vision 2020 and further inspired the Multimedia Super Corridor (MSC) project (Zulhuda, 2012). The MSC projects was established in August 1996 guided by Vision 2020 to accelerate country into information age (Santhanamery & Ramayah, 2012a). Additionally, according to Malaysian Public Sector ICT Strategic Plan (2011-2015) which were launched on 7th July 2011, targeted to move government services to zero face-to-face service delivery, with 90 percentage of all government services accessible through online by 2015 and at the same targeting to have 90 percentage of usage of all transaction through online by year 2015 (MAMPU, 2011). As the increases in volume of internet users in Malaysia, it is reported that 67.0 percent of internet penetration as at end of year 2013 and its expected number of internet subscriber to reach the 25 million in the next three years (Internet World Statistics, 2013).



Along with the launches of MSC, Malaysia government have lined up seven specific flagship applications, which are E-government, Telemedicine or Telehealth, Multi-Purpose Card, R&D Cluster, Smart Schools, Technopreneur Development and World-wide Manufacturing Web and Borderless Marketing. Further, specifically under e-government flagship seven main projects are included; Generic Office Environment (GOE), Electronic Procurement (e-Perolehan), Project Monitoring System (PMS), Electronic Service Delivery (eServices), Electronic Labour Exchange (ELX), Human Resource Management Information System (HRMIS) and E-Syariah as a core of e-government application in Malaysia (Abidin & Kasimin, 2011; Ambali, 2009). Other than this main seven projects, several government sectors also takes initiatives to offer and implement e-services through their main websites for the public (Abidin & Kasimin, 2011). These services include Public Service Portal (myGovernment), E-Filing, E-Kehakiman, E-Tanah, Customs Information System (SMK), E-local Government (e-PBT), Pension Online Workflow Environment (POWER), E-Consent and the Training Information System (e-SILA) (Abidin & Kasimin, 2011 ; Abdullah et al., 2013). Malaysia Administrative Modernization and Management Planning Unit (MAMPU) is a central agency in Malaysia who responsible for execute and monitor e-government initiative (Alias et al., 2011).

According to a survey done by Malaysian Communication and Multimedia Malaysia (2012) on household use of the internet in year 2012 disclose that the foremost reason of internet usage by Malaysian is for the purpose to get information (88.3%) and for the social activities through social networking (84.4%). Other than that, the other popular purpose were for communication by text (66.4%), downloading files (62.3%), education (63.5%), reading (57.2%) and 54.6 percent for surfing purpose which its

define as use of internet without specific purpose in mind. But only 38.4 percentage users use internet for government service purpose in year 2011 (Malaysian Communication and Multimedia Malaysia, 2012) and 19.6 percentage in year 2009 (Malaysian Communication and Multimedia Malaysia, 2010). Even though there is increases in percentage of household use of the internet for e-government services purpose but this amount indicates as overall that usage by Malaysians for the purpose of e-government services very less than other purpose.

Ahmad et al. (2013) stated that the aim of e-government implementation is to increase efficiency, effectiveness and responsiveness of public sector through ICT to serve better their stakeholders. From review past studies identified that, e-government services offers number of potential benefits to users and service providers. For instance, faster, convenient, better, truly standard, impersonal, transparent government services to citizens and improvement in communication with business organization and industry, citizen empowerment and more efficient interaction among government and service recipient (Almahamid, 2009; Berdykhanova, Dehghantanha, & Hariraj, 2010; Hussein et al., 2011).

#### **2.1.4 E-government expenses**

Past few decades, government around the world continually have been doing large investment in term of hardware, software, training, maintenance, communication infrastructure to transform public services via e-government services (Bhatnagar, 2009; Reddick & Norris, 2013). IT spending worldwide reach approximately \$3.8 trillion in year 2013 (Gartner, 2013). As to move with wave of advancement of technology in the world, Malaysia also invested big amount of money for the

development and improvement of e-government services in the country. Under Eighth and Ninth Malaysia Plan, a total of RM7.885 billion and RM12.889 billion allocated for the ICT development in Malaysia and specifically RM 537.70 million (eighth Malaysian plan) to RM572.70 million (ninth Malaysian plan) allocated for e-government services development and predicted this to grow 10 percent annually (Abdullah et al., 2013; Norshita et al., 2010). Table 2.1 summarized the total allocation for ICT development projects in Malaysia over ten years under eighth and ninth Malaysia Plan.

Table 2.1  
*Malaysian government development expenditure and allocation for ICT related programs, 2001-2010*

Program	Eighth Malaysia Plan 2001-2005 RM Million	Ninth Malaysia Plan 2006-2010 RM Million
Computerisation of government Agencies	2125.0	5727.5
Bridging the digital divide	2433.1	3710.2
School	2145.1	3279.2
Communication infrastructure	245.0	150.0
Telecentres	18.1	101.0
ICT training/ services	15.9	180.0
ICT funding	1125.6	1493.0
MSC multimedia applications	1153.1	1100.5
E-government	537.7	572.7
Smart school	363.9	169.8
Tele-health	91.8	60.0
Government multipurpose Card	159.7	296.0
MSC development	320.8	377.0
ICT Research & Development	727.5	474.0
Total	7885.1	12888.9

Source: Abdullah et al. (2013)

Additionally, government also done much more investment in the form of providing High Speed Broadband Penetration (HSBP), Kampung Wi-Fi Programme, One Malaysia Netbook for the eligible students and citizens, free wireless network in

public places to accelerate usage of e-government services and to achieve vision 2020 (MAMPU, 2011).

According to Tan Sri Mohd Sidek Hassan (Chief Secretary to the Government Malaysia, 2011) whatever investment made by government in the world the key achievement of e-government is, users use the available technologies effectively and optimum (MAMPU, 2011). In addition, Aziz and Idris (2012a) stated that huge amount money invested in the process of upgrading the technology seems to be waste of effort as there are certain technology and not fully utilized by the government stakeholders. Thus, the underlying problem now is maximum utilization of existing e-government technologies which government had made huge investment on it.

All the above actions and initiatives indicate the government agencies initiatives towards citizens in the country. E-government readiness index used as an indicator to understand the current status of e-government development in specific developing country, by compare the country's own e-government readiness index among other country that are known to be leaders (Bhatnagar, 2009). According to the United Nation E-Government Survey (UNPAN) (2012) and United Nation E-Government Survey (UNPAN) 2014, e-government development index of Malaysia were improved from 0.6101 (2010), 0.6703 (2012) to 0.6115 (2014) but with dropped in ranking from 32nd (2010) to 40th (2012) and to 52nd (2014). Other than UNPAN 2012 survey, according to a annual worldwide monitoring and surveying of the development of E-Government study by Waseda University (2013), Malaysia were ranked at 24th place from a total of 55 countries. This placement ranking also have a

slight decline than previous year from 23rd place in 2012 to 24th place in 2013 despite the improvement in the total score.

According to Santhanamery and Ramayah (2013), all this rankings actually indicates technology development and initiatives taken by Malaysian government in providing e-government services that reach the citizens. All this inventiveness only reflects "supply-side" delivery of services by government (Gauld et al., 2010). "Supply-side" of delivery is the evaluation journey made government agency in the country for the development of e-government system (Lim, Tan, Cyr, Pan, & Xiao, 2011). However, according to UNPAN (2012) even all this initiatives reflects action taken by supply-side, the benefits of e-government services very much evaluated based on number of users (volume), type of users and frequency of usage of this services by users. E-participation index is another measure used to evaluate use of e-government services by particular country (Evans & Yen, 2006). Malaysia's e-participation ranking and index dropped from 12th (0.6571) year 2010 (UNPAN, 2010) to 14th (0.5000) in year 2012 (UNPAN, 2012) and 59th (0.5294) in year 2014 (UNPAN, 2014). Other than this, the latest research conducted by UNPAN (2012) revealed that in most countries have a low level usage of e-government services than traditional delivery services where this indicates that the usage level is far been limited from fast growing and availability provision of this services. Furthermore, according to Multimedia Development Corporation (2013), Malaysia has not been able to find back to the top ten position until year 2013 with ranked at 24th place (2013) which was in ninth position in first international e-government ranking in 2005. Therefore, this creates a question mark on how about the usage, to what extend citizen going or willing to use or continually to use the existing e-government services? This is because according to

Gauld et al. (2010) a country can be successful in technology development and delivery of e-government services, but a system is consider failure if the potential users do not use or continually utilize of that technology. Even various attempt have been done by government agency for their stakeholders, the number e-government users still at disappointing stage in Malaysia (Abidin & Kasimin, 2011).

Even there is increases in usage of e-government service and particularly in e-filing system in Malaysia, according to Bhattacharjee (2001), initial acceptance of an information system (IS) is essential first step to realize IS success but the eventual success highly depends on continued use rather than first time use. This would not necessarily contributes to the needed outcome unless a significant number of citizens move beyond the initial adoption and use the e-government services on continual basis (Teo et al., 2008; Wangpipatwong et al., 2009). More importantly, infrequent or ineffective usage of a technology after initial adoption caused undesirable cost and waste of effort on the development of particular online technology (Hong, Thong, & Tam, 2006). Moreover, as more citizens continuously use the e-government services as a result more operational and management cost could be reduced (Wangpipatwong et al., 2009). Thus, there is greater need to understand factors that influences continuance intention to use e-government services, in order to enhance or increase users' intention to continuously use and at the same time to maintain better e-government services for the citizens (Wangpipatwong et al., 2008).

Thus exploration of determinants of e-government continuance in generally and particularly in e-filing context is relevant and timely as there is increases in e-government usage, which encourages many researchers to explore this particular area

and to assist the practitioners to advance and improve government service quality, convenience, responsiveness and accessibility of the services to all citizens whether in area of urban and rural (Lean et al., 2009). More importantly, even there are abundances benefits with continued usage of e-government services, based on review of past studies, most of the existing studies focused more on initial adoption while less studies focused on continued use or post adoption environment (Belanche et al., 2014; Hoehle et al., 2012; Santhanamery & Ramayah, 2012b) especially in Malaysia. Jiang and Ji (2014) had highlighted that the level and degree of maturity different among different countries and different level of government within a country. Therefore, considering that the e-filing system is not a new technology and has been used by taxpayers, thus this research focus on continuance intention towards e-filing system in Malaysia which falls under category of government to citizen (G2C).

## **2.2 Continuance Intention**

Bhattacharjee (2001) defined continuance intention as "long term viability of an IS and its eventual success depends on its continued use rather than first-time use". Lee and Kwon (2011) stated that IS continuance intention describes about user's decision to continue to use a specific technology that users' have already been using it. In past decade the term of continuance also have been called as implementation and post adoption (Bhattacharjee, 2001). Even when an ICT is success in initial stage, users' will re-evaluate their decision and may decline the use ICT in future (Bhattacharjee, 2001; Hernandez-Ortega et al., 2014). Thus, there is greater needs to research the continuance (continued use) intention of the IS towards a particular products or services (Hossain & Quaddus, 2012) at deeper level and to predicts users' future performance and to know viable of an ICT (Hernandez-Ortega et al., 2014).

Currently, research in technology adoption started receiving and growing interest about the importance of individual use of a technology after initial adoption (Guinea & Markus, 2009) which is more to concept of continuance intention. As the initial adoption is an essential foremost step towards realize an information system success but its eventual success depends on continued use rather than first time use (Bhattacharjee, 2001). More importantly, infrequent or ineffective usage of a technology after initial adoption caused undesirable cost and waste of effort on the development of particular online technology (Hong, Thong, & Tam, 2006). While, with the continuance usage of online technologies contribute to more profit earning, growth and expands and helps to survive in the existing marketplace (Bhattacharjee, 2001; Chong, 2013; Hong et al., 2006; Shiau & Chau, 2012). Moreover, Hossain and Quaddus (2012) stated that the digital society cannot thrive if the online service users' do not use a technology on the continued basis. Thus, online service users have to move from initial adoption stage to use it at continual basis.

Based on review of past studies, most of the prior researches focused more on initial adoption while less studies focused on continued use or post adoption environment (Belanche et al., 2014; Hoehle et al., 2012; Santhanamery & Ramayah, 2012b) which is about what happens beyond the initial adoption stage (Limayem et al., 2007). In recognizing this gap in prior literatures, recent studies started to explore the concept of continuance intention in various technologies context. As the focus of the present study is on individual's continuance intention of a technology, which assumes that IS continuance behaviour is user's decision to go beyond initial technology trial to engage with that technology (Belanche et al., 2014) for long term. Continuance at individual level have been considered as very important for long term sustainable of



web-based services (Lee & Kwon, 2011) and central to the survival for the electronic service providers (Bhattacharjee, 2001). Other than that, substantial body of past researches also reported that user continuance usage of a technology is important for the success of particular technology (Bhattacharjee, 2001; Hong, Kim, & Lee, 2008).

Additionally, to the online retailers; internet service providers, online banking, online travel agencies and the like, maintaining existing users, revenue and success of this e-services depends both on initial number of adopters (new subscription) and number of continued users (subscription renewals) (Bhattacharjee, 2001). Continuance be considered because of the important fact that "acquiring new customer may cost as much as five times more than retain existing ones, given that the costs of searching for new customers, setting up new accounts and initiating new customers to the IS" (Bhattacharjee, 2001). In addition, retaining existing users through continued usage is less expensive than acquiring new ones (Bhattacharjee, Perols, & Sanford, 2008).

Therefore, technology based researchers, started to investigate what are the determinants that influences and can influence continuance intention (Chang, 2013) in various context of technologies. For instance, Bhattacharjee's (2001) ECM model seeks to identify the antecedents and to explain user's intention to continue using an IS and explored in context of online banking. The study revealed that user's continuance intention is determined by user's satisfaction and perceived usefulness while satisfaction is influenced by perceived usefulness and confirmation. Satisfaction is determined as stronger predictor users' IS continuance intention with prior IS use (Bhattacharjee, 2001). This association evidenced by several past studies. Lee (2010) integrated TAM, ECM, flow theory and TPB to predict intention to continue using e-

learning system and found that satisfaction is the stronger factor that effect continuance intention of e-learning system. Apart from satisfaction, the other variable have direct effect on continuance intention are perceived usefulness, concentration, attitude, perceived behaviour control and subjective norm (Lee, 2010). Islam (2012) also found that continuance intention towards e-learning were influenced by satisfaction and perceived usefulness. But, perceived usefulness have stronger effect on continuance intention than satisfaction.

Similarly, Chang (2013) disclosed that satisfaction as one of the important critical factor that influences continuance intention of e-learning system in academic libraries. This finding supported by Chen, Chen and Chen (2009) whose study found that continuance intention of self-service technologies influence by satisfaction. In addition, Ho (2010) also identified that continuance intention is affected by users' satisfaction and attitude in e-learning platform. Moreover, Hoehle et al. (2012) revealed that satisfaction as one of important driver of user continuance intention in internet banking. Roca, Chiu and Martinez (2006) used sample of e-learning users', and found that most significant antecedents of continuance intention is satisfaction, which in turn is determined by confirmation, perceived usefulness, service quality, information quality, cognitive absorption, system quality and perceived ease of use. Almahamid and Rub (2011) also undertakes a study on continuance intention towards e-learning system in Jordan and have found that perceived usefulness, system quality, information quality, service quality, internet-self efficacy, user satisfaction and intrinsic determined continuance intention.

Apart from satisfaction variable, other factors also influences intention to continuously use of online services. For example, Chen, Yen and Hwang (2012) found that social factors (subjective norm, critical mass and image) have direct effect on continuance intention in usage of web 2.0 technology. While, Al-Maghrabi and Dennis (2011) integrated ECT and TAM model and found that perceived usefulness, social pressure and enjoyment as main factors that have direct effect on continuance intention in e-shopping context in Saudi Arabia. Lin, Fan and Chau (2014) found sense of belonging and user satisfaction influenced continuance intention in social networking site context. Apart from this variables, Lee and Kwon (2011) found that affective factors such as intimacy and familiarity have direct effect on continuance intention of web based technologies. Other than that, Ramayah, Ahmad and Lo (2010) identified that service quality, system quality and information quality as important predictor of intention to continue usage of e-learning system. Likewise, Hsu, Chang, Chu and Lee (2014) in online group-buying website context found that perceived quality of the website have positive influence on repurchase intention in Taiwan. Besides, Shiau, Huang and Shih (2011) identified that blog continuance intention influenced by perceived usefulness, satisfaction and additionally by flow. This finding supported by Zhou (2013a) whose study found satisfaction, flow and trust predict continuance intention of mobile payment service.

A latest research conducted in mobile commerce continuance revealed trust is the most stronger and important predictor of continuance intention. More interestingly, in this study apart from trust, other variables; perceived usefulness, perceived cost, perceived ease of use and perceived enjoyment have significant influence on continuance intention (Chong, 2013). This finding supported by Hernandez-Ortega

(2011) whose study found that continuance intention e-invoice service in Spain is influenced by trust. In addition a study by Kassim and Abdullah (2010) found that customer satisfaction and word of mouth factors have significant impact on repurchase intention among Malaysian and Qatari e-commerce customers. Akter et al. (2012) also found that perceived service quality and perceived trust as significant and direct predictor of IS continuance intention in mobile health services. Choi, Park and Park (2011) identified that perceived usefulness and satisfaction has positive significant direct effect on continual usage intention mobile information services among Korean tourist. Choi, Park and Park (2011) also find that perceived risk, perceived ease of use and social effect has indirect effect on Korean tourists' continual reuse of mobile information service.

Similar to private sector, research on e-government also started new phase with realizing the importance of continuance intention and move beyond initial adoption to evaluate continuance intention by the citizens (Santhanamery & Ramayah, 2013). This is because "government initiatives to implement ICT will not alter the state of digital inequalities unless there is continue use" (Hsieh, Rai, & Keil, 2008). Teo et al. (2008) stated that more importantly, the challenging job of government agencies which providing online public services is to retain and keeping citizens engage to continued use the existing e-government services. While initial adoption of e-government services is an essential indicator of e-government success and this does not necessarily contribute to the desired outcome unless a significant number of citizens move beyond the initial adoption and use the e-government on continual basis (Teo et al., 2008; Wangpipatwong et al., 2009). As more citizens use the e-government services, more operational and management cost could be reduced

(Wangpipatwong et al., 2009). However, users may discontinue after the adoption of an online service if the system does not meet up users' needs despite of its successful prior adoption (Wangpipatwong et al., 2008). Therefore, there is greater need to understand factors that influence continuance intention to use e-government services in order to increase users' continuance intention and at the same time to maintain better e-government websites for the citizens (Wangpipatwong et al., 2008).

Prior studies have revealed numerous factors that influences directly and indirectly towards continuance intention in e-government researches. For instance, Jiang (2011) identified the factors that influences user's continuance intention of e-government portal in China. The results of study revealed that continuance intention influenced by user satisfaction and perceived usefulness. Similarly, Jiang and Ji (2014) examined users' adoption and continuance intention of e-government portal in China from the perspective of service level and service quality to three type users groups (information acquisition, information exchange and transaction processing). The study also found that users' satisfaction among all three group user influence continuance intention. While, perceived usefulness have significantly enhance continuance intention among information exchange and transactional processing group of users and have insignificant effect among information acquisition group of users. Subsequently, Wangpipatwong et al. (2008) also found that perceived ease of use, perceived usefulness and computer self-efficacy enhanced citizens' continuance intention to use e-government website. Additionally, Ambali (2009) disclosed that perceived usefulness, perceived security, facilitating conditions and perceived ease of use influences user retention or continuance intention in e-filing system.

Furthermore, Wangpipatwong et al. (2009) examined web site quality factors towards enhance the continued use of e-government website by e-citizen in Thailand and found that information quality, system quality and service quality enhanced continued use of e-government website. On top of it, the above study found that system quality yielded greatest enhancement on e-government website continued use. In addition, Teo et al. (2008) used DeLone and McLean IS success model as the baseline theory to examine role of trust towards e-government success in Singapore. The study revealed that trust in government significantly influenced trust in e-government website and trust in e-government website significantly related to perceived website quality which covers information quality, system quality and the service quality. Interestingly, the study by Teo et al. (2008) also found that only information quality influenced continued intention but system and service quality have insignificant effect on continued intention. Besides that, Almahamid (2009) also found that perceived information quality and internet self-efficacy have significant relationship towards continuance intention and surprisingly perceived usefulness and perceived ease of use have no significant relationship on continuance intention.

Furthermore, Hsu and Chiu (2004) adapted Decomposed theory of planned behaviour to determine factors influences intention to continue using web-based tax filing service in Taiwan and found that continuance intention is determined by satisfaction and internet self-efficacy. In turn, satisfaction were influenced by perceived playfulness, interpersonal influence and perceived usefulness. While, Thominathan and Ramayah (2014) examined the usage of e-filing system among taxpayers in Malaysia based on ECM and found that perceived usefulness and satisfaction are significant predictor of continuance usage intention. The study by Thominathan and

Ramayah (2014) revealed an interesting finding that perceived usefulness as stronger predictor of continuance usage intention compare to satisfaction. Furthermore, Hu et al. (2009) discovered that determinants of continuance intention and service quality of online service (e-tax service) in Hong Kong via longitudinal online survey. The results of Hu et al. (2009) study revealed that service characteristics of e-tax; security and convenience and technology characteristics; perceived usefulness as primary drivers of service quality. While, the study by Hu et al. (2009) also revealed an interesting result, service quality as strongest predictor of continuance intention than perceived usefulness. Besides that, Belanche et al. (2014) undertakes a research on citizens' continued usage of e-government services by focusing on different type of trust elements and found that trust in public e-service, perceived usefulness and satisfaction have significant influence on continuance intention in e-service tax return.

As overall, findings of above studies revealed that various factors or different sets of antecedents that influences users' continuance intention depending on unique characteristics of system or particular technologies context. Hu et al. (2009) stated that the real benefits of e-government service can only be realised when citizen adopt and use this services continuously. Thus, it is important to understand and identify factors that contributes to continued use intention of these e-government services to ensure success of this services (Hu et al., 2009).

Other than that, although from review of above past studies have provided knowledge and insight about the importance of continuance intention in various contexts of technologies, very few researches considered or focused on continuance intention of using e-government service specifically in tax e-filing system in Malaysia. In addition,

investigation on continuance intention towards e-filing system by taxpayers deemed to be important and crucial as more operational and management cost could be reduced with the more usage (Thominathan & Ramayah, 2014) and for e-government eventual success. Consequently, as recognizing the gap in literatures and with regard to maintaining users' continuance intention of tax e-filing system this study attempt to filled this gap by embarking empirically to investigate factors that influences in term of perceived usefulness, trust, perceived system quality, perceived information quality, confirmation and satisfaction on the continuance intention towards e-filing system in Malaysia.

### **2.3 Perceived Usefulness**

Perceived usefulness is defined as the degree to which user of an ICT belief that using a particular system will improve their job performance (Davis, 1989). The earlier studies has found that perceived usefulness as major determinants of behavioural intention to use an IS including in e-government adoption (Abu-Shanab, 2014; Almahamid et al., 2010; Belanche et al., 2012; Carter, 2008; Hussein et al., 2011; Shajari & Ismail, 2014; Zhang et al., 2011) and particularly in e-filing adoption (Annuar & Othman, 2010; Fu et al., 2006; Hussein et al., 2011). As the citizens tend to evaluate an e-government services based on usefulness of the system itself to the users (Hussein et al., 2011). Importantly, Carter (2008) found that perceived usefulness is one of the most significant and key predictor of intention to use e-government services.

As in initial adoption, perceived usefulness also getting consideration in IS continuance past literatures. In information system continuance literature, perceived



usefulness were introduced as an important variable in Expectation Confirmation Model (ECM) by Bhattacharjee (2001) which the model is developed based on Expectation confirmation Theory (Oliver, 1980) and TAM (Davis, 1989). Bhattacharjee (2001) examined continuance intention among 122 online banking users and found that perceived usefulness have positive significant direct and indirect influence via satisfaction on continuance intention. The above author found that the direct effect have high impact ( $\beta=0.29$ ) than indirect effect ( $\beta=0.13$ ) on continuance intention. Besides that, other prior studies also found that perceived usefulness have significant positive influence on continuance intention (Akter et al., 2012; Al-Maghrabi & Dennis, 2011; Ambali, 2009; Belanche et al., 2014; Chong, 2013; Hoehle et al., 2012; Hu et al., 2009; Jiang, 2011; Lee, 2010; Li & Liu, 2014; Limayem & Cheung, 2011; Thominathan & Ramayah, 2014; Wangpipatwong et al., 2008; Zhou, 2011).

From review of previous literatures, it was found that perceived usefulness was researched in various context of technologies such as; internet banking (Hoehle et al., 2012), online shopping (Al-Maghrabi & Dennis, 2011), online travel services (Li & Liu, 2014), blog (Shiau & Chau, 2012), e-learning (Lee, 2010; Limayem & Cheung, 2011), mobile commerce (Chong, 2013; Zhou, 2011) and mobile health service (Akter et al., 2012). For example, Al-Maghrabi and Dennis (2011) explored perceived usefulness, social pressure and perceived enjoyment influences on continuance intention of online shopping in Saudi Arabia and found that perceived usefulness positively related and important factors of online continuance intention. Li and Liu (2014) found that perceived usefulness positively affects continuance intention of online travel services in China. Moreover, Chong (2013) stated that perceived

usefulness have significant positive influences on continuance intention but the impact is very less than other variables based on mobile commerce continuance intention among undergraduate and graduates students in China. While, Zhou (2011) identified that the effect of perceived usefulness is higher or stronger than satisfaction in the context of mobile commerce in China. Besides that, Lee (2010) and Limayem and Cheung (2011) also identified that perceived usefulness have significant positive influence on continuance intention of e-learning system. Consequently another study in e-learning platform continuance intention which integrated TAM, ECM, cognitive model (COGM) and self-determination model (SDM) also come out with the result that perceived usefulness positively affects continuance intention and perceived usefulness is an important major variable in determining continuance intention (Ho, 2010).

Likewise, prior literature also indicated that perceived usefulness is one of an important or key determinants of continuance intention towards an e-government services (Jiang, 2011; Wangpipatwong et al., 2008) and e-filing system (Ambali, 2009; Belanche et al., 2014; Thominathan & Ramayah, 2014). For instance, Wangpipatwong et al. (2008) included perceived usefulness as one of determinants to predict continuance intention of e-government website in Thailand and found that perceived usefulness positively influence continuance intention. Besides that, Jiang (2011) also found that perceived usefulness have positive influence and one of main antecedent of user continuance intention of e-government portal in China. Additionally, a study by Ambali (2009) also identified that perceived usefulness is the most strongest significant determinants than perceived ease of use, perceived security and facilitating condition towards users' retention of e-filing system. While, Hu et al.

(2009) found that perceived usefulness have significant positive influence on continuance intention but perceived usefulness not the key or strongest predictor of continuance intention in e-tax context in Hong Kong but a study by Thominathan & Ramayah (2014) found that perceived usefulness have direct positive relationship towards continuance intention and perceived usefulness as strongest predictor of continuance usage intention than other variables on in e-filing system in Malaysia.

However, even perceived usefulness considered as one of important and significant positive determinant of continuance intention in most of the previous researches, but at the same time some prior researchers also have found that statistically insignificant influence of perceived usefulness on continuance intention (Almahamid, 2009; Hung, Yang, & Hsieh, 2012; Jiang & Ji, 2014; Shiau & Chau, 2012; Susanto, Chang, Zo & Park, 2012). For instance, Almahamid (2009) examined determinants of continuance intention to use e-government services in Jordan and unexpectedly found out that perceived usefulness did not impact e-government service continuance intention to use. Jiang and Ji (2014) examined user adoption and continuance intention of e-government portal among 630 users in China and concluded that perceived usefulness play significant effect and positively related among information exchange and transaction processing user group and played non-significant effect among information acquisition user group respectively on user's continuance intention. Not only in e-government services, in other online technologies context also have found contradict results; for instance Shiau and Chau (2012) revealed that perceived usefulness have insignificant effect on continuance intention, but have indirect effect through satisfaction in the context of continuance intention of blog among Taiwan blog users. A study by Hung et al. (2012) on continuance intention toward mobile

shopping among 244 college students in Taiwan have revealed that the relationship between perceived usefulness and continuance intention was insignificant towards mobile shopping continuance intention. Furthermore, perceived usefulness have no statistically significant affect on continuance intention in smart phone banking service (Susanto et al., 2012). Table 2.2 shows summary of previous studies on relationship between perceived usefulness and continuance intention.

Thus, as overall above findings indicates that, users of the e-government services tend to evaluate a technology based on usefulness of the service or technology itself to the users (Hussein et al., 2011), less complicated and the technology itself should enhance the work of users of the system in term of time, cost than traditional or manual service (Ambali, 2009). Thus, perception of usefulness of an e-government service will enhance users' level of continuance intention on e-government (Wangpipatwong et al., 2008) which provides benefits and advantages to the users (Hussein et al., 2011). Otherwise, the users of e-government will neglect the technology in future if the technology itself don't have any enhancement or difference than traditional manual system (Ambali, 2009).

As in this context of this study, e-filing provides a mechanism to accomplish an important task which is filing tax electronically (Hu et al., 2009). As the dominant and important influence of perceived usefulness, has led Bhattacharjee (2001) included perceived usefulness in the revised model Expectation Confirmation Model (ECM) (Al-Maghrabi, Dennis, & Halliday, 2011) in the post adoption stage (continuance intention). Thus, considering dominance role of perceived usefulness in prior literatures as an important driver of continuance intention in various e-technologies

context, perceived usefulness is considered in this research and expects that this variable will play important role on continuance intention in the context of e-filing system in Malaysia. Furthermore, due to inconsistency nature of the above findings of perceived usefulness on continuance intention and the problem of generalize the results, perceived usefulness is considered in this study and expect that this variable will play important role on continuance intention in the context of tax e-filing system in Malaysia.

Table 2.2

*Summary of previous studies on relationship between perceived usefulness and continuance intention*

Author & Year	Area	Country	Respondents
(Bhattacharjee, 2001)	Online banking	United States	122 online banking users
(Belanche et al., 2014)	E-service: tax return	Spain	336 taxpayers
(Ambali, 2009)	E-filing	Malaysia	300 Taxpayers
(Hu et al., 2009)	E-tax	Hong Kong	518 internet users
(Limayem & Cheung, 2011)	E-learning	Hong Kong	505 students
(Shiau et al., 2011)	Blog	Taiwan	361 blog users

Subsequently, in previous continuance literatures also researchers includes perceived usefulness to predict satisfaction of the users in their model (Akter et al., 2012; Belanche et al., 2014; Chong, 2013; Hernandez-Ortega et al., 2014; Hoehle et al., 2012; Jiang & Ji, 2014; Jiang, 2011; Lee, 2010; Li & Liu, 2014; Limayem & Cheung, 2011; Shiau & Chau, 2012; Zhou, 2011).

The results by Bhattacharjee (2001) verified that perceived usefulness have significant positive effect on users' satisfaction in the ECM model. Furthermore, Jiang and Ji (2014) conducted a study on e-government portal adoption based on service level and

service quality in China among 630 citizens which were categorise into three types of users of service; information acquisition user group, information exchange user group and transaction user group and found that perceived usefulness significantly and positively influence users' satisfaction of the three group of users' respectively. Belanche et al. (2014) stated that perceived usefulness has significant positive influence on satisfaction in e-service of tax return in Spain context. While in e-learning context, Roca et al. (2006) integrated TAM and expectation disconfirmation theory (EDT) and proposed Decomposed Technology Acceptance Model (DTAM) and found that perceived usefulness positively related and has the most strongest influence on satisfaction. Subsequently, Ho (2010) integrated TAM, ECM, cognitive model (COGM) and self-determination model (SDM) also found out that perceived usefulness is a main antecedents of satisfaction. In addition a study by Li and Liu (2014) in online travel service context and a study by Lee (2010) in e-learning context also found that perceived usefulness positively influence satisfaction respectively. Summary of previous studies on the relationship between perceived usefulness and satisfaction depicted in Table 2.3. Thus, overall the above results indicates that perceived usefulness seems to be important predictor of user satisfaction and this also implied that the extant of users' perspective or belief of usefulness of a system will affect their satisfaction with using the system (Roca et al., 2006). Therefore, in this context of research the usefulness perception of e-filing system in comparison to manual tax filing expect will influence taxpayers' continuance intention towards e-filing system in Malaysia.

Table 2.3

*Summary of previous studies on relationship between perceived usefulness and satisfaction*

Author & Year	Area	Country	Respondents
(Jiang & Ji, 2014)	E-government portal	China	630 individual citizen
(Belanche et al., 2014)	E-service: tax return	Spain	336 citizens
(Li & Liu, 2014)	Online travel service	China	543customers
(Lee, 2010)	E-learning	Taiwan	363 learners

## 2.4 Confirmation

Confirmation is a cognitive belief (the extent to which users' expectation of IS use is realized during actual use) derived from prior IS use (Bhattacharjee, 2001). Expectation provides the baseline level, against which confirmation is assessed by users to determine their evaluative response or satisfaction (Bhattacharjee, 2001). Bhattacharjee (2001) in understanding information system continuance revealed that user's satisfaction is influenced by confirmation of expectations from prior usage and perceived usefulness and perceived usefulness is influenced by users confirmation level. Prior researchers (Chen, Huang, Huang, & Sung, 2009; Ho, 2010; Hoehle et al., 2012; Islam, 2012; Lee, 2010; Li & Liu, 2014; Shiau & Chau, 2012; Shiau et al., 2011; Thominathan & Ramayah, 2014; Zhou, 2011) found that the association between confirmation and satisfaction significant and positive. For instance, Expectation Confirmation Model (ECM) posits that a user satisfaction of an IS determined by the extent of which user's confirmation of the expectation level.

Besides that, Lim, Kim and Lee (2013) conducted a study by adopted ECM in the context e-government service and found that confirmation have significant positive effect on satisfaction. Similarly, Thominathan and Ramayah (2014) found that confirmation positively related to satisfaction in e-filing system context. Lee (2010)

also found that confirmation have significant positive influence on satisfaction in e-learning context. Users' confirmation of expectation indicates that users gain expected benefits from their usage experience of particular technology and thus leads to a positive effect on users' satisfaction with it (Thong et al., 2006).

Subsequently, in previous literatures (Chen, et al., 2009; Hoehle et al., 2012; Islam, 2012; Li & Liu, 2014; Limayem et al., 2011; Shiau et al., 2011; Thominathan & Ramayah, 2014; Zhou, 2011) also found that confirmation to predict perceived usefulness and the outcome was positive in various context of online technologies. For instance, Hoehle et al., (2012) found that confirmation positively affects perceived usefulness in determining user's intention to continue using internet banking among 210 internet banking users in New Zealand. While, Li and Liu (2014) also found that confirmation of user expectation positively effects perceived usefulness of e-service.

As overall, from findings of above past studies it can be summarised that user's confirmation has a significant positive influence on satisfaction and on perceived usefulness towards continuance intention. Thus, considering Bhattacharjee (2001)'s ECM, this research utilize confirmation as one of factor and assumed that confirmation will have significant positive influence on satisfaction and on perceived usefulness towards e-filing system in Malaysia context. Moreover, lack of empirical studies that that examined the relationship between confirmation and perceived usefulness especially in e-filing system context in Malaysia. Hence, this study attempted to investigate the relationship between confirmation and satisfaction; and confirmation and perceived usefulness towards e-filing system in Malaysia.



## 2.5 Trust

Trust have been studied in diverse research domain such as social psychology, psychology, economics and marketing (Papadopoulou, Nikolaidou, & Martakos, 2010). Trust is also one of fundamental element in online services for enhance long term relationship and success of e-government website (Teo et al., 2008). The importance of trust variable have been confirmed in various online services such as e-banking (Hoehle et al., 2012) and e-government (Belanche et al., 2014; Teo et al., 2008) as the interaction between trustor and trustee happen in virtual form not with face-to-face interaction. Moreover, trust is consider critical as involvement of risk and uncertainty in online environment (Belanche et al., 2012, 2014; Belanger & Carter, 2008) and privacy and security of users are at risk as the exchanges of personal and sensitive information through internet to the service provider (Venkatesh et al., 2011). For example, monetary risk (online tax payment) and risk of loss of personal and sensitive data (e-filing and health information) in e-government transaction (Papadopoulou et al., 2010). As the crucial role of trust in online services, recently trust getting its consideration in e-government researches.

Trust was explored and defined variously in previous literatures (Belanger & Carter, 2008). Mayer, Davis and Schoorman (1995) defined trust as "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party". Next, Pavlou and Fygenson (2006) defined trust as a belief that trustee will act cooperatively with trustor to fulfil the trustor's expectation without exploiting its vulnerabilities. Thus, there is involvement of relationship between two important entities which are trustor (the entity that trust)

and trustee (the entity to be trust) (Papadopoulou et al., 2010). Elucidating further, in previous researches trust viewed from three dimensions; ability, benevolence and integrity (Mayer et al., 1995). Ability is a belief that trustee have necessary knowledge and skills to fulfil trustor expectation. Benevolence is the belief that trustee will consider interest of trustor. Integrity is the belief that trustor keep their promise and honest (Mayer et al., 1995).

Previous studies found that trust have been crucial in the adoption intention of online services such as e-government (Belanche et al., 2012; Belanger & Carter, 2008; Shajari & Ismail, 2014) and particularly in e-filing system (Chen et al., 2015; Hussein et al., 2011). For instance, Hussein et al. (2011) examined factors that influence intention to use e-filing system in Malaysia and found that trust of the internet and trust of the government were have influences towards intention to use. More importantly, Belanche et al. (2014) highlighted that trust is important for the new and advanced users of an technology. Even trust is considered widely in technology adoption of an new technology but trust more crucial to be research in post adoption as trust develops gradually with technology transformation and changes over time (Venkatesh et al., 2011). This is because in adoption, trust is developed based on expectation while in continuance intention trust is developed based on users' ongoing experience with the technology itself (Belanche et al., 2014).

Subsequently prior researchers have acknowledged the relationship between trust and continuance intention (Belanche et al., 2014; Chong, 2013; Hernandez-Ortega, 2011; Hoehle et al., 2012; Teo et al., 2008). These studies established significant positive relationships between trust and continuance intention even though studies were from

different context and varying population as sample size. For example, Belanche et al. (2014) carried out a study on continuance intention of e-service tax return in Spain with looked at three type trusts; trust in public administration, trust in the public e-services and trust in the internet towards continuance intention. The result of above study revealed that trust in public e-service have significant positive and is one of the most important factor that influence users continuance intention towards the e-service tax return. Furthermore, Teo et al. (2008) conducted a study in e-government website setting among 214 Singapore university students, the results revealed that trust in e-government website have significant positive influence on intention to continue using e-government website.

Aside from these prior studies, there were past researches that have explored the relationship between trust and continuance intention towards using various type of online services. For instance, Hoehle et al. (2012) based internet banking continuance intention in New Zealand among 210 consumer found that continuous trust have statistically significant positive effect on continuance intention. Equivalently, not only in individual level but in the organizational level also trust were identified to have significant positive effect on continuity intention in the setting of e-invoicing in Spain (Hernandez-Ortega, 2011). In addition Chong (2013) conducted a study to examine mobile commerce continuance intention among Chinese consumers in China and found that trust have strongest and positive significant influences on m-commerce continuance intention. As overall, from above studies analysis of trust in different setting of online service indicates that trust as one of the key component of continuance intention.

However, contradict from above studies, Venkatesh et al. (2011) conducted a study on two type of e-government technologies (e-government website and smart identity card) in Hong Kong by integrated trust and UTAUT constructs in two-stage expectation confirmation theory. This above study found that trust has insignificant influence towards continuance intention and trust has indirect influence on continuance through post-usage attitude. While, Kassim and Abdullah (2010) conducted a study on customer loyalty among Malaysia and Qatar users of e-commerce and found that trust have insignificant effect on customer retention as that hypothesis were rejected. In addition, Susanto, et al., (2012) also found that trust have statistically no significant influence on continuance intention in smart phone banking service.

Thus, on overall from review of above literatures as the findings from above researchers inconsistent and cannot be generalized in all background, as difference could occur on the different context of the research (Venkatesh et al., 2011), such as difference between government procedure and infrastructure in the country. Furthermore, as less research is considered role trust on continuance intention empirically in e-government (Belanche et al., 2014) and particularly in e-filing system and then as a strong call for further research role trust in e-government context (Teo et al., 2008), therefore role of trust considered in this study. Other than that, as noted earlier the issue of increases of various type of online vulnerabilities in Malaysia and as e-filing involves transmission of personal and sensitive information between taxpayers and government and trust also has been main challenges in e-filing implementation in Malaysia (Ambali, 2009; Hussein et al., 2011). More importantly, Belanche et al. (2014) stated that the increases of online vulnerabilities will lead

citizen to reconsider back their willingness to share important private information through e-services. Therefore, in this research trust will be explored in continuance intention towards e-filing system in Malaysia.

Extant of past researches also confirmed trust have been an key predictor of user satisfaction (Akter et al., 2012; Hoehle et al., 2012; Hsu, et al., 2014; Kassim, Jailani, Hairuddin, & Zamzuri, 2012; Teo et al., 2008). However, very few studies considered the relationship between trust and satisfaction (Teo et al., 2008) in e-government and particularly in e-filing context. For example, the study conducted in the e-government website context in Singapore found that the relationship among trust in e-government website and satisfaction is significant and positive (Teo et al., 2008). While, Hsu et al., (2014) examined two type of trust; trust in website and trust in sellers on satisfaction with website and satisfaction with sellers in the setting of online group buying website and results revealed that both trust have significant positive influence on satisfaction. Furthermore, Hoehle et al. (2012) conducted a study in internet banking continuance intention in New Zealand among 210 consumers and the results shows that trust positively affect satisfaction but the effect less strong than the direct relationship trust on ongoing intention to use internet banking. In addition, Kassim et al. (2012) also found that trust significantly related towards satisfaction in student information system context. Akter et al. (2012) identified that perceived trust have significant and positively associated with satisfaction in the mobile health services in Bangladesh. As overall, results of this studies indicates that the level of individual trust might influence the satisfaction level of an user towards an e-service.

## **2.6 Perceived System Quality**

Perceived system quality is defined as an evaluation of performance of the a system features based on users' own experience of using the system (as cited in (Zheng, Zhao, & Stylianou, 2013). While, as cited in Teo et al. (2008) defined perceived system quality as users' perception about the technical performance of the website in the form information retrieval and delivery. Additionally, Chen (2010) defined system quality as an evaluation regarding information processing by the system itself.

Prior researchers found that system quality in initial intention to use and consequent on satisfaction in e-government context (Almahamid et al., 2010; DeLone & McLean, 1992, 2003; Ilias & Razak, 2009; Khayun & Ractham, 2011; Rehman et al., 2012; Wang & Liao, 2008; Yahya, Nadzar, & Abdul, 2012). For example, Yahya et al. (2012) found that system quality have significant positive influence on intention to use e-Syariah portal in Malaysia. According to DeLone and McLean (2003) system quality is one of key factor that influence satisfaction and intention to use. The higher the quality of the system will contribute to more use, more satisfaction and positive net benefits, conversely if the system have poor quality will cause to user dissatisfaction and negative net benefits (DeLone & McLean, 2003). Other than that, if the system does not meet users need, further use will be avoided by user of the system (as cited in (Wangpipatwong et al., 2009).

As overall, from review of previous studies, system quality were used as a determinants on initial intention to use an information system but very lack of studies used this determinant to examine the continued use generally in e-government context (Wangpipatwong et al., 2009) and specifically in the e-filing system. The influence of

system quality on continuance intention has received little attention from previous researchers (Islam, 2012; Ramayah, Ahmad, & Lo, 2010; Teo et al., 2008; Wangpipatwong et al., 2009; Zhou, 2013b) in variety of technological context such as e-government website, e-learning and other online services. For example, Wangpipatwong et al. (2009) have been conducted a study with using DeLone and McLean IS Success model as underpinning model to examine the web site quality which contain system quality, information quality and service quality on continued use of e-government web site by 614 e-citizens in Thailand. The results of the above study revealed that system quality enhance continued use of e-government website than service quality and information quality. Wangpipatwong et al. (2009) also highlighted that higher the quality of e-government website the higher the citizens' intention to continued use of e-government websites.

Besides that, Ramayah et al. (2010) also employed DeLone and McLean IS Success model and revealed that system quality significantly and positively related to intention to continue usage of e-learning among 1616 undergraduates and postgraduates students in Malaysia. Recently, Saha et al. (2012) carried out a study to find out essential system quality criteria in the context of online tax filing in Swedish. Result of the study revealed that navigation facility and accessibly is the important criteria that determine citizens' perceived system quality of the system.

Contrariwise, (Islam, 2012; Teo et al., 2008; Zhou, 2013b) found that insignificant relationship between system quality and continuance intention were existed in e-government website and other technological settings as the hypothesis were not supported. For instance, Teo et al. (2008) conducted a study on intention to continue

using e-government website among 214 Singapore university students by incorporated DeLone and McLean IS success model and online trust literature and found that system quality perception have statistically no significant influence on intention to continue using e-government website. While, Islam (2012) also identified that perceived system quality have no significant effect on e-learning continuance intention among university educators in Finland. Other than that, Zhou (2013b) found that system quality has statistically insignificant influence on continuance usage of mobile site among China users. However, in this above studies system quality have indirect influence on continuance intention. In summary, the results of above studies indicates that perception of quality of an online service (e-government website) whether this will fulfil expectation on completion of certain task will influence user's decision to continue use that online service (e-government) again (Teo et al., 2008) in future.

Moreover, the extant past research found that the degree of direct association of perceived system quality with satisfaction in e-filing (Chen, 2010; Chumsombat, 2014), e-government (Teo et al., 2008), e-learning (Chang, 2013; Islam, 2012; Roca et al., 2006) and other online services. For example, Chen (2010) conducted a study on impact of quality antecedents on taxpayers satisfaction in the online tax filing context in Taiwan and found that system quality which was measured with access, interactivity and ease of use (three sub-dimensions) positively associated with taxpayers satisfaction and one of the most important factor that determine satisfaction on using e-filing system in Taiwan. The author also stated that information quality and system quality have the most strongest influence on satisfaction than service quality. In addition, Chumsombat (2014) found that system quality (functionality and



usefulness) have significant influence on satisfaction in the context of e-tax filing among 415 corporate taxpayers in Thailand. Also, Teo et al. (2008) found that system quality perception have significant positive influence on satisfaction in the context of e-government website especially for active users group users who were used e-government website for interaction and transaction purpose with government. But contrarily, a recent research conducted by Chen et al. (2015) found that the relationship between system quality and satisfaction were not supported which revealed that system quality does not affect satisfaction in the context online tax filing system in Philippines.

Aside from e-government and e-filing context, there were also previous studies that have discussed the relationship between perceived system quality and satisfaction in other e-services settings. For example, Roca et al. (2006) conducted a study in e-learning continuance intention by integrated TAM and expectation disconfirmation theory (EDT) and proposed Decomposed Technology Acceptance Model (DTAM) revealed that perceived system quality plays essential significant positive roles in predicting satisfaction. The users of the system will form perception of perceived quality (system quality, service quality and information quality) about the used system after initial period of utilization and this perception will form or influence satisfaction or dissatisfaction level of users of a system (Roca et al., 2006). Furthermore, Chang (2013) found that system quality have significant positive relationship on satisfaction of e-learning system in Taiwan. Also, Islam (2011) found that perceived system quality as a object based beliefs is the most important determinants of satisfaction than perceived usefulness a behavioural beliefs in e-learning platform in Finland. Additionally, DeLone and McLean (1992) found that system quality have direct effect

on user satisfaction. Besides, Zhou (2013a) also found that system quality positively related to satisfaction than other quality variables, service quality and information quality which have no significant effect on satisfaction in mobile payment service in China.

To summarize, from review of extant previous literatures found that relationship between perceived system quality and continuance intention and system quality and satisfaction. As overall, found that system quality have significant positive relationship on continuance intention and on satisfaction in various online technologies context. This indicated that perceived system quality have significant influences on continuance intention and the higher the quality of a system the higher will be continuance intention. The more users satisfied with a system (online services) the more the users will incline to use it again. At the same time, there were few previous studies indicated that this relationship have insignificant influences. Thus, the above results revealed that the relationship between perceived system quality and continuance intention is inconclusive. Moreover, as research aware of to the date notably the relationship between perceived system quality and continuance intention received very minimal attention from researchers towards e-filing system in Malaysia. Hence, this research attempt to investigate the relationship between perceived system quality and continuance intention in the context of tax e-filing system in Malaysia.

## **2.7 Perceived Information Quality**

According to DeLone and McLean (1992) information quality is about "the quality of the information that the system produces". Perceived information quality defined to the extent to which a user views the information provided by a website as current,

accurate, relevant, useful and comprehensive (Yi, Yoon, Davis & Lee, 2013). DeLone and McLean (2003) categorized information quality based on how completeness, relevance, ease of understanding, security and personalization are the information generated for measuring information system success. As overall, in the electronic government and e-filing literature, information quality is similarly defined and measured using following attributes such as accuracy, comprehensive (completeness), timeliness (recent, up-to-date), relevancy, reliability, accessibility, understandability, appropriate amount, security and free of error (Abu-Shanab, 2014; Almahamid et al., 2010; Almahamid, 2009; Chen, 2010; Chen et al., 2015; Chumsombat, 2014; Floropoulos, Spathis, Halvatzis, & Tsipouridou, 2010; Jiang, 2011; Saha et al., 2012; Teo et al., 2008; Wangpipatwong et al., 2009).

For instance, Chen et al. (2015) stated that information quality is more critical factor beyond service quality and system quality for taxpayers to use the system in a study conducted in online tax filing system (eFPS) in Metro Manila, Philippines. As the information quality in the form of more accurate, comprehensive and reliable information determined the success of online taxation system (Floropoulos et al., 2010). Perceived information quality have long been found to be related with user intention to use different online technologies in previous researches (Almahamid et al., 2010; Rehman et al., 2012; Wang & Liao, 2008; Yahya et al., 2012). For instance, in G2C e-government system the belief of information quality have the most important dominant influence on use, satisfaction and perceived net benefit with an system (Wang & Liao, 2008). As the effect of information quality on users' use, satisfaction and perceived net benefits is positive towards e-government system were stronger than other quality constructs; service quality and system quality (Wang &

Liao, 2008). Furthermore, Almahamid et al. (2010) also found that positive relationship between perceived information quality and intention to use e-government existed for gathering information and conducting transaction. For instance, Saha et al. (2012) conducted a study to identify perceived information quality criteria applied in e-tax website in Sweden, found that information timeliness, information precision, and sufficiency or completeness of important information are the main criteria determined in evaluation of e-tax web sites. This indicates that the precise of information, right time and sufficient information that should cater citizens' needs to complete the related activities (Saha et al., 2012). Thus, information quality have been showed as vital factor that affecting satisfaction and information system use (DeLone & McLean, 1992, 2003).

Likewise, prior literature also have researched but very little attention given on the relationship between perceived information quality and continuance intention (Almahamid, 2009; Teo et al., 2008; Wangpipatwong et al., 2009). For instance, Teo et al. (2008) used DeLone and McLean IS success model as underlying framework to examine role of trust in e-government success to users of e-government website in Singapore. Results of empirical study by Teo et al. (2008) reveals that from three quality factors (system quality, service quality, information quality) only information quality perception have significant positive influence on users' intention to continue using e-government website among passive users whose main purpose of e-government website is to search for information. Wangpipatwong et al. (2009) also adapted DeLone and McLean IS success model and found strong support for the relationship between information quality and continued use as information quality enhances continued use of e-government website in Thailand and the relationship was

significant positive. This indicates that improved information quality enhanced users' intention to continue using e-government websites (Wangpipatwong et al., 2009).

In addition, especially the quality of type and characteristics (more accurate, recent, original and comprehensive) of information posted on e-government websites influence long run adoption decision (Abu-Shanab, 2014) of users' towards the system. As the main purpose of users' use e-government website is for searching for information (Jiang, 2011; Teo et al., 2008). Incomplete, erroneous in provided information will affect reliability of an information system which will affect and reduce intention to use that system (Ramayah et al., 2010). At the same time, poor information quality may undermine user experience with the system as the users have to spend more effort on searching for relevant information (Zhou, 2013a).

Furthermore, Almahamid (2009) also indentified that perceived information quality have significant effect on continuance intention to use e-government services in Jordan. Other than that, a study by Ramayah et al. (2010) in e-learning setting also found that information quality significantly and positively related to intention to continue usage of an information system. Zhou (2013b) found that information quality have significant effect on continuance usage of mobile sites. Thus, the above results, indicates that perceived information quality have significant positive influence on continuance intention. However, contrarily, Teo et al. (2008) found that perceived information quality have no significant effect on intention to continue using e-government website among active users of e-government website users in Singapore. Teo et al. (2008) mentioned that for the active users (who used e-government website for both information search as well as transaction) information quality is less

important for continued usage than for passive users (who used e-government website for information search purpose).

As overall, from above discussion of previous literatures it has been identified the authors came up with a significant outcome which implied that there were positive relationship between perceived information quality and continuance intention even the studies were conducted with different technological setting, venue and varying population size as sample size. At the same time, there were also some studies found that insignificant relationship between perceived information quality and continued use intention. Thus, this result reveals that inconsistent in nature of findings. Furthermore, as researcher aware of to date very few past studies have explored the relationship between perceived information quality and continuance intention in e-filing system specifically and in Malaysia.

Subsequently, the extant past research found that the degree of direct association of perceived information quality with satisfaction in various online technology settings such as e-learning (Chang, 2013; Roca et al., 2006), including e-government (Jiang, 2011) and e-filing context (Chen, 2010; Chen et al., 2015; Chumsombat, 2014; Floropoulos et al., 2010). For instance, a recent research conducted by Chen et al., (2015) in online tax filing system in Philippines context found that significant positive relationship existed between information quality and satisfaction and information quality found to be the most important one that determines user satisfaction. While, Chumsombat (2014) conducted an empirical study on e-tax filing system in Thailand, have determined that information quality in term of accuracy, being up to date, relevance and understandability significantly related on satisfaction. As well as, Chen

(2010) also empirically tested three types of quality antecedents on taxpayers satisfaction with online tax filing system in Taiwan and found that information quality have significant positive and strongest influence on satisfaction than other quality factors.

Moreover, Floropoulos et al. (2010) also adapted DeLone and McLean's IS success model and integrated it with Seddon's IS success model in Greek Taxation information System (TAXIS), the outcome of the study reveals that information quality exhibits significant positive influence on user satisfaction. Additionally, Jiang (2011) studied users of e-government portal and included information quality as one of dimensions of service quality to discover factors that influence users' continuance intention to e-government portal in China and found that information quality have positive influence and is the most important factor to improve users' satisfaction with e-government portal.

Other than studies in e-government and e-filing context, Chang (2013) conducted an empirical study on e-learning system in digital library, determined that information quality have significant positive influence on satisfaction. Influence of perceived information quality on users' satisfaction were stronger than service quality and perceived information quality as more relevant information is important to fulfil users' expectation (Roca et al., 2006). Contrarily, Teo et al. (2008) identified that perceived information quality insignificantly related to satisfaction. In summary, this results implied that the higher the information quality the higher satisfaction level of users' of the system (Floropoulos et al., 2010) as information quality were the one of important thing that determine satisfaction level of taxpayers with online tax filing system

especially about the up-to-date deductible information about taxation (Chen, 2010) in the system.

To summarize, from review and discussion from above literatures, it have be found that both direct relationship between perceived information quality on continuance intention and perceived information quality on satisfaction. Thus, it can be assumed that users' perceived information quality might have significant positive influence on satisfaction and continuance intention of tax e-filing system in Malaysia. Moreover, lack of empirical studies that used perceived information quality to examine continuance intention (Wangpipatwong et al., 2009) particularly in e-filing system context in Malaysia. Hence, this study attempt to explore the relationship between perceived information quality on continuance intention of tax e-filing system in Malaysia

## **2.8 Satisfaction**

Satisfaction have been widely used in many fields of study such as marketing, management, commerce and IS (Chatfield & AlAnazi, 2013). From review of past literatures identified that there is increases in number of researchers that exploring satisfaction in e-government studies. More importantly, many previous studies highlighted the eminence of satisfaction as a fundamental factor for continuance intention (Belanche et al., 2014; Chatfield & AlAnazi, 2013; Chen et al., 2009; Cheung & Lee, 2011; Ho, 2010; Hoehle et al., 2012; Hsu & Chiu, 2004; Islam, 2012; Jiang & Ji, 2014; Jiang, 2011; Lee, 2010; Li & Liu, 2014; Limayem & Cheung, 2008, 2011; Rejikumar & Ravindran, 2012; Teo et al., 2008; Thominathan & Ramayah,



2014) of and as key determinants for e-government success (Chang, 2013; Chen, 2010; DeLone & McLean, 1992, 2003).

According to Expectation Confirmation Theory (ECT), consumer satisfaction with a product or services determine future intention or continuance intention and while dissatisfaction leads to discontinuance subsequent use (Oliver, 1980; Wangpipatwong et al., 2008). Satisfaction is refers as individual evaluation of the product or services based on overall experience with it (Oliver, 1980). According to Hsu and Chiu (2004) satisfaction defined as the feelings of pleasure or disappointment which is resulting from comparing perception of the products or services performance to the user's expectation level. In addition, Chen et al. (2015) stated that satisfaction in e-government website refers as "measures a citizen's psychological or affective state due to the cognitive appraisal of users' experiences with the website in question". Thus, satisfaction is derived from real or first-hand experience with the IS itself (Bhattacharjee, 2001; Hernandez-Ortega et al., 2014; Lee, 2010)

The Expectation Confirmation Model (ECM) was employed as baseline model for this research. Bhattacharjee (2001) ECM model revealed that user's satisfaction have significant positive influence and is the key determinants of continuance intention in online banking context, as in continuance intention satisfaction were developed based on first-hand experience of users' with the IS (Bhattacharjee, 2001). In addition, user satisfaction was influenced by perceived usefulness and confirmation. While, any ignorance of satisfaction will effect continuance decision of IS user. While, in DeLone McLean Success model also adopted satisfaction as an important determinants of IS success in which satisfaction captured IS user's cumulative

satisfaction of with the experience of using of an IS over time and regarded as more long term factor (DeLone & McLean, 1992, 2003; Teo et al., 2008). For instance, Alias et al. (2011) revealed that satisfaction is an key indicator for adoption and further usage of e-government services at large scale and this will reflect how far a government of an country have changed or transformed their services in accordance with citizen's needs.

The extant of past researches have been explored the relationship between satisfaction and continuance intention. For example, Belanche et al. (2014) found that satisfaction exerted significant positive influence on continuance intentions of e-service tax return in Spain. While, Hsu and Chiu (2004) adapted Decomposed Theory of Planned Behaviour (DTPB) in e-filing context in Taiwan has identified that e-satisfaction is positively associated with continuance intention and plays mediating role in that context of the study. The author also pointed out that when users of e-service dissatisfied with the system may discontinue from e-service use. Thominathan and Ramayah (2014) also revealed that satisfaction have significant positive relationship towards continuance usage intention in e-filing context in Malaysia. But in the study conducted by Thominathan and Ramayah (2014) revealed that perceived usefulness is the stronger predictor of continuance intention than satisfaction which was different with the results from Bhattacharjee's ECM which found satisfaction is the stronger predictor of continuance intention.

Other than that, Jiang and Ji (2014) conducted a study that examines user's adoption and continuance intention of e-government web portal in China from the perspective of service level and service quality. The study found that user's satisfaction positively

affects continuance intention among all three information acquisition, exchange and transactional processing user group. In another study by Jiang (2011) also identified that user satisfaction have positive influence and is one of the main antecedent that influence continuance intention of e-government portal in China. Besides, Teo et al. (2008) also identified that user satisfaction positively associated with user's intention to continue using e-government website. A study by Chatfield and AlAnazi (2013) on citizen loyalty with e-government portal among 402 Saudi Arabia citizens who studying in Australia also found that, citizens satisfaction highly important in e-government services as more satisfied citizens with the online services will remain loyal and committed to e-government service in which it will enhance continued use of e-government services by users over time.

Similarly, other than in e-government context, variety of online technologies studies also has supported the notion of satisfaction as one of important reason to continuance intention of a technology. For instance, in e-learning context Cheung and Lee (2011), Lee (2010) and Limayem and Cheung (2011) found that continuance intention were positively influenced by satisfaction. Lee (2010) identified that satisfaction have significant positive and strong effect on continuance intention in e-learning context and users' will discontinue using an IS if user dissatisfied with that system despite have positive perception with regard other elements. Besides that, Islam (2012) and Limayem and Cheung (2008) also identified that satisfaction is one of factor that determine the level of internet based learning technologies continuance. Furthermore, Cheung and Lee (2011) identified that overall satisfaction which contain effect of information satisfaction and system satisfaction has positive significant influence on intention to continue use e-learning portal. Subsequently a study on e-learning

platform continuance intention based on integration of TAM, ECM, cognitive model (COGM) and self-determination model (SDM) also found that satisfaction significantly and positively influence continuance intention (Ho, 2010).

Additionally, a study in self-service technology context, Chen et al. (2009) integrated model of TAM, technology readiness and TPB and concludes that satisfaction have significant positive influence on continuance intention among Taiwanese MBA students. The above study by Chen et al. (2009) also revealed that perceived usefulness, perceived ease of use, optimism and innovativeness significantly influence satisfaction. While, Alalwan (2013) examined continuance intention to use government 2.0 services in Bahrain and identified that citizens' satisfaction have a positive influence on continuance intention. In online travel services context, Li and Liu (2014) found that satisfaction is the strongest predictor and have significant positive influence on continuance intention. Furthermore, Rejikumar and Ravindran (2012) stated that satisfaction has importance, strongest and significant influence on continuance intention towards internet banking in India. While, Hoehle et al. (2012) have been carry out a study in the context of internet banking continuance intention in New Zealand among 210 consumer also found that satisfaction positively affects continuance intention. Moreover, Shiau and Chau (2012) compared three models (TAM, ECT-IS and TAM and ECT-IS integrated model) among blog users in Taiwan highlighted that satisfaction positively affects and is the main predictor of continuance intention.

Other than that, prior researches (Bhattacharjee, 2001; Chang, 2013; Chen et al., 2012; Hernandez-Ortega et al., 2014; Hoehle et al., 2012; Yaya, Marimon, &

Casadesus, 2014) have been examined and justified satisfaction played mediator role in various context of technologies adoption. Similar to past studies, this research also tested the mediating effect of satisfaction to determine whether satisfaction influences relationship between perceived usefulness, trust, perceived system quality and perceived information quality on continuance intention. For instance, Bhattacharjee (2001) found that satisfaction mediates the relationship between perceived usefulness and continuance intention in using online banking context. In addition, a study by Chang (2013) found that satisfaction played mediating role on continuance intention in using e-learning system in academic library by 302 undergraduates and graduates from a university in Eastern Taiwan. The above authors also stated satisfaction play important role as the users' satisfaction with the personal experiences from using e-learning system will be greater source of advertising channel than print or mass media. Furthermore, Hernandez-Ortega et al. (2014) conducted a study on e-invoicing continued use intention in Spain with 1193 valid survey and identified that satisfaction also plays important mediating role in the context of inter organizational environment where the greater the firm's satisfaction with e-invoicing system in the organization the greater its continued use intention of that system in future. Besides that, Udo, Bagchi and Kirs (2010) found that customer satisfaction plays mediating role between web service quality and behavioral intention in the e-commerce environment.

While, Hoehle et al. (2012) conducted a study in internet banking continuance intention in New Zealand among 210 consumer and found that satisfaction plays partial mediating role between continuous trust and intention to continue using internet banking and had also highlighted that the proposed model has become

superior when satisfaction included in that particular study. Besides that, Zheng, Zhao and Stylianou (2013) also found that user satisfaction fully mediate the impacts of information quality and system quality on continuance intention. However, the same study also reveals that satisfaction partially mediates the relationship between net benefits and continuance intention to consume and continuance intention to provide in information-exchange virtual communities. Thus, the above discussion of previous studies found that mixed results on the mediating effect of satisfaction. Table 2.4 depicts about summary of previous studies on satisfaction.

To summarize, from overview of past literatures satisfaction demonstrated important significant positive influence on continuance intention. Thus, this results of the past studies shows that the more satisfied users with the usage experience with an internet based technologies, this will influence continued usage intention towards that particular online technology. Moreover, when user have higher satisfaction, their more inclined to continue use the service (Chen et al., 2012). In addition, from review past literatures found out that limited research done on influence of satisfaction on continuance intention in e-government research (Irani et al., 2012) especially in e-filing context in Malaysia. Hence, this research attempt to investigate the mediating effect of satisfaction between perceived usefulness, trust, perceived system quality and perceived information quality on continuance intention towards tax e-filing system context in Malaysia.

Table 2.4

*Summary of previous studies on satisfaction*

Author & Year	Area	Country	Respondents
(Belanche et al., 2014)	E-service tax return	Spain	336 e-filing users
(Thominathan & Ramayah, 2014)	E-filing	Malaysia	116 taxpayers
(Hsu & Chiu, 2004)	E-filing	Taiwan	149 employee company
(Jiang & Ji, 2014)	E-government web portal	China	630 individual citizens
(Alalwan, 2013)	E-government portal	Bahrain	392 e-government portal users
(Teo et al., 2008)	E-government website	Singapore	214 university students
(Chang, 2013)	E-learning	Taiwan	302 undergraduate and post graduate students
(Hernandez-Ortega et al., 2014)	E-invoice	Spain	1193 firms
(Li & Liu, 2014)	Online service travel	China	543 users
(Hoehle et al., 2012)	Internet Banking	New Zealand	210 individuals
(Shiau & Chau, 2012)	Blog	Taiwan	361 blog readers
(Rejikumar & Ravindran, 2012)	E-banking	India	184 customers of bank

**2.9 Theoretical Framework**

The main goal this research to determine factors that influences continuance intention of e-government services particularly tax e-filing system in Malaysia. Several factors influence users' continuance intention in past literatures. This empirical research is expects to provide a more comprehensive and better understanding of the factors that influencing users' continuance intention towards e-government services generally and specifically towards e-filing system in Malaysia. Research model of this research is developed based on Expectation Confirmation Model (ECM) (Bhattacharjee, 2001) as a primary theoretical perspective combine with perceived system quality, perceived

information quality and trust. Figure 2.2 below illustrates the new research model association for this empirical research.

The objective of theoretical framework of this research is to investigate the relationship expected among variables which were constructed based on previous researchers' recommendation and the evaluation of theoretical findings. This theoretical framework is presented based on following to the problem statement, research questions, research objectives and literature review and provided foundation for hypotheses of this study.

There are five independent variables, one mediating variable and one dependent variable identified for this research. Independent variables are perceived usefulness, trust, perceived system quality, perceived information quality and confirmation. Satisfaction is mediating variable and continuance intention as dependent variable. In this research, satisfaction expect to mediates the relationship between perceived usefulness, trust, perceived system quality and perceived information quality on continuance intention.



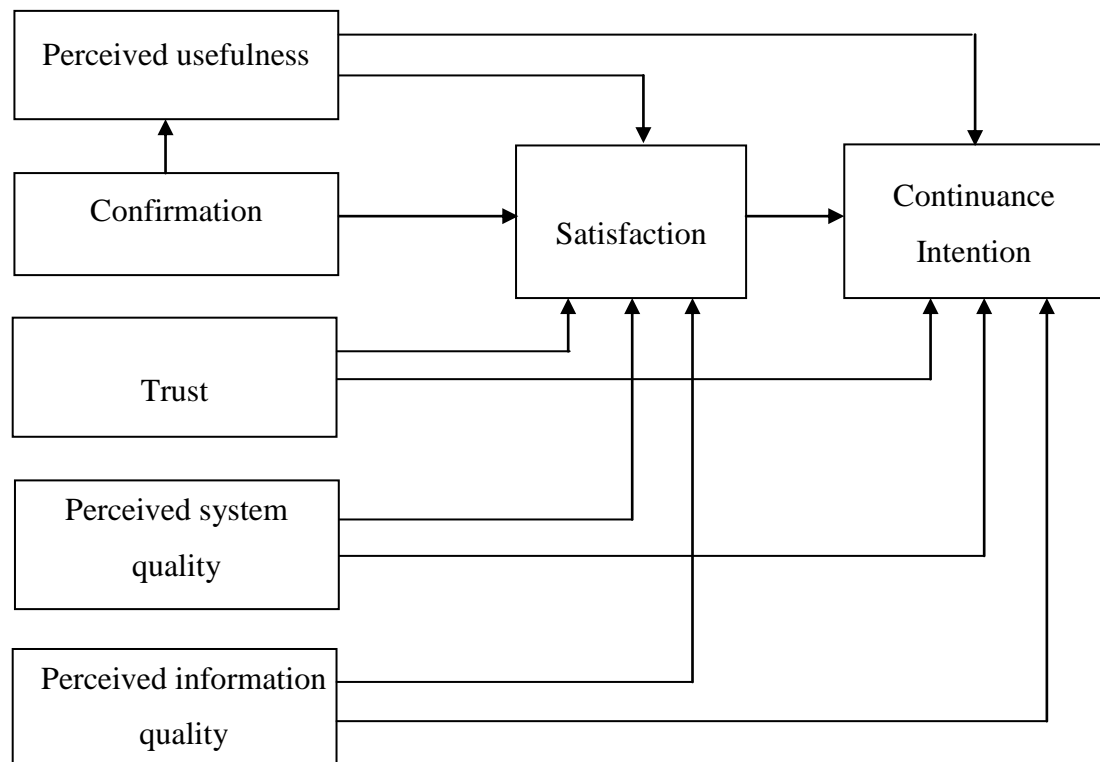


Figure 2.1  
*Theoretical Framework*

## 2.10 Underpinning Theory

In this research, Expectation Confirmation Model (ECM) proposed by Bhattacharjee (2001) is used as a primary underpinning theory. ECM were developed based on adaption of Expectation Confirmation Theory (ECT) of Oliver (1980). The theory of ECT have been widely used in consumer behaviour research to study consumer satisfaction, service marketing and post purchase behaviour (Bhattacharjee, 2001).

In Expectation Confirmation Model (ECM), Bhattacharjee (2001) defined continuance as "long term viability of an IS and its eventual success depends on its continued use rather than first time use". ECM posits that individual's continuance intention is determined by user's satisfaction with IS use and perceived usefulness as post adoption expectation belief. In addition, found that user satisfaction influenced

by perceived usefulness and confirmation, while confirmation effect perceived usefulness on other hand (Bhattacharjee, 2001). Figure 2.3 presents the ECM.

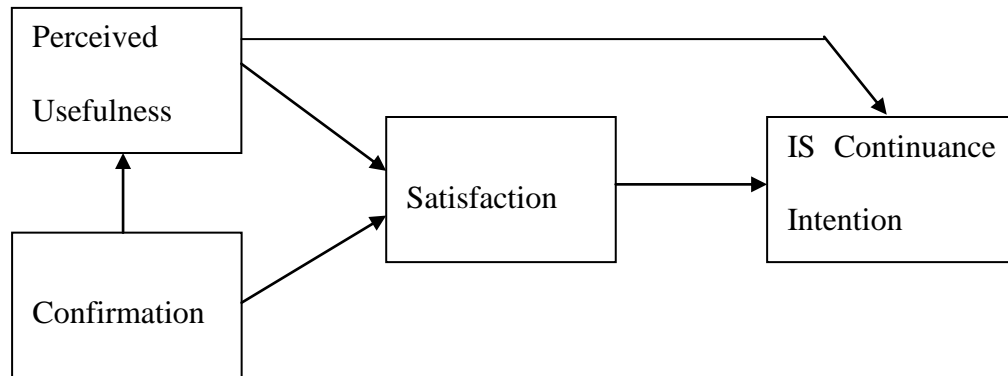


Figure 2.2  
*Expectation Confirmation Model (ECM)*, (Bhattacharjee, 2001)

Previous studies suggested that continuance intention is determined by different set of antecedents or factors which depending on the unique characteristics of the system or context of the study (Akter et al., 2012; Kang, Hong, & Lee, 2009; Limayem et al., 2007). This provides opportunity for the researchers to add or include determinants based on specific needs and context (Chong, 2013). More importantly, depending on the context of the study, ECM have been added or extended with different types or set of constructs such as perceived ease of use, internet self efficacy, perceived enjoyment, flow and others in various context of online technologies which range from e-government (Alalwan, 2012; Lim et al., 2013), e-learning (Islam, 2012; Lee, 2010), mobile health service (Akter et al., 2012), mobile commerce (Chong, 2013) to predict continuance intention. Moreover, this (as mention above) newly added constructs have been proven to be appropriate in that specific technology context (Akter et al., 2012; Kang et al., 2009).

Citizens should be paid taxes to IRBM on annual basis. The payment of taxes is mandatory but the method of choose to filing taxes via e-filing system is voluntary. ECM focused on individuals' intention to continue using an information system (IS). Therefore, use of ECM in the context of this research is suitable to investigate users' continuance intention towards e-filing system in Malaysia. Furthermore, ECM have been proven successful to predict continuance intention across various online service contexts (Akter et al., 2012; Chong, 2013; Islam, 2012; Kang et al., 2009; Lee, 2010; Lim et al., 2013; Thominathan & Ramayah, 2014). The usage of this model in various context, validity and reliability of ECM encouraged researcher of this research to adapt and validate this model in the context of e-filing system in Malaysia. However to date, even ECM have been used in investigating various technologies as mentioned above, but very less studies focused this model in the context of e-filing system in Malaysia. Thus, ECM is adopted to frame theoretical model and amended to suit context of this research.

Perceived usefulness have been examined both in initial adoption decision such as TAM (Davis, 1989) and post adoption in ECM (Bhattacharjee, 2001). ECM posits that user's perceived usefulness of IS have significant positive effect on continuance intention. Moreover, in past literatures have consistently found that perceived usefulness as one of important predictor in users intention to adopt an technology (Abu-Shanab, 2014; Almahamid et al., 2010; Belanche et al., 2012; Carter, 2008; Hussein et al., 2011; Lee, 2010; Shajari & Ismail, 2014; Zhang et al., 2011). Thus, the relative dominance influence of perceived usefulness, had led Bhattacharjee (2001) to include perceived usefulness in the revised model ECM as a critical driver of continuance intention (Al-Maghrabi & Dennis, 2011). For instance, users of the e-

government services tend to evaluate a technology based on usefulness of the service or technology itself to the users (Hussein et al., 2011), less complicated and the technology itself should enhance the work of users of the system in term of time, cost than traditional or manual service (Ambali, 2009). Otherwise, the users of will neglect the technology in future if the technology itself don't have any enhancement or differences than traditional manual system (Ambali, 2009). Applied to context of this research, once users understand the usefulness and benefit of e-filing system to them than manual system, this will influence user's continuance usage intention towards e-filing system.

ECM also posited that satisfaction with IS use have positive and stronger effects on users' continuance intention (Bhattacharjee, 2001). User's satisfaction is a key determinants of continuance intention as the satisfaction were developed based on user's first-hand experience with the IS (Bhattacharjee, 2001). Additionally, in ECM found that satisfaction mediates the relationship between perceived usefulness and intention to continue using online banking. Moreover, satisfaction also have been adopted as important determinants of IS success in DeLone and McLean IS Success model (DeLone & McLean, 1992, 2003). User satisfaction with a product or services determines future intention or continuance intention while dissatisfaction leads to discontinuance subsequent use (Oliver, 1980; Wangpipatwong et al., 2008). Hence, regarding e-filing system as context of this research when user's who are satisfied with e-filing system will continue using the system in future. In addition, in this research satisfaction variable posits as mediating variable between relationship of perceived usefulness, trust, perceived system quality and perceived information quality on continuance intention of tax e-filing system.

Additionally, ECM also posited that confirmation use have positive and stronger effects on users' continuance intention (Bhattacharjee, 2001). This model posited that a user continuance intention of an IS determined by the extent of which user's confirmation of the expectation level. Bhattacharjee (2001) found that confirmation influences satisfaction. In addition, on other hand Bhattacharjee (2001) also found that confirmation have significant effect on perceived usefulness. Applied to the context of this research, once user's expectation is confirmed about e-filing system this will influence user's satisfaction level and perceived usefulness towards e-filing system.

Given the impersonal and uncertainty nature of electronic transaction, trust is pertinent in the online services (Belanche et al., 2012, 2014; Belanger & Carter, 2008) as privacy and security of users are at risk as the exchanges of personal and sensitive information through internet to the service provider (Venkatesh et al., 2011). As in the context of e-filing system, involves transaction of personal and sensitive information via internet to submit tax return, trust could become an important factor that influence user's continuance intention.

In addition to above variables, perceived system quality and perceived information quality factors explored in this research. DeLone and McLean IS Success model summarised six major components that contribute to IS success; information quality, system quality, use, user satisfaction, organizational impact and individual impact (DeLone & McLean, 1992). According to DeLone and McLean (1992) suggest that system quality and information quality are two critical factors that determine success of an information system. In 2003, this IS success model have been improved and

incorporated service quality along system characteristics variable, which captured users' perception of overall services provided by service providers (DeLone & McLean, 2003; Teo et al., 2008). This have been verified by Teo et al. (2008) in a study based on DeLone and McLean IS Success model, considered that quality of e-government website can be evaluated based on perceived information quality, perceived system quality and perceived service quality. Perception of quality formed through user's previous experience with the website and thus this perception may affect user's future continuance intention usage of the system (Teo et al., 2008). Islam (2012) conceptualized perceived system quality as a post adoption belief in e-learning setting.

Thus, the main purpose users use e-government website is for searching for information (Jiang, 2011; Teo et al., 2008). Especially the quality of type and characteristics (more accurate, recent, original and comprehensive) of information posted on e-government websites and influence long run adoption decision (Abu-Shanab, 2014) of users' towards the system. As in this context of this research, users perception and belief of quality of information and especially up-to-date taxpayers' deductible information on e-filing system expect will influence users continuance intention towards this system.

According to DeLone and McLean (2003) system quality is one of important factor that influence satisfaction and the intention to use. The higher the quality of the system will contribute to more use, more satisfaction and positive net benefits, conversely if the system have poor quality will cause to user dissatisfaction and negative net benefits (DeLone & McLean, 2003). Other than that, if the system does

not meet users need, further use will be avoided by user of the system (as cited in (Wangpipatwong et al., 2009). Regarding tax e-filing system in the context of this study, user perception and belief on quality of the system functioning especially during taxation pick period could influence user's continuance intention decision in future.

To summarize, this research includes trust, perceived system quality and perceived information quality as additional variables for improve explanatory power of ECM in the proposed model to reflect user's continuance intention towards specifically in e-filing system and generally in e-government service in Malaysia.

## **2.11 Research Hypotheses**

Based on previous empirical findings, this section are outlined the research hypotheses associated with the above research theoretical model. The following paragraphs discussed the hypothesized relationships between variables of the present study.

### **2.11.1 Relationship between perceived usefulness and continuance intention**

In prior studies, perceived usefulness was studied into two streams of thoughts. The first stream is from TAM and second stream is from ECM. In the first stream, previous authors extended TAM model with integrated with other variable that relevant with the context of study (Belanche et al., 2012; Carter, 2008). In the initial technology adoption, many studies utilized perceived usefulness as a predictor and shows significant positive influence on intention to use (Abu-Shanab, 2014; Almahamid et al., 2010; Annuar & Othman, 2010; Belanche et al., 2012; Carter,

2008; Fu et al., 2006; Hussein et al., 2011; Shajari & Ismail, 2014; Zhang et al., 2011). The second stream is studied perceived usefulness as a part of ECM or ECT. Perceived usefulness in the ECM considered as a type of post adoption expectation upon interacting with the IS, in this case e-filing system. There are many prior studies that have investigated the relationship between perceived usefulness and continuance intention in various technologies context such as internet banking (Hoehle et al., 2012), online travel services (Li & Liu, 2014), e-learning (Lee, 2010; Limayem & Cheung, 2011) mobile commerce (Chong, 2013; Zhou, 2011) and e-government services (Jiang, 2011; Wangpipatwong et al., 2008). Most of this studies found significant positive relationship between perceived usefulness and continuance intention (Ambali, 2009; Jiang, 2011; Thominathan & Ramayah, 2014; Wangpipatwong et al., 2008). For example, Jiang (2011) found that perceived usefulness have significant positive influence and is one of the main antecedent that influence continuance intention of e-government portal in China. However, despite above significant relationship, (Almahamid, 2009; Hung et al., 2012; Jiang & Ji, 2014; Shiau & Chau, 2012; Susanto et al., 2012) identified that insignificant relationship between perceived usefulness and continuance intention. For example, Almahamid (2009) found that perceived usefulness have insignificant influence on continuance intention to use e-government services in Jordan. Based on ECM as the baseline model of this research, this study hypothesized that the relationship between perceived usefulness and continuance intention as follows:

H1: There is a positive relationship between perceived usefulness and continuance intention of tax e-filing system.



### **2.11.2 Relationship between trust and continuance intention**

As previously discussed in literature, trust have been explored extensively in initial technology adoption (Belanche et al., 2012; Belanger & Carter, 2008; Chen et al., 2015; Hussein et al., 2011; Shajari & Ismail, 2014). However, fewer studies empirically examined the relationship between trust and continued usage intention empirically in e-government research (Belanche et al., 2014) and particularly in tax e-filing system. But trust is required as a crucial factor for long term relationship and success of e-government (Teo et al., 2008). In addition, trust still have been receiving primary consideration in e-government research due to the uncertainty environment and involvement of exchanges of personal and sensitive information through internet to the services providers (Belanche et al., 2012, 2014; Belanger & Carter, 2008; Venkatesh et al., 2011). Thus, based on the importance of this variable for the success of an online technology, previous researchers in continuance studies started to explore the relationship between trust and continuance intention and found significant positive relationship between this two variables in various technological context (Belanche et al., 2014; Chong, 2013; Hernandez-Ortega, 2011; Hoehle et al., 2012; Teo et al., 2008). However, despite above significant positive relationship, (Kassim & Abdullah, 2010; Venkatesh et al., 2011) found insignificant relationship between trust and continued usage intention. Moreover, Teo et al. (2008) proposed importance of trust variable in their research model and recommended further study needed on the role trust in e-government context. Thus, in this research the relationship between trust and continuance intention examined in the context of tax e-filing system in Malaysia. Thus, consistent with the literature, this study hypothesized the relationship between trust and continuance intention as follows:

H2: There is a positive relationship between trust and continuance intention of tax e-filing system in Malaysia.

### **2.11.3 Relationship between perceived system quality and continuance intention**

System quality is concerned with measure of the actual system which produces the output (DeLone & McLean, 1992). DeLone and McLean (1992) found that system quality have a significant effect on user satisfaction and IS use in DeLone and McLean IS Success Model. Subsequent researches have explored this association in various technological context (Hsu et al., 2014). In addition, there also some authors partially tested or extended this model by integrated with other variables that relevant with the context and problem of their study (Chen et al., 2015; Floropoulos et al., 2010; Khayun & Ractham, 2011; Zhou, 2013a). In the initial technology adoption, system quality have been found have significant positive relationship with intention to use an IS (DeLone & McLean, 1992, 2003; Yahya et al., 2012). In addition past studies also have found that there is positive relationship between perceived system quality and continuance intention (Islam, 2012; Ramayah et al., 2010; Teo et al., 2008; Wangpipatwong et al., 2009; Zhou, 2013b) in variety of technological context. In contrast, despite above significant relationship, (Islam, 2012; Teo et al., 2008; Zhou, 2013b) found insignificant relationship between perceived system quality and continuance intention. Other than that, from review of prior studies identified that most of the previous studies explored the relationship between system quality direct to satisfaction but very less studies explored further or directly this relationship to continuance intention. Moreover, as researcher aware of fewer studies were explored this relationship in the context of e-government and particularly in e-filing system.

Therefore, consistent with the literature, this study hypothesized the relationship between perceived system quality and continuance intention as follows:

H3: There is positive relationship between perceived system quality and continuance intention of tax e-filing system.

#### **2.11.4 Relationship between perceived information quality and continuance intention**

According to DeLone and McLean (1992) information quality is concerned about quality of the information that the system produces and delivers. DeLone and McLean (1992) indicated that information quality have direct affect on user satisfaction and IS use. This have been confirmed in the initial technology adoption, with (Almahamid et al., 2010; Rehman et al., 2012; Wang & Liao, 2008; Yahya et al., 2012) found information quality have significant positive relationship with intention to use an IS. Furthermore, the extant of past studies also have explored the relationship between information quality and continuance intention in various technologies context (Almahamid, 2009; Teo et al., 2008; Wangpipatwong et al., 2009). However, very less study tested this relationship in the context of tax e-filing system. Despite, the fact that most of the studies found significant positive relationship between information quality and continuance intention, Teo et al. (2008) found this relationship to have insignificant effect. More importantly, as researcher aware of fewer studies explored the direct relationship between perceived information quality on continuance intention of tax e-filing system context. Thus, when service providers offer relevant and needed information, this will facilitate users to continued use e-filing system in future. Therefore, consistent with the literature, this research

hypothesized the relationship between perceived information quality and continuance intention as follows:

H4: There is positive relationship between perceived information quality and continuance intention of tax e-filing system.

#### **2.11.5 Relationship between satisfaction and continuance intention**

Satisfaction is "individuals' feelings of pleasure or disappointment which is resulting from comparing their perception of a product or services performance to their expectation level" (Hsu & Chiu, 2004). In ECM, Bhattacharjee (2001) indicated that satisfaction were significant and stronger predictor of continuance intention in the context of online banking service. This relationship have been studied in various technologies such as e-government, e-learning, self-service technology context, internet banking and etc (Belanche et al., 2014; Chatfield & AlAnazi, 2013; Chen et al., 2009; Cheung & Lee, 2011; Ho, 2010; Hoehle et al., 2012; Hsu & Chiu, 2004; Islam, 2012; Jiang & Ji, 2014; Jiang, 2011; Lee, 2010; Li & Liu, 2014; Limayem & Cheung, 2008, 2011; Rejikumar & Ravindran, 2012; Teo et al., 2008; Thominathan & Ramayah, 2014). All this studies have established the significant positive relationship between satisfaction and continuance intention. For example, Jiang (2011) found that user satisfaction have positive influence on user continuance intention of e-government portal in China. In addition, Lee (2010) identified that satisfaction as the strongest predictor towards users' continuance intention in e-learning context and users' will discontinue using an IS if user dissatisfied with that system despite have positive perception with regard other elements. From review past literatures, found that limited research done on the effect of user satisfaction in e-government research

(Irani et al., 2012) especially in e-filing context in Malaysia. Thus, based on past researches suggestion this research infer that users who is more satisfied with usage experience will have higher level of continuance intention. Therefore, based on ECM as the baseline model of this research, this study hypothesized the relationship between satisfaction and continuance intention as follows:

H5: There is positive relationship between satisfaction and continuance intention of tax e-filing system.

#### **2.11.6 Relationship between perceived usefulness and satisfaction**

Prior studies have established significant positive relationship between perceived usefulness and satisfaction (Akter et al., 2012; Belanche et al., 2014; Chong, 2013; Hernandez-Ortega et al., 2014; Hoehle et al., 2012; Jiang & Ji, 2014; Jiang, 2011; Lee, 2010; Li & Liu, 2014; Limayem & Cheung, 2011; Shiau & Chau, 2012; Zhou, 2011). For example, Belanche et al. (2014) found that perceived usefulness have significant positive influence on satisfaction in e-service of tax return context in Spain. Roca et al. (2006) revealed that perceived usefulness has significant positive effects on satisfaction in e-learning context. Subsequently, in ECM, Bhattacharjee (2001) have found perceived usefulness have significant influence on satisfaction in e-banking context. Thus, this indicates that perception of usefulness of a system will influence users' satisfaction with that system (Roca et al., 2006). Since, this research employed ECM as the baseline model, this study hypothesized the relationship between perceived usefulness and satisfaction as follows:

H6: There is a positive relationship between perceived usefulness and satisfaction

### **2.11.7 Relationship between trust and satisfaction**

As discussed about trust in literature review section, previously researchers have explored and showed significant positive relationship between trust and user satisfaction (Akter et al., 2012; Hoehle et al., 2012; Hsu, et al., 2014; Kassim et al., 2012; Teo et al., 2008). However, very few studies considered this relationship (Teo et al., 2008) in e-government and particularly in e-filing context. Satisfaction will be high if users' trust in an e-portal is high, while if an IS not trustworthy the satisfaction level will be low (Hoehle et al., 2012). Therefore, consistent with the literature, this study hypothesized the relationship between trust and satisfaction as follows:

H7: There is positive relationship between trust and satisfaction.

### **2.11.8 Relationship between perceived system quality and satisfaction**

The extant past researches found that the degree of direct significant positive association between system quality and satisfaction (Chang, 2013; Chen, 2010; Chumsombat, 2014; Islam, 2012; Roca et al., 2006; Teo et al., 2008). For instance, Chen (2010) found that system quality have positively associated with taxpayer satisfaction in the online tax filing context in Taiwan. Additionally, DeLone and McLean (1992) in DeLone and McLean IS success model found that system quality have significant effect on user satisfaction. Thus, based on above discussion, this research hypothesized the relationship between perceived system quality and satisfaction as follows:

H8: There is a positive relationship between perceived system quality and satisfaction.

### **2.11.9 Relationship between perceived information quality and satisfaction**

Prior authors have investigated the relationship of information quality on satisfaction (Chang, 2013; Chen, 2010; Chen et al., 2015; Chumsombat, 2014; Floropoulos et al., 2010; Jiang, 2011; Roca et al., 2006). However, most of these studies conducted in western countries and very less study tested this relationship in the context of e-filing in Malaysia. Additionally, DeLone and McLean (1992) in DeLone and McLean IS success model found that information quality have direct effect on user satisfaction. Despite the fact that most of this studies found significant positive relationship between perceived information quality and satisfaction, but there in one study found this relationship to have insignificant effect (Teo et al., 2008). In summary, this results implied that the higher the information quality higher the satisfaction level will be towards a system (Floropoulos et al., 2010). Thus, based on above discussion, this research hypothesized the relationship between perceived information quality and satisfaction as follows:

H9: There is positive relationship between perceived information quality and satisfaction.

### **2.11.10 Relationship between confirmation and satisfaction**

In ECM, Bhattacharjee (2001) indicated that confirmation have significant positive influence on satisfaction in the context of online banking service. This relationship have been studied in various technologies such as e-government, e-learning, internet banking, online travel service and etc (Chen et al., 2009; Ho, 2010; Hoehle et al., 2012; Islam, 2012; Lee, 2010; Li & Liu, 2014; Shiau & Chau, 2012; Shiau et al., 2011; Thominathan & Ramayah, 2014; Zhou, 2011). These previous studies have

been found the significant positive relationship between confirmation and satisfaction. Thus, based on past researches suggestion this research infer that users' whose expectation is confirmed with usage experience with a technology will have higher level of satisfaction. Therefore, based on ECM as the baseline model of this research, this study hypothesized the relationship between confirmation and satisfaction as follows:

H10: There is positive relationship between confirmation and satisfaction.

#### **2.11.11 Relationship between confirmation and perceived usefulness**

Confirmation is a cognitive belief (the extent to which users' expectation of IS use is realized during actual use) derived from prior IS use (Bhattacharjee, 2001). Bhattacharjee (2001) found that confirmation influences perceived usefulness. Prior researchers have explored the association between confirmation and perceived usefulness and found significant positive relationship between confirmation and perceived usefulness (Chen, et al., 2009; Hoehle et al., 2012; Islam, 2012; Li & Liu, 2014; Limayem et al., 2011; Shiau et al., 2011; Thominathan & Ramayah, 2014; Zhou, 2011). Thus, based on above discussion, this research hypothesized the relationship between confirmation and perceived usefulness as follows:

H11: There is positive relationship between confirmation and perceived usefulness.



#### **2.11.12 Mediating role of satisfaction on perceived usefulness, trust, perceived system quality and perceived information quality towards continuance intention relationships**

User satisfaction is one of key determinants of an IS success (Chen, 2010). In ECM found that satisfaction influence continuance intention and plays mediating role between relationship of perceived usefulness and continuance intention in online banking context (Bhattacharjee, 2001). Prior researches (Bhattacharjee, 2001; Chang, 2013; Chen et al., 2012; Hernandez-Ortega et al., 2014; Hoehle et al., 2012; Yaya et al., 2014) have been examined and justified satisfaction plays mediating role in information system adoption research. Other than that, previous studies also found mixed results on mediating effect of satisfaction. For example, Hoehle et al. (2012) conducted a study in internet banking continuance intention in New Zealand among 210 consumer and the results confirmed that satisfaction plays mediating role between continuous trust and continuance intention. Similarly, Zhou (2011) found that full mediation effect of satisfaction in relationship between perceived ease of use and continuance intention in the context of mobile service. However, some studies reveals a partial mediation effect of satisfaction. For example, Wang and Liao (2008) in measure of success G2C e-government system adapted DeLone McLean's IS success model, found that user satisfaction plays partial mediation role between use and perceived net benefit in e-government system context. Moreover, a study by Liao, Chen and Yen (2007) found that satisfaction not playing mediating role between perceived usefulness and behavioural intention in continued use of e-service which is this result is inconsistent with the finding of (Bhattacharjee, 2001) in ECM. Thus, based on past above literatures, this research hypothesizes that:

H12: Satisfaction mediates the relationship between perceived usefulness and continuance intention of tax e-filing system.

H13: Satisfaction mediates the relationship between trust and continuance intention of tax e-filing system.

H14: Satisfaction mediates the relationship between perceived system quality and continuance intention of tax e-filing system.

H15: Satisfaction mediates the relationship between perceived information quality and continuance intention of tax e-filing system.

## **2.12 Summary**

This chapter provides an analysis of literature review of past researches. Numerous studies have been reviewed pertaining definition and evolution of e-government, theories have been used, with the objective to identify the important findings and variables for the study. In this chapter also have discussed about theoretical framework and hypotheses was developed in this research.

## **CHAPTER 3**

### **METHODOLOGY**

#### **3.0 Introduction**

This section discusses regarding the research methodology that have been used in this research which covers about research design, sampling method, data collection procedure, measurement of variables, questionnaire design, translation procedure and technique of data analysis.

#### **3.1 Research Design**

According to Sekaran and Bougie (2010), the research design involves a sequence of good decision making choices relating to the purpose of study, the study setting, the type of investigation, level of researcher interference, time horizon, the unit of analysis, the type of sample to be used as well as the data collection methods, measurement and data analysis. The intention of this research is merely to see if the relationship does exist among the variable that have been chosen to be examined. Thus, parallel to the objective, this research is correlation study in nature as merely to see and measure the relationship between independent variables (perceived usefulness, trust, perceived system quality, perceived information quality and confirmation), dependant variable (continuance intention) and mediating variable (satisfaction). In correlation study, the researcher will conduct the study in the natural environment of community with minimum interference in the normal work flow (where this means that after develop the theoretical framework of the study, researcher have to collect data and analyze them with the correct analysis techniques to obtain the findings) (Lean et al., 2009). Other than that, this research also cross

sectional study. In cross sectional study the data will be gather one shot at one point of time purposely to answer research question (Sekaran & Bougie, 2010). Past researches on continuance intention also have used this shot of research design (Chen et al., 2009; Hoehle et al., 2012; Hsu & Chiu, 2004)

According to Sekaran and Bougie (2010), the nature of studies can be categories into three categories; exploratory, descriptive and hypothesis testing. As the aim of this study is to investigate relationship between various variable, it can be considered as hypothesis testing in nature. Hypothesis testing is used to describe the nature of certain relationships, or establish the differences among groups or the independence of two or more factors in a situation (Sekaran & Bougie, 2010).

### **3.1.1 Unit of Analysis**

This research focuses on tax e-filing system users in Malaysia. The unit of analysis selected is individual taxpayers who have used e-filing system to submit their tax return at least once. Department of Statistics (2013) characterized 29.94 million of Malaysian population into three types of age groups; below 15 years (7.79 million), 15 to 64 years (20.50 million) and above 65 (1.64 million) years old. Thus, for the purpose of this study the focus group chosen was from second category from age of 25 to 55 and above, since in this category consists of people who have finished their highest education study, start working and until the retirement age who involve directly and indirectly in the submission of tax return (taxpayers) via usage of e-filing system. Hence, the perception from this category of people is may more valid as their direct knowledge, skills and experience on tax e-filing system.

### **3.2 Population and Sampling Method**

Population is the entire group of people, events or things that researcher desires to investigate (Sekaran & Bougie, 2010). The target population for this research is the entire individual taxpayers in Malaysia. The reasons for choosing individual taxpayers is this users group are one of the largest group of taxpayers in Malaysia and a pioneer group who using e-filing system for tax return. In year 2011 there were 6.6 million registered taxpayers with 5.5 millions are individual taxpayers (Gazali, 2012). From this total of approximately 34 percent (1,914,110 submission) of 5.5 million total registered individual tax payers in year 2011 have submitted tax return via e-filing system (Annual Report IRBM, 2011; Gazali, 2012). In year 2012, 39.0 percentage (2,268,222 number) of taxpayers submitted tax return via e-filing (Annual Report IRBM, 2012; Economic Planning Unit, 2013).

Sampling is a process selection of sufficient number of the right elements from the populations, so that the sample characteristics can be generalized to the populations (Sekaran & Bougie, 2010). Thus, the main goal of sampling method is to generalize from the sample to the target population. Therefore, this research employed non-probability purposive sampling technique. The purposive sampling is used to gather information from specific target or group of people who can provide the desired information (Sekaran and Bougie, 2010). Purposive sampling approach is which data is obtained from specific respondents who possess certain characteristics most suitable and/or most informative about phenomenon of interest of the research (Teddlie & Yu, 2007). Thus, this made it possible citizens with necessary expertise and exposure with e-filing system to be targeted. Hence, this study collected data from the respondents who have the experience of using e-filing system for tax

submission purpose and therefore this method of sampling is the suitable one. Previously purposive sampling technique was used by Ambali (2009); Azmi & Aziz (2015) in e-filing context; Alomari, (2014), Bwalya, Plessis and Rensleigh (2014), Sorn-in, Tuamsuk and Chaopanon (2015) in e-government context and Shah, Peikari & Yasin (2014) in e-security context. The above mention studies were conducted in various countries such as in Malaysia, Thailand, Zambia and Jordan respectively.

The sample size of this research is will be drawn from individual taxpayers in Malaysia. The size of sample was determined by rule of thumb provided by Krejcie and Morgan (1970). As the population of this research is approximately nearly 5.5 million total registered individual (Annual Report IRBM, 2011; Annual Report IRBM, 2012; Economic Planning Unit, 2013; Gazali, 2012). Thus, according to Krejcie and Morgan (1970), the suitable sample size is 384. Malaysia consists of 13 states and this study selected eleven states in peninsular Malaysia. In order to take care of none response rate and minimize error in sampling as suggested by Hair, Wolfinbarger and Ortinall (2008), the sample size was doubles, hence a total of 768 questionnaires were distributed equally to individual taxpayers in main branches of Inland Revenue Board of Malaysia in eleven states in peninsular Malaysia.

### **3.3 Data Collection**

There are various techniques of data collection methods such as interviews, questionnaire and observation (Sekaran & Bougie, 2010). This research used questionnaire method as the main technique of data collection. Questionnaire is a prefomulated written set of questions to which respondents records their answer (Sekaran & Bougie, 2010). Over the years, researchers have acknowledged that

questionnaires are the most efficient and effective way to collect data if the researcher understands precisely what needs to be asked and how to measure the constructs being investigated, this can assist to achieve precision and applicability in the whole survey (Zikmund, 1999). This technique is chosen because questionnaires have several advantages, such as; data could be obtained more effectively in terms of researcher time, energy and costs, increases likelihood of obtaining accurate information, and offers anonymity (Kumar, 2011; Sekaran & Bougie, 2010). The questionnaires were self-administered by researcher. The questionnaire had a cover letter which stated the purpose of this study, confidentiality of the gathered data and instructions how to answer the questions.

### **3.4 Questionnaire Design**

In this research, questionnaire survey was used as a medium for data collection with the instruments for each variable is guided by previous studies. The survey questionnaire comprised of nine sections (refer to Appendix one). Before section A, is the cover page with introduction on the subject matter of the questionnaire and soliciting for the respondents' participation in the questionnaire survey. The respondents were assured of the confidentiality of their information. Section A consists of screening question to determine if the respondent is e-filing user where this helped to screen out respondents who are not qualified to answer the rest of questions. If the respondents answer no, the respondents thanked and asked not to continue. If the answer of the respondent is yes, they were asked to continue answer further questions. Section B covered about demographic profile of respondents such as; gender, age, race, education level, income, computer use experience and internet use experience which these demographic factors adopted from (Fu et al., 2006; Hussein et al., 2011).

Section C to section I consists of factors that influences continuance intention of tax e-filing system. The following sections provided items for each constructs; perceived usefulness, trust, perceived system quality, perceived information quality, confirmation, satisfaction and continuance intention. In order to ensure validity, most of items were adapted from past literatures. Likert scales used to measure response since this scale widely used in IS research and have been extensively tested in both MIS and social science (Garland, 1991). Responses to statements in the questionnaire measured using five point Likert scale ranging from 1=strongly disagree to 5=strongly agree. The reason for chosen five point likert are previous researchers argued that using scale with midpoint provides better and accurate result and scales between five to seven points more reliable than scale with fewer points (Krosnic & Fabrigar, 1997). Alwin and Krosnick (1991) and Mailand (2009) stated that five point scales demonstrates superior reliability compared with scales of other lengths. Other than that, the past literatures also suggested that five point scale appears less confusing and to increase response rate (as stated in Bouranta, Chitiris & Paravantis, 2009).

The questionnaire items used in this research were adapted from previous studies as mention earlier. Thus, original questionnaires were drafted in English. As considering multicultural race of respondents of this study, thus questionnaire were prepared in bilingual language in English and Malaysia by following back to back translation method. Back to back translation method used to ensure an accurate and reliable translation of questionnaire. Thus, the questionnaire drafted in English was translated by qualified experts in language center of Universiti Utara Malaysia.



### 3.4.1 Perceived Usefulness

In order to measure perceived usefulness, the items for this variable adapted from Davis (1989). Perceived usefulness measured using five point Likert scale labelled from strongly disagree to strongly agree. Table 3.1 indicates six items for perceived usefulness construct.

Table 3.1

*Measures of perceived usefulness*

Variable	No.	Items	Source
Perceived Usefulness	1.	Using the e-filing system by IRBM enables me to accomplish my tax filing task more quickly.	Davis (1989)
	2.	Using the e-filing system by IRBM improves my performance in managing my taxes task.	
	3.	Using the e-filing system by IRBM enhances my effectiveness in filing my taxes.	
	4.	Using the e-filing system by IRBM increases my productivity in preparing my taxes.	
	5.	Using the e-filing system by IRBM makes my taxes filing easier..	
	6.	I find that e-filing system by IRBM is useful in filing my taxes.	

### 3.4.2 Confirmation

The items for confirmation variable adapted from Bhattacharjee (2001). Confirmation measured using five point Likert scale labelled from strongly disagree to strongly agree. Table 3.2 shows list of three items for confirmation construct.

Table 3.2

*Measures of confirmation*

Variable	No.	Items	Source
Confirmation	1.	My experience with using the e-filing system by IRBM was better than what I expected.	Bhattacharjee (2001)
	2.	The service level provided by the e-filing system by IRBM was better than what I expected.	
	3.	Overall, most of my expectation from using e-filing system by IRBM were confirmed.	

### 3.4.3 Trust

Measures for trust adapted from Belanche et al. (2012); Chong (2011). Trust measured using five point Likert scale labelled from strongly disagree to strongly agree. Table 3.3 shows five items for trust construct.

Table 3.3  
*Measures of Trust*

Variable	No.	Items	Source
Trust	1.	I trust the e-filing system by IRBM.	Belanche et al. (2012); Chong (2011)
	2.	The e-filing system by IRBM is a reliable mean to carry out transactions.	
	3.	The e-filing system by IRBM is trustworthy.	
	4.	I believe that transaction made through e-filing system by IRBM proceed securely.	
	5	I believe that my personal information kept confidential while using the e-filing system by IRBM.	

### 3.4.4 Perceived System Quality

In order to investigate the influence of perceived system quality on continuance intention of e-filing system, the items for this variable adapted from Teo et al., (2008); Saha, Nath and Salehi-Sangari (2012). Perceived system quality measured using five point Likert scale labelled from strongly disagree to strongly agree. Table 3.4 indicates ten items related to perceived system quality construct.

Table 3.4  
*Measures of perceived system quality*

Variable	No.	Items	Source
Perceived system quality	1.	The e-filing system by IRBM is easy to use.	Teo et al., 2008; Saha, Nath & Salehi-Sangari, 2012
	2.	The e-filing system by IRBM is user friendly.	
	3.	The e-filing system by IRBM provides necessary information and forms to be downloaded.	
	4.	The e-filing system by IRBM provides helpful instruction for performing my task.	
	5.	I believe that the e-filing system by IRBM is cumbersome to use.	

Table 3.4 (Continued)

6.	Using the e-filing system by IRBM requires a lot of effort.
7.	The e-filing system by IRBM is often frustrating.
8.	The e-filing system by IRBM provides fast information access.
9.	It only takes few clicks to locate information.
10.	It is easy to navigate within the e-filing system by IRBM.

### 3.4.5 Perceived Information Quality

In order to measure perceived information quality, the items for this variable adapted from Teo et al., (2008); Nicolaou and McKnight (2006). Perceived information quality measured using five point Likert scale labelled from strongly disagree to strongly agree. Table 3.5 indicates nine items with regards to perceived information quality.

Table 3.5  
*Measures of perceived information quality*

Variable	No.	Items	Source
Perceived Information quality	1.	The e-filing system by IRBM provides sufficient information to accomplish task at hand.	Teo et al., 2008; Nicolaou & McKnight, 2006)
	2.	Through the e-filing system by IRBM, I get the information I need in time.	
	3.	Information provided by the e-filing system by IRBM meets my needs.	
	4.	Information provided by the e-filing system by IRBM is in a useful format.	
	5.	Information provided by the e-filing system by IRBM is clear.	
	6.	Information provided by the e-filing system by IRBM is accurate..	
	7.	Information provided by the e-filing system by IRBM is up-to-date.	
	8.	Information provided by the e-filing system by IRBM is reliable.	
	9.	The e-filing system by IRBM maintains data at appropriate level of detail for my purpose.	

### 3.4.6 Mediating Variable - Satisfaction

Satisfaction is the mediating variable which is theoretically extracted to measure its influences on the relationship between perceived usefulness, trust, perceived system quality, perceived information quality and continuance intention. Items for satisfaction variable adapted from Liao et al. (2007). Five point Likert scale labelled from strongly disagree to strongly agree is applied to measure the respondent's expression of satisfaction level towards e-filing system. Table 3.6 indicates four items related to satisfaction.

Table 3.6  
*Measures of satisfaction*

Variable	No.	Items	Source
Satisfaction	1.	My overall experience of the e-filing system by IRBM was very satisfied.	Liao et al. (2007)
	2.	My overall experience of the e-filing system by IRBM was very pleased.	
	3.	My overall experience of the e-filing system by IRBM was very contented.	
	4.	My overall experience of the e-filing system by IRBM was absolutely delighted.	

### 3.4.7 Continuance Intention

In order to measure continuance intention, the items for this variable adapted from Bhattacharjee (2001); Thominathan & Ramayah, (2014). Continuance intention measured using five point Likert scale labelled from strongly disagree to strongly agree. Table 3.7 shows four items to measure continuance intention construct.

Table 3.7

*Measures of continuance intention*

<b>Variable</b>	<b>No.</b>	<b>Items</b>	<b>Source</b>
Continuance intention	1.	I intend to continue using the e-filing system by IRBM rather than discontinue its use.	(Bhattacharjee (2001; Thominathan & Ramayah, 2014)
	2.	My intention is to continue using the e-filing system than use any alternative means (manual tax filing).	
	3.	If I could, I would like to continue using e-filing system as much as possible.	
	4.	I will use the e-filing system by IRBM in the future.	

**3.5 Pilot Study**

A pilot study was conducted to ascertain the reliability and validity of measures (Flynn, Sakakibara, Schroeder, Bates & Flynn, 1990). According to Gay, Mills and Airasian (2006) a pilot test is regarded as a trial in which a small scale of the study is carried out before the actual full scale study. A sample size for a pilot test is usually small, ranging from fifteen to thirty respondents, though it could be more than that (Malhotra, 2008). Therefore, based on above suggestion to have valid and reliable instrument, pilot study were conducted which could help reduction of measurement error to a large extent. Pilot testing of questionnaire were conducted among 65 staff in UUM who are taxpayers and have experience and are current e-filing system users. The questionnaire were distributed and collected personally by the researcher. Of 65 questionnaire distributed, 50 were returned. Table 3.8 illustrates the reliability of each variable, the Cronbach alpha of each variable ranged from 0.788 to 0.897 each exceeding the minimum acceptable level of 0.70 (Hair et al., 2006)

Table 3.8  
*Reliability of Each Variable*

<b>Constructs</b>	<b>Number of Items</b>	<b>Cronbach Alpha</b>
Perceived usefulness	6	0.853
Trust	5	0.893
Perceived system quality	10	0.788
Perceived information quality	9	0.897
Satisfaction	4	0.865
Confirmation	3	0.871
Continuance intention	4	0.881

### **3.6 Data Analysis**

In this stage involves, the collected data were statistically analyzed to see if the hypotheses that were gathered have been supported (Sekaran & Bougie, 2010). The Structural Equation Modeling (SEM) AMOS approach was used to analyse data. The SEM is recognized as a second-generation technique, which allows the simultaneous modelling of relationship among multiple variables (Gefen, Straub & Boudreau, 2000). The use of SEM has certain advantages which makes it ideal for used this technique in this research. Firstly, SEM considered as a comprehensive statistical way of testing hypothesis on the relationship between observed and latent variables (Hoyle, 1995). Other than that, the use of SEM in this study was also rationalized by the fact that SEM performs better than regression for assessment of mediating analysis and the measurement errors in the SEM approach are well controlled because of the simultaneous estimation of all parameters in an SEM model (Iacobucci, Saldanha and Deng, 2007; Nusair and Hua, 2010; Preacher and Hayes, 2004). Furthermore, prior studies also indicated that SEM is an effective second generation multivariate method that is suitable for analyzing results which involved several variables and allows assessment of measurement properties and theoretical relations with multiple relations at the same time in the same analysis (Byrne, 2010; Hair, Back, Babin, & Anderson, 2010; Hau & Marsh, 2004)

There are two stages in the SEM process (Byrne, 2010; Hair et al., 2010). In the first stage, the measurement model is assessed for the adequate validity and unidimensionality by using confirmatory factor analysis (CFA) before move to structural model analysis. Once the measurement model was satisfactory, assessment on the structural model was performed to test the research hypotheses. Figure 3.1 below illustrates flow chart of methodology have been followed in this study. The following sections discussed about descriptive statistics, response bias, data screening, validity and reliability for further ensure model validity.



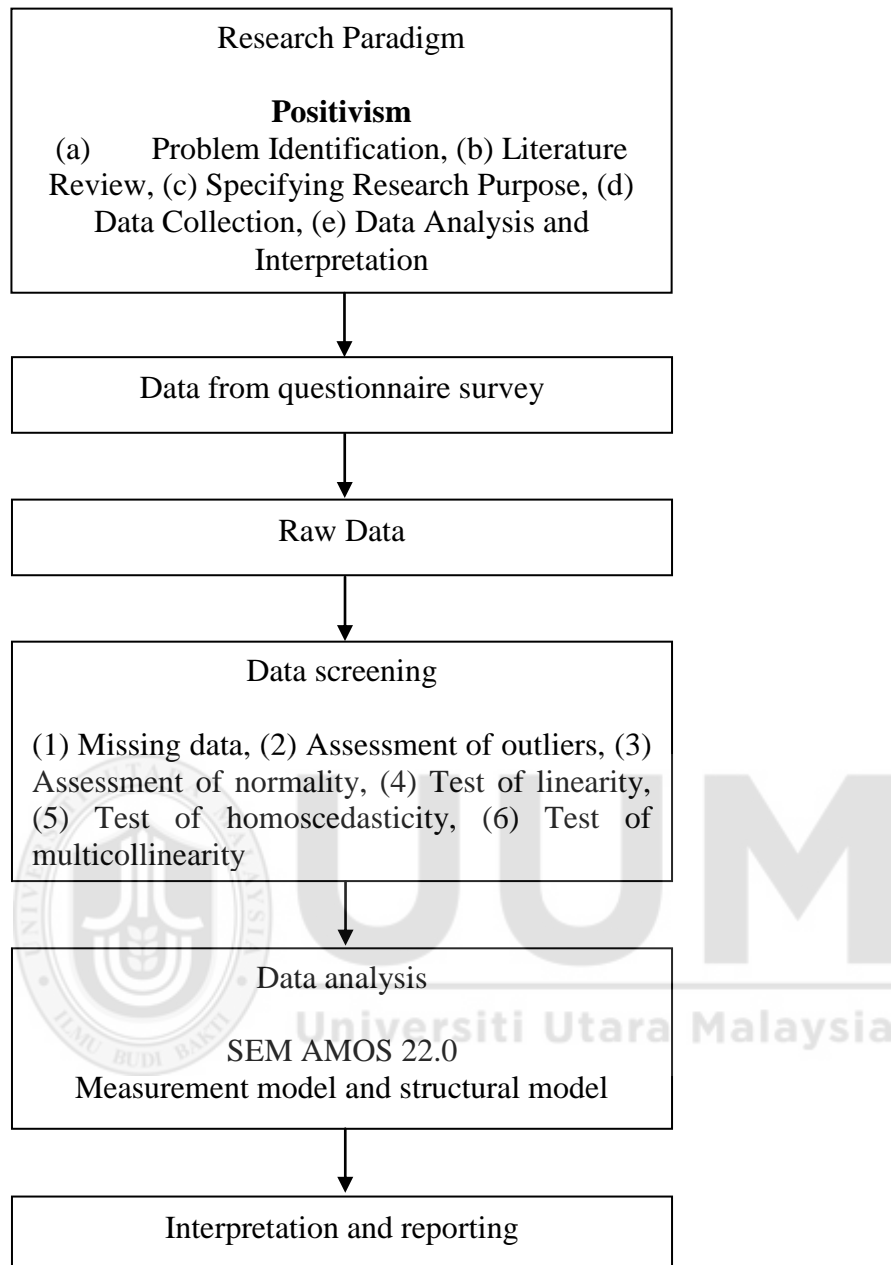


Figure 3.1  
*Flow chart of methodology*

### 3.7 Descriptive Analysis

Descriptive analysis such as maximum, minimum, means, standards deviation variance used to describe the characteristics of sample of study (Sekaran & Bougie, 2010). Respondents' demographic data such as gender, age, race, education level, income, computer use experience and internet use experience analyzed by descriptive



statistics such as frequency and percentage using SPSS 22.0. This gave the researcher a cue of the characteristics of the respondents being examined.

### **3.8 Response Bias**

According to Hair et al., (2006), stated that non-response error may arise if the targeted respondents refuse to partake in filling the questionnaire, or respond to the questionnaires later than expected. Usually, T-test is carried out to compare and observe if there will be any significant difference in the two batches (Sekaran & Bougie, 2011). In order to identify non-response bias, comparison between early responses and late responses t-test was performed for all the variables in the study to detect any possible non-response bias.

### **3.9 Data Screening**

Data screening is one of important task to be done to fulfil the requirement of perform multivariate data analysis. This is because data screening helps researcher to identify any possible violations of the key assumptions regarding the application of multivariate techniques of data analysis (Hair, Money, Samouel & Page, 2007). Data screening is the initial step taken to check the data and to ensure there is no ambiguous data which may have adversative effect on the result. Thus, researcher conducted data screening procedure to access whether the data falls within range or out-of-range value and treat them respectively. The subsection discussed data screening procedures used in this study; missing data, outlier, normality, linearity, homoscedascity and multicollinearity.

### **3.9.1 Missing Data**

Missing value can create major problems during statistical analysis as it can reduce the statistical power and the results from the incomplete data can be biased (Cordeiro, Machas, Neves, 2010). Thus, treatment for missing value given either by delete if it is more than 50 percent of missing data and if the deletion is not going to affect sample size (Hair et al., 2010) or the missing data be replaced (Kline, 1998). Mean substitution is easiest way to execute if the total percentage of missing data is five percentage or less (Little & Rubin, 1987; Raymond 1986; Tabachnick & Fidell, 2007). Thus, to ensure accurate result, mean substitution was used as treatment for missing data.

### **3.9.2 Assessment of Outliers**

After solve of the missing data problems, the next step is outlier detection and deletion. Byrne (2010) described outliers as those cases which have scores that substantially different from all the other given set of data. Outlier cases arise when there is incorrect entering and when observations of the selected respondent is substantially varied most times from others to the extreme, for instance when their combination of values tend to be extreme across other variables (Hair et al., 2010). The identification of outliers in the data is an important task to be done in multivariate data analysis as to ensure the data set is free from outliers. This is because the existence of outliers in the data set affects the normality of the data, since normality assumption is a must in an SEM analysis using maximum likelihood estimation (Allison, 1999). Furthermore, the outlier cases may have a large effect on statistical analysis result. According to Tabachnick and Fidell (2007), the outliers cases can

change the value of score that the researcher would predict for all other cases in the study.

Due to the present study involved multivariate analysis, assessment of multivariate outliers performed. Multivariate outlier is the data have substantially extreme scores in two or more variables (Byrne, 2010). The presence of multivariate outliers assessed through Mahalanobis distance ( $D^2$ ) approach with Chi-square statistics as threshold value. Mahalanobis distance used to identify the distance in standard deviation units between a set of scores for one case and the sample means for all variables (Byrne, 2010). This evaluates the position of particular case from the centroid of the remaining cases. Centroid is the point created by the means of all the variables (Tabachnick & Fidell, 2007). According to Hair et al., (2010), the maximum Mahalanobis distance ( $D^2$ ) exceeds chi-square ( $X^2$ ) value with degrees of freedom equal to the number of predictors and alpha of 0.001, and then there are cases of outlier in the data. The assumption is as follows:

Outlier multivariate $\Rightarrow$ Mahalanobis Distance $>$ Chi-Square value
--

Mahalanobis distance ( $D^2$ ) value greater than chi-square ( $X^2$ ) are considered as outliers and should be excluded from further analysis by permanently deleting them from the data set (Hau & Marsh, 2004; Tabachnick & Fidell, 2013).

### **3.9.3 Assessment of Normality**

Normality is refers as the pattern of distribution of data for an individual metric variable and this is a most important and prerequisite assumption in Multivariate analysis (Hair et al., 2010). The term "normal distribution" is used to describe a

symmetrical of bell-shaped curve (Pallant, 2011) which indicating the majority of the scores fall in the middle and lesser frequencies towards the extreme (left and right). The non-normally distributed variable will have highly skewed and this might influence the relationship between the variable of interest and the significant of the test result obtained (Hulland, 1999). According to Hair et al., (2010), if the variation from the normal distribution is high, then all resulting statistical analyses are invalid. Thus, the assessment of normality of data is very critical in most of the statistical analysis as the distribution of the data will influence results of the data.

There is various ways to assess the normality of data. Usually normality evaluated through either statistical or graphical methods. The most commonly used mechanism of to check normality is skewness and kurtosis statistics (Byrne, 2010; Hair et al., 2010). Skewness refers as measure of symmetry of distribution when compare with a normal distribution (Hair et al., 2010). Positive skewness indicates that distribution shifted to left while negative skewness distribution shifted to right (Hair et al., 2010). Kurtosis refers as peakedness or flatness of distribution of data when compared with a normal distribution (Hair et al., 2010). A positive kurtosis shows that peaked distribution while negative kurtosis indicates about flatter distribution (Hair et al., 2010).

This skewness and kurtosis test is most effective method than other method as this provides direct measures of departures from normality (Mecklin & Mundfrom, 2004). While in graphical method, normality is assessed through histogram residual plots which will indicate the shape of data distribution to an individual continuous variable

and its correspondence to normal distributions. If the assumption is met, the residuals should be normally and independently distributed (Tabachnick & Fidell, 2007).

There is no single agreement regarding the threshold value of skewness and kurtosis to predict and assess the distribution of data whether normal or not. According to Ghiselli, Campbell and Zedeck (1981), it was desirable that the skewness value no more than 2.0 and the kurtosis value no more than 5.0 in absolute values.

#### **3.9.4 Test of Linearity**

The test of linearity is one of important step in regression analysis as one of underlying assumptions of this technique is the relationship between independent variables and dependent variable is linear. While, the existence of non-linear relationship, this will be ignored in the analysis as this will in turn underestimate the actual strength of the relationship (Tabachnick & Fidell, 2007). In this study linearity test was conducted via scatter plot residuals contrary to predict values of each independent variable on dependent variable in SPSS.

#### **3.9.5 Test of Homoscedasticity**

According to Hair et al., (2010) homoscedascity is the assumption that dependent variable shows equal level of variance across the range of predictor variable. Normally, homoscedascity assessed by visual inspection of scatter plot of the regression residuals. This test (via scatter plot of ZPred and ZResid) will reveal any variance of error in analysis across all the levels in the predictor variables (Hair et al., 2006). The occurrence of homoscedasticity implies that variance of error in the analysis is distributed across the same level in the predictor variables. It is depicted

having concentration drawn to the dependent variables indicating equal variance in a traverse level in the independent variable range. However, a non-homoscedasticity accurately can be expressed as a funnel shaped pattern reflecting an increase in error in direct relation to an increase in the criterion variable (Ghozali, Fuad & Seti, 2005).

### **3.9.6 Test of Multicollinearity**

Multicollinearity is the extent to which a variable can be explained by the other variables in the analysis (Hair et al., 2010). This involves the regression correlation among independent variables in the study. Multicollinearity implies that the problem in correlation matrix arises when one independent variable is excessively much correlated with one more independent variable (Hair et al., 2010). According to Tabachnick and Fidell (2007) the multiple regression procedure assumes that no independent or exploratory variable has perfect linear relationship with one another.

The test of multicollinearity in this study was assessed through tolerance value and variance inflation factor (VIF). Tolerance is about the amount of variability of the selected independent variable not explained by the other independent variables (Hair et al., 2010). Variance Inflation Factor (VIF) is about the effect that the other independent variables have on the standard error of a regression coefficient (Hair et al., 2010). The cut-off point for tolerance and VIF are 0.10 and 10 respectively, which suggesting that VIF value close to be 1.00 implies that there is little or no multicollinearity effect and cut-off point 10.00 is regarded as an acceptable VIF.

### **3.10 Validity and reliability**

Validity is a test to of how well an instrument that is developed measures the particular concept it is measuring (Sekaran & Bougie, 2010). Validity informs the researcher that the measurement of concept actually measures the model under study (Bryman & Bell, 2007). Essentially, the types of validity test undertaken in this study are content validity and construct validity. There are two type of factor analysis that are exploratory and confirmatory (Tabachnick and Fidell, 2007).

#### **3.10.1 Exploratory Factor Analysis**

Exploratory factor analysis is often used to assess the interrelationship between sets of variables selected for the study (Pallant, 2011). In this study, exploratory factor analysis carried out using maximum likelihood with promax rotation. Promax rotation was selected because it is quicker, simpler and recommended for larger data set (Hooper, 2012). Factor analysis is conducted on both the endogenous and exogenous variable using SPSS to ascertain if the observed variables really converge together. Performing exploratory factor analysis and confirmatory factor analysis are one of the methods to assess how items converge into components. It can also be demonstrated whether or not standardized loading of items falls between 0.50 and above on their related factors (Fornel & Larcker, 1981)

#### **3.10.2 Confirmatory Factor Analysis**

There are two part of structural equation model analysis, the structural model and measurement model (Hair et al., 2010). Measurement model shows the relationship between manifest variables and the underlying construct (i.e., latent variable). While, the structural model illustrate the causal relationship among the measurement models,

which is generally driven by research hypothesis. The measurement model is estimated before assessment of the structural model and the measures validated using confirmatory factor analysis (CFA). AMOS version 22.0 was chosen as an approach of analysis. Analysis of measurement model is a necessary and sufficient condition before developing structural model (Byrne, 2010; Hair et al., 2006). Confirmatory factor analysis was carried out on individual constructs, exogenous and endogenous variables.

To verify the fitness of the overall model as well as individual models with data, various type of "Goodness-of-Fit" were used. Goodness of fit (GOF) is an essential aspect of SEM analysis because it ascertains the validity of the measurement model (Hair et al., 2006). There are number of alternative measures available to assess the GOF. Each measure is unique, but the measures are commonly classified into three general groups, which cover absolute fit indices, incremental fit indices and parsimony fit indices (Byrne, 2010; Hair et al., 2010). Absolute fit indices measure directly shows how well a specified model replicates the observed data (Drasgow, 1984). The type of fit indices comprises of statistically discrepancy chi square, degree of freedom (df), goodness of fit index (GFI) and root mean square error of approximation (RMSEA). The recommended value for RMSEA is less than 0.08 (Bryne, 2010; Hair at al., 2010), chisq more than 0.05 (Awang, 2012) and GFI is 0.90 and above (Hair et al., 2010). For this study, absolute fit indices of chi-square, degree of freedom and RMSEA reported.

The second model fit index is incremental fit index. This indices assess how well an estimated model fits in relation to other alternative model (Hair et al., 2010).



Incremental fit index consists of Normed Fit Index (NFI), Tucker-Lewis Index (TLI) and comparative fit index (CFI). The recommended value for NFI is 0.90 and above (Hair et al., 2006), TLI is 0.90 and above (Hair et al., 2006) and CFI is 0.90 and above (Bagozzi and Yi, 1988). For the purpose of this study, comparative fit index (CFI) and Tucker-Lewis Index (TLI) reported.

The third model fit index is parsimonious fit index. Parsimony fit indices measures overall goodness of fit representing the degree of model fit per estimated coefficient. In the group of parsimony fit indices consists of adjusted goodness of fit indices (AGFI), parsimony normed fit index (PNFI) (Hair et al., 2010) and chi-square/degree of freedom (Awang, 2012). The recommended value for PNFI is maximum 0.50 (Hair et al., 2010; Tabachnick & Fidell, 2007), AGFI is 0.90 and above (Hair et al., 2006) and chi-square/df is  $\leq 3.00$  (Bagozzi & Yi, 1988). Index of chi-square/degree of freedom was used in this study.

More importantly, according to Hair et al., (2010) the rule of thumb of measurement criteria rely on at least one criterion indices from each category to determine model fit. Using three or four fit indices provides adequate evidence of model fit, because they are often redundant (Hair et al., 2010).

### **3.10.3 Content Validity**

Content validity is to ensure that the measure includes an adequate and representative set of items that tap the concept (Sekaran & Bougie, 2010). In essence, the aim of content validity is to rationally reflect what is supposed to be measured, thus it may be subjected to test by different experts judgement and pre-test (Hair et al., 2006). Thus,

in this study content validity was evaluated by academicians mostly from management field. After questionnaires were reviewed, improvements were made based on several constructive suggestions and recommendations given by these experts. Additionally, each item was checked for its clarity and relevance through pilot study.

#### **3.10.4 Construct Validity**

Construct validity is an indication of the quality of a research instrument to measure what is supposed to (Kumar, 2014). This indicates that the extent to which the designed set of measured items actually measure or reflects the theoretical latent construct (Hair, Black, Babin & Anderson, 2010). There are two types of construct validity; convergent validity and discriminant validity.

##### **a) Convergent Validity**

According to Hair et. al, (2010) convergent validity is the extent to which indicators of specific construct converge or share a high proportion of variance in common. This reflects the high correlation between measures designed to measure the same construct (Byrne, 2010). As following Hair et al. (2010) and Byrne (2010), convergent validity were assessed based on factor loading, average variance extracted (AVE) and composite reliability (CR). Hair et al., (2006) stated that construct with convergent validity should have a high reliable scale. A high reliable scale of a construct indicates the construct measures the same latent concept.

Convergent validity was assessed by examining the Average Variance Extracted (AVE) as suggested by Fornell and Larcker (1981). AVE is about the overall amount

of variance in the manifest variables accounted for by the latent variable should exceed the recommended value of 0.50 (Fornell & Larcker, 1981; Hair et al., 2010). Hair et al., (2010) and Tabachnick and Fidell (1989) acknowledged that a higher variance extracted value occurs when the indicators are truly representative of the latent constructs.

Other than AVE, factor loading and CR is also common indicator of convergent validity in conjunction with SEM. Bagozzi and Yi (1988) suggested that factor loading of 0.50 and above as the acceptable value to demonstrate convergent validity. While, the value greater than 0.60 indicates an acceptable composite reliability (Hair et al., 2010).

#### **b) Discriminant Validity**

Discriminant validity is the extent to which a construct is truly distinct from other constructs (Hair et al., 2010). The discriminant validity for this study were assessed through average variance extracted (AVE) values as suggested by Fornell and Larcker (1981). According to Fornell and Larcker (1981) discriminant validity assessed through compare the square root of AVE with correlation among the latent constructs. If the square root of AVE is higher than the correlation among latent constructs, than the discriminant validity achieved (Fornell & Larcker, 1981).

#### **3.10.5 Reliability**

Reliability is an assessment of the degree of consistency between multiple measurements of a variable (Hair et al., 2010). Reliability can reflect internal consistency of the indicators measuring the given factors (Chen et al., 2009). In this

research, cronbach's alpha and composite reliability used to measure internal consistency of the measurement. Cronbach's alpha value greater than 0.6 (Hair et al., 2006) and 0.7 (Nunnally & Bernstein, 1994) considered internal consistency of the construct met. In the same vein, this study also computed composite reliability (CR) from SEM AMOS. As the measure of internal consistency, the composite reliability fulfils same task as Cronbach Alpha. But composite Reliability is more robust than Cronbach Alpha (Fornell & Larcker, 1981) and most often used in SEM to determine reliability. This is because composite reliability is not influenced by existent items number in each scale and uses items loading extracted from the causal model analyzed (Barroso, Carrion & Roldan, 2010). Other than that, composite reliability provides a much less biased estimate of reliability than Cronbach's alpha because the later assumes all the items contribute equally to its construct without considering the actual contribution of individual loadings (Barclay, Higgins & Thompson, 1995; Gotz, Liehr-Gobbers & Krafft, 2010). To compute composite reliability, this study adopted formula suggested by Hair et al., (2010), where  $\epsilon_i$  is the error variance of each construct. The standardized loading obtained from AMOS output and the error variance is what remains after subtracting the squared standardized loadings from one.

$$CR = \frac{(\sum_{i=1}^n \text{standardized loading})^2}{(\sum_{i=1}^n \text{standardized loading})^2 + (\sum_{i=1}^n \epsilon_i)}$$

### 3.11 Assessment of Structural Model

After assessment of measurement model, the next step is measurement of structural model. The structural model represents the relationship between constructs or latent variables that were hypothesized in the research model. Path analysis with structural equation modelling using AMOS 22.0 software was used to test all the hypothesized

relationships in the structural model. The goodness of fit of the structural model was assessed using several fit indices as explained in previous section.

### **3.11.1 Direct Relationship**

The direct relationships are those hypotheses that have direct link from one latent variable to another and is denoted by an arrow. In testing the direct relationship, the standardized estimate (beta), probability value (p-value) and the critical ratio were used to determine if relationship exists and is significant or not. According to Bryne (2010) and Hair et al. (2010), correlation relationship among construct can be determined by the estimated path coefficients or the p-value, t-value and standard errors.

### **3.11.2 Indirect Relationship**

Indirect relationship represents the effect of independent variables on a dependent variable through a mediating or few mediating variables. The nature of this relationship is made up of a chain of relationship with one or more intervening construct (Baron & Kenny, 1986). According to Hair et al. (2010), mediation involves the comparison of direct effect between two constructs while also including an indirect effect through a third construct. This study examined the mediating effects of satisfaction variable on the perceived usefulness, trust, perceived system quality, perceived information quality and continuance intention.

Bootstrapping technique was used for assessment of mediation analysis. Bootstrapping is a computer-based statistical resampling technique which was firstly developed by Efron (1979). According to Hayes (2009), bootstrapping is a very

common approach, which can be utilized for making assumption about the indirect effect in any mediation models, despite of how complex and how many the paths between the independent and dependent variables. In addition, Preacher and Hayes (2008) confirmed that the results of bootstrapping are more trustworthy and powerful than other method as this requires fewer assumptions. Moreover, according to Bollen and Stine (1990) revealed that the use of bootstrapping method may provides more accurate confidence limits for mediating effect. Besides that, lately bootstrapping has been considered as one of the more powerful and valid methods for mediation testing (Hayes, 2009). Moreover, Preacher and Hayes (2004), Preacher and Hayes (2008) and Hayes (2009) scholars have suggested bootstrapping for mediation analysis in SEM. Thus, bootstrapping considered in mediation analysis in this study.

In this study, bootstrap procedure was used based on 5000 bootstrap samples to derive a 95% bias-corrected bootstrap confidence interval for hypothesis testing. According to Preacher & Hayes (2008), there is no consensus regarding the number of resample (bootstrap samples) should be generated but more is better. However, bootstrap samples should be larger than the number of original samples (Hair, Hult, Ringle and Sarstedt (2014). Hayes (2013) stated that 5,000 to 10,000 bootstrap samples are sufficient in most applications, even increases of bootstrap above 10,000 is typically not necessary because it does not gives significant differences in the estimation. To establish mediation, the value of zero should not appear between the upper and lower bond values (Preacher & Selig, 2012).

### 3.11.3 Squared Multiple Correlation

The squared multiple correlations (SMC) commonly refer as the  $R^2$  regression analysis the variance caused by exogenous variables on endogenous variables. The values represent the ratio of variance explicated through the predictor in the model, in the course of the analysis the SMC for endogenous variable is produced (Hair et al., 2010).

### 3.12 Summary

In conclusion, this chapter discussed about methodology has been used in this research which is essential for the objectives and to test hypotheses of this research. In sum, this research employed cross sectional survey to collect primary data that needed for this research.



## **CHAPTER 4**

### **RESEARCH FINDINGS**

#### **4.0 Introduction**

This section discuss regarding the results from data analysis which was done by use of application of SPSS 22.0 and AMOS 22.0. The section starts with the description about profile of respondents and test of non-response bias. This followed by data screening process which included missing data, outliers, normality, multicollinearity, linearity, homoscedasticity to obtain reliable data for the further analysis. Furthermore, this section also covers the results from exploratory factor analysis, confirmatory factor analysis, measurement and structural model results.

#### **4.1 Response Rate**

In order to achieve maximum success in the data collection for the targeted number of respondents 768 questionnaires were administered. Of these, 475 were returned, yielding a response rate of 62%. The questionnaire were collected in the month of December 2015 and ended in the end of April 2016. On receipt of the 475 questionnaires, seventeen were screen out on physical examination on the grounds of incorrect and incomplete filling leaving the researcher with a total of 458 questionnaires. Furthermore, 33 cases were deleted due to outlier detection from 458 questionnaires. Out of 475 (62%) questionnaires collected, 425 (55%) were useable ones. This rate is considered sufficient based on Sekaran's (2003) argument that a 30 percent response rate is suitable for the survey. Therefore, in the end 425



questionnaires were identified for further analysis. Table 4.1 shows response rate description. .

Table 4.1

*Response Rate*

<b>Description</b>	<b>Total</b>	<b>Percentage</b>
Total number of questionnaires distributed	768	100%
Response Rate	475	61.84%
Effective response rate (usable)	425	55.34%
Questionnaires returned (unusable)	17	2.21%
Questionnaire unusable (after data screening process)	33	4.29%
Unreturned questionnaires	293	38.15%

#### 4.1.1 Demographic Profile of Respondents

The sample of demographic profiles were analysed by the use of frequency distribution in SPSS software. As depicted in Table 4.2, 45.2 percent of the respondents were male while 54.8 percent were female.

While designing the questionnaire, the aspect of age of the respondents was not ignored, the age factor was categorized into four groups to capture all the age groups of taxpayers. As can be observed in (Table 4.2) the participants within age of 25 to 34 years were 21.6 percent or 92 respondents. The respondents whose age falls within the range of 35 to 44 years were 36.9 percent (157), 45 to 54 years were 26.8 percent (114) while the age group of 55 years and above were 14.6 percent (62).

Respondents were also asked to provide details regarding their ethnicity. The analysis revealed that more than half of the total sample, or 60.9 percent (259) of respondents were Malay ethnic, 23.3 percent (99) were Chinese, 15.1 percent (64) were Indians and 0.7 percent (3) were other races such as Sabahans and Sarawakians.

Seemingly, the descriptive statistics of the educational level of respondents revealed that majority of the respondents, about 44.2 percent were bachelor degree holders, while 24.5 percent have read up to master degree. Additionally, 16.0 percent of the participants were doctoral degree holders and the rest of them 15.3 percent were diploma holders.

Other than that, nine categories were classified in touching of income demographic of the respondents. Those whose incomes fall between RM 2000 to RM 2999 were 3.8 percent of respondents, participants with income within RM 3000 to RM 3999 were 13.2 percent, participants with income within RM 4000 to RM 4999 were 17.6 percent, and participants with income within RM 5000 to RM 5999 were 16.5 percent. In addition, those income falls between RM 6000 to RM 6999 were 16.7 percent, participants with income within RM 7000 to RM 7999 were 13.6 percent, participants with income within RM 8000 to RM 8999 were 9.2 percent, participants with income within RM 9000 to RM 9999 were 5.2 percent and lastly 4.2 percent of the respondents fall within income range of RM 10,000 and above.

As for the computer use experience, 9.9 percent of respondents have one to 10 years of experience, 46.4 percent have 11 to 20 years of experience, 30.1 percent have 21 to 30 years of experience and lastly 13.6 percent have 31 years and above computer use experience respectively. Meanwhile, with regards to internet usage experience, 27 respondents have between one to five years of experience (6.4 percent), 117 respondents have between six to ten years of experience (27.5 percent), 167 respondents have between 11 to 15 years of experience (39.3 percent), 59 respondents

have between 16 to 20 years of experience (13.9 percent), while lastly 55 respondents have 21 years and above internet use experience.

Table 4.2  
*Profile of respondents*

<b>Demographics</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Gender	Male	192	45.2
	Female	233	54.8
Age	25-34 years	92	21.6
	35-44 years	157	36.9
	45-54 years	114	26.8
	55 years and above	62	14.6
Race	Malay	259	60.9
	Chinese	99	23.3
	Indians	64	15.1
	Others	3	0.7
Education	Diploma	65	15.3
	Bachelor Degree	188	44.2
	Masters Degree	104	24.5
	Doctoral Degree	68	16.0
Income	RM2000-RM2999	16	3.8
	RM3000-RM3999	56	13.2
	RM4000-RM4999	75	17.6
	RM5000-RM5999	70	16.5
	RM6000-RM6999	71	16.7
	RM7000-RM7999	58	13.6
	RM8000-RM8999	39	9.2
	RM9000-RM9999	22	5.2
	RM10,000 and above	18	4.2
Computer Usage	1-10 years	42	9.9
	11-20 years	197	46.4
	21-30 years	128	30.1
	31 years and above	58	13.6
Internet Usage	1-5 years	27	6.4
	6-10 years	117	27.5
	11-15 years	167	39.3
	16-20 years	59	13.9
	21 years and above	55	12.9

## 4.2 Descriptive Statistics Indicators

Table 4.2 displays the means and standard deviation of all the variables, perceived usefulness, confirmation, trust, perceived system quality, perceived information quality, satisfaction and continuance intention. Confirmation has the least mean (3.4964) and perceived usefulness is shown to have the highest means with (3.8108). Standard deviation values for all variables have values ranging from 0.61178 to 0.81410, being values for satisfaction and perceived usefulness respectively. This in a nutshell demonstrates the presence of satisfactory variability in the set of data.

Table 4.3

*Summary of Descriptive Statistics Indicators of Variables*

<b>Variable Code</b>	<b>Variable Name</b>	<b>Number of Item</b>	<b>Mean</b>	<b>Standard Deviation</b>
PU	Perceived Usefulness	6	3.8108	.81410
CONF	Confirmation	3	3.4964	.70641
TR	Trust	5	3.5886	.73610
PSQ	Perceived System Quality	10	3.6847	.80791
PIQ	Perceived Information Quality	9	3.6870	.65737
SAT	Satisfaction	4	3.6987	.61178
CI	Continuance Intention	4	3.7784	.79334

## 4.3 Non Response Bias

In this study, in order to identify non-response bias, comparison between early responses and late responses was performed by applying extrapolation approach suggested by Armstrong and Overton (1977). Following Armstrong and Overton (1977) approach, the present study divided respondents into two main groups; early respondents and late respondents.

The comparison using a t-test was performed for all the variables in this study to detect any possible non-response bias (refer to Appendix two). The results in Table 4.4 showed that there were no significant differences between early and late responses where the t-test revealed that the equal variance significance values for each of the seven variables were greater than the 0.05 significance level of Levene's test for equality of variances as suggested by Pallant (2010) and Field (2009). Thus, it can be concluded that non-response bias was unlikely to be an issue in this study.

Table 4.4  
*Results of Non-Response Bias*

Variables	Group	N	Mean	SD	Levene's Test for Equality of Variances	
					F	Sig.
PU	Early Response	249	3.8313	0.8307	2.043	0.154
	Late Response	176	3.8636	0.7455		
CONF	Early Response	249	3.4993	0.6820	0.456	0.500
	Late Response	176	3.5436	0.6756		
TR	Early Response	249	3.6048	0.7602	1.422	0.234
	Late Response	176	3.6034	0.6619		
PSQ	Early Response	249	3.6783	0.5841	0.809	0.369
	Late Response	176	3.7358	0.6238		
PIQ	Early Response	249	3.7309	0.7987	0.254	0.614
	Late Response	176	3.6995	0.7814		
SAT	Early Response	249	3.6837	0.6083	0.036	0.849
	Late Response	176	3.7216	0.5981		

Table 4.4 (Continued)

CI	Early Response	249	3.8122	0.7771	0.208	0.649
	Late Response	176	3.7983	0.7395		

#### 4.4 Data screening

Data screening helps researcher to identify any possible violations of the key assumptions regarding the application of multivariate techniques of data analysis (Hair et al., 2007). Prior to data screening process, all the usable questionnaires were coded and entered in SPSS version 22.0. At the same time, all the negatively worded items were reverse coded. The negatively worded items that reverse coded were from perceived system quality variable which are PSQ5, PSQ6 and PSQ7 items. Following data coding and entry, the following preliminary data analyses were performed: treatment of missing data, outliers, normality, linearity, homoscedascity and multicollinearity.

##### 4.4.1 Treatment of Missing Data

The process of examining missing data was performed as missing values have significant effect on further data analysis (Sekaran & Bougie, 2010) and have effect on the generalization results of the study (Hair et al., 2010). Thus, because of negative effect of missing data for the further data analysis process, preventive action was taken. After data was keyed in SPSS 22.0, preliminary descriptive statistics were run to identify the existence of missing data. The researcher recovered that the existence of missing data in this study was seventeen which is less than five percent from total case (see appendix three). In the original SPSS dataset, specifically trust had three missing values, perceived system quality had four missing values, perceived information quality had four missing values, confirmation had one missing value,

satisfaction had two missing values, continuance intention had three missing values and no missing values was found in perceived usefulness. Thus, as to remedy the missing data mean substitution was used as treatment for missing data. This method is adopted because mean substitution is easiest way to execute if the total percentage of missing data is five percentage or less (Little & Rubin, 1987; Raymond 1986; Tabachnick & Fidell, 2007). As overall missing data in this study was not alarming. The next step in data screening is assessment of outliers.

#### **4.4.2 Assessment of Outliers**

The next step in data screening process is assessment of outliers contained in the data set. Initially, the frequency tables were tabulated for all variables using minimum and maximum statistics in order to identify the data which shows substantially extreme SPSS value labels as result of wrong data entry. Thus, through the initial analysis of frequency statistics, identified that there were no any value where found outside the expected range.

In order to use chi-square statistics, new variable with name of response number (respono.) created in SPSS in line with suggestion given by Hair et al., (2010). The "MAH\_1" is based on comparison between chi-square values and Mahalanobis output. The Mahalanobis distance were created by running simple linear regression by selecting respondent number "respono" as dependent variable and the other measurement variables as independent variables. After running of simple linear regression analysis, deletions of multivariate cases were performed.

Thus, based on above multivariate outlier assessment, the Mahalanobis distance of this study covered from 4.365 and 123.406 (refer to appendix four). Based on 41 items of the study, the recommended chi-square value is 73.402 ( $p=0.001$ ) (Hair et al., 2010). The value of  $D^2$  which is higher than  $X^2$  is considered as outlier. By comparing the two Mahalanobis distance and chi-square values, there were thirty three cases were considered as multivariate outliers in this study where the value is greater than  $X^2$  (73.402) (refers to Table 4.5). Thus, there were thirty three cases were found in this category and deleted from the data set because this outlier lists might affect the accuracy of the data analysis technique. As overall, after the deletion of multivariate outliers, 425 usable screened data were identified as final dataset for further analysis.

Table 4.5  
*Result of Mahalanobis distance test*

	Minimum	Maximum	Mean	Std. Dev	N
Mahal. Distance	4.365	123.406	40.910	20.807	458

#### 4.4.3 Assessment of Normality

In this study, the normality assumption was assessed through both skewness and kurtosis at the same time looking at histogram residual plots. The score of skewness and kurtosis values were within range of normal distribution (refer to Appendix five) for all variables. The skewness and kurtosis value for each variable suggests that data approaching the normal distribution and normality assumptions were not violated in the present study. Hence, the skewness and kurtosis for all the variables has met prerequisite of normality test which indicated the data were normal and appropriate for subsequent analysis process.



Other than skewness and kurtosis approach, normality of data also evaluated by using histogram and normality plot for residuals in SPSS and the results of diagram showed that the data distributed normally. The Figure 4.1 shows the distribution of the data in histogram.

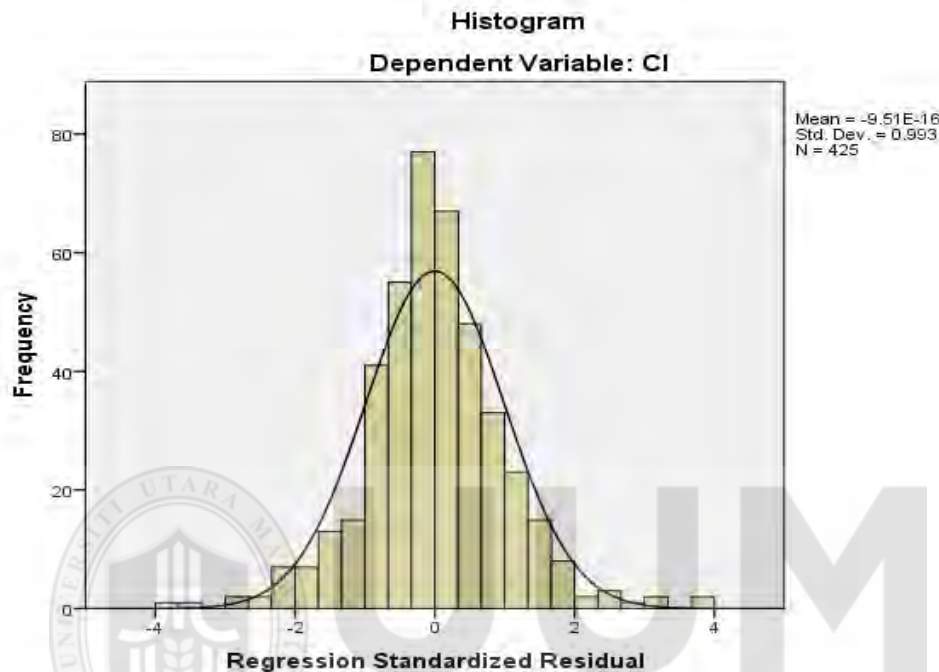


Figure 4.1  
*Normality Assumption*

#### 4.4.4 Test of Linearity

In this study linearity test was conducted via scatter plot residuals contrary to predicted values of each independent variable on dependent variable in SPSS. The result of test of linearity in this study revealed that, the normal P-P plot of standardized regression residuals which shows that there were no trace of non-linearity. This indicated that normal distribution was encountered the assumption of linearity not violated in this study. The P-P plot for dependent variable was presented in Figure 4.2.

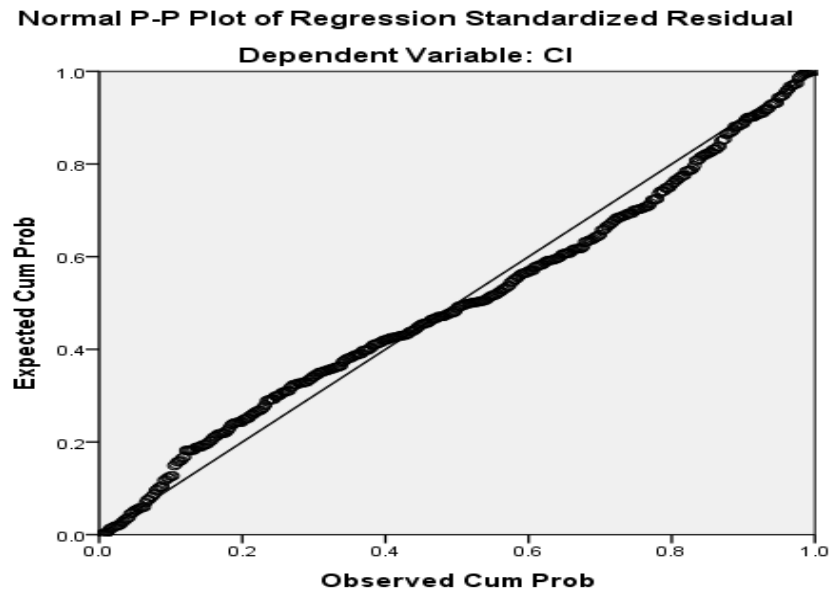


Figure 4.2  
*Linearity Assumption*

#### 4.4.5 Test of Homoscedascity

According to Hair et al., (2010) homoscedascity is the assumption that dependent variable shows equal level of variance across the range of predictor variable. From the output of scatter plot outcome from SPSS (Figure 4.3), it could be concluded that there is homoscedasticity among set of independent variables and the variance of the dependent variable which have been selected in this study. This shows that assumption of homoscedasticity was not violated.

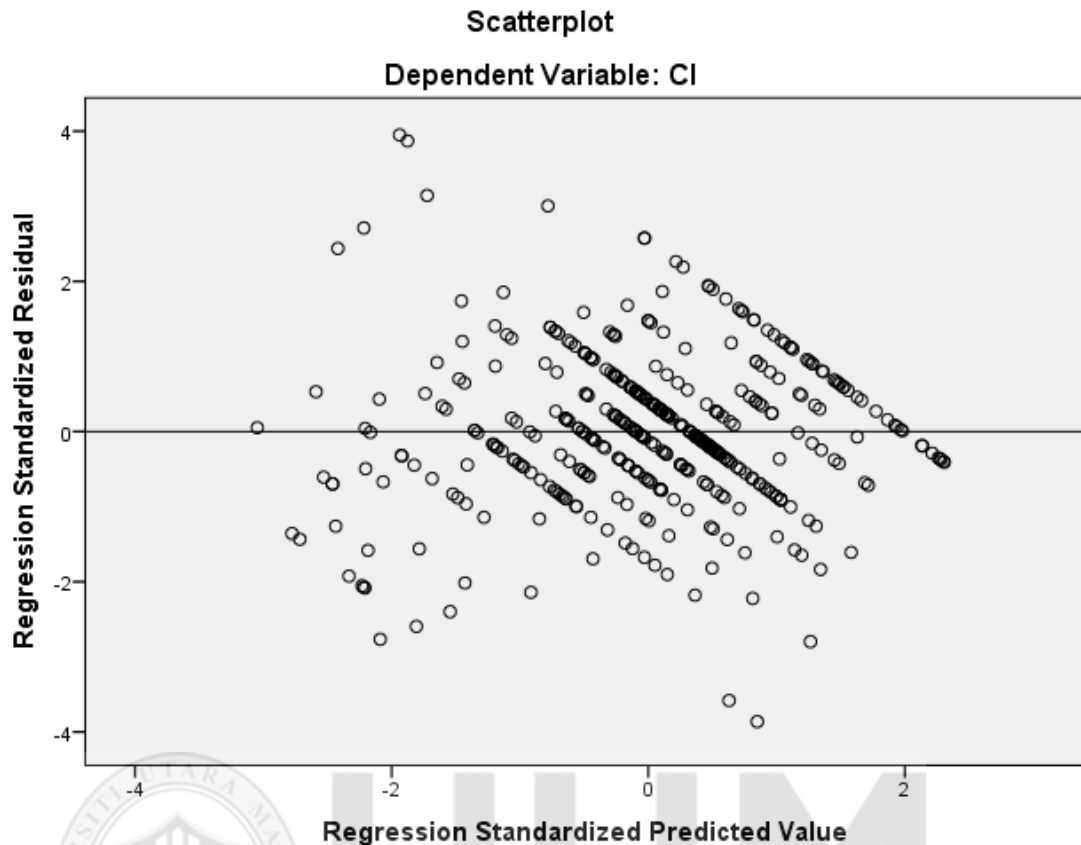


Figure 4.3  
*Homoscedasticity Assumption*

#### 4.4.6 Test of Multicollinearity

The test of multicollinearity in this study was assessed through tolerance value and variance inflation factor (VIF). Tolerance is about the amount of variability of the selected independent variable not explained by the other independent variables (Hair et al., 2010). Variance Inflation Factor (VIF) is about the effect that the other independent variables have on the standard error of a regression coefficient (Hair et al., 2010). The cut-off point for tolerance and VIF are 0.10 and 10 respectively, which suggesting that VIF value close to be 1.00 implies that there is little or no multicollinearity effect and cut-off point 10.00 is regarded as an acceptable VIF.

Table 4.6 shows that multicollinearity statistics for the variables in this study. This multicollinearity statistics highlights that tolerance ranged from 0.432 and 0.967. While VIF values ranged from 1.034 and 2.315. Thus, the result shows that the absence of multicollinearity as the values of tolerance and VIF were under the threshold values and there is no problem of multicollinearity exists between the variables under investigation.

Table 4.6  
*Result of Test of Multicollinearity*

Variables	Collinearity Statistics	
	Tolerance	VIF
Perceived Usefulness (PU)	.551	1.813
Confirmation (CONF)	.432	2.315
Trust (TR)	.434	2.304
Perceived System Quality (PSQ)	.967	1.034
Perceived Information Quality (PIQ)	.489	2.045
Satisfaction (SAT)	.493	2.027

Another way to detect multicollinearity presence is by checking correlation matrix of the independent variables (refer to appendix seven). According to Hair et al., (2010) existence of high correlation can be detected when the value of correlation coefficient value exceed 0.90 and above. Table 4.7 shows the correlation matrix of all variables under investigation. From the Table 4.7, the correlation values between independent variables were sufficiently below the suggested threshold value of 0.90 or more. This indicates that the variables in this study are independent and not highly correlated.

Table 4.7  
Correlation Matrix among Constructs

No.	Variable Name	1	2	3	4	5	6	7
1	CI	1.000						
2	PU	.660	1.000					
3	TR	.646	.622	1.000				
4	PSQ	.027	-.017	.088	1.000			
5	PIQ	.608	.508	.584	.116	1.000		
6	CONF	.673	.565	.643	.011	.627	1.000	
7	SAT	.617	.467	.599	.055	.614	.630	1.000

*Note: CI-Continuance Intention(1), PU- Perceived Usefulness(2), TR -Trust(3), PSQ- Perceived System Quality(4), PIQ- Perceived Information Quality(5), CONF- Confirmation(6), SAT- Satisfaction(7)*

#### 4.5 Validity and Reliability

Moving further, validity and reliability of the construct under study determined. Construct validity refers as the extent to which a combination of measured variable theoretically explains a latent variable which were originally designed to measure (Hair et al., 2010).

##### 4.5.1 Exploratory Factor Analysis

The factor analysis was conducted on both the independent and dependent variables indicate that exogenous variables have values range from 0.634 to 0.936 and from 0.637 to 0.965 for endogenous variables. These values have exceeded the recommended value of 0.5 (Hair et al., 1998) and also above 0.6 which is recommended by (Pallant, 2011). At the start the exogeneous variables have 33 items; two items were removed due to low communality, which makes 31 items remained in exogenous variables.

In addition, the Barlett's test of sphericity was significant at ( $p=0.000$ ), this is an indication of the factorability of the correlation matrix and further confirms that the assumptions of factor analysis were met. It is assumed that when KMO is greater than 0.60 and Barlett's test of Sphericity is large and significant, factorability is then assumed to be met (Pallant, 2011; Tabachnick & Fidell, 2013). The Following were obtained (refer to Appendix eight, nine and ten): Exogenous: Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.943, Approx. Chi-Square = 11631.100,  $df = 465$ ,  $sig = 0.000$ , variance = 35.761%. Endogenous: Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.922, Approx. Chi-Square = 4791.189,  $df = 91$ ,  $sig = 0.000$ , variance = 52.964%.

#### **4.5.2 Confirmatory Factor Analysis**

There are two part of structural equation model analysis, the structural model and measurement model (Hair et al., 2010). The measurement model is estimated before assessment of the structural model and the measures validated using confirmatory factor analysis (CFA). Analysis of measurement model is a necessary and sufficient condition before developing structural model (Byrne, 2010; Hair et al., 2006).

To verify the fitness of the overall model as well as individual models with data, various type of Goodness-of-Fit were used. The following Discrepancy Chi Square (Chisq), Root Mean Square of Error Approximation (RMSEA), degree of freedom (df), Chi Square/Degrees of Freedom (Chisq/df), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), were chosen for this study.

After running the measurement model, factor loading with less than 0.70 were checked. According to Schumacker and Lomax (2010) and Urbach, Smolnik and Riempp (2010), items with factor loading less than 0.70 should be deleted as this not reliable. In addition, according to Hair et al., (2010), it is suggested to have three or more items per construct to ensure the better measurement properties for each construct. The identified abnormal values were deleted to get an acceptable measurement model. Thus, the items PU4 were deleted as the factor loading were below 0.70 before proceed to subsequent data analysis. One of the reasons for deleted particular item is because of low factor loading. The low factor loading may contribute to poor GOF. Therefore, high factor loading is required to get unidimensionality among the measurement items. After deletion the model were re-run again to get new GOF readings. Researcher deleted items which the modification index(MI) was found to be high. Modification indices are an indication of how much the chi-square value of a model would drop, if the parameters were free instead of constrained or in other words by how much the model fit would improve. Therefore, only higher MI was selected. Thus, after process of deletion the measurement model achieved the required and good GOF indices. After the modification by deletion, the visual diagram depicting the model showed in Figure 4.4. Details of output of CFA full model from SEM AMOS illustrated in Figure 4.4 and Table 4.8.

Overall, test of goodness of fit showed satisfactory results. Chi square/ df value of 1.766 was within threshold value ( $\text{Chi-square} \leq 3$ ) (Bagozzi & Yi, 1988), 413 degree of freedom. The results indicated that the overall measurement model was fairly good-fitting model with the fitness information of RMSEA=0.043, CFI=0.970 and TLI=0.967 were within the acceptable threshold values. This fulfilled criteria

recommended by previous researches (Bryne, 2010; Hair et al., 2006; Hair et al., 2010).

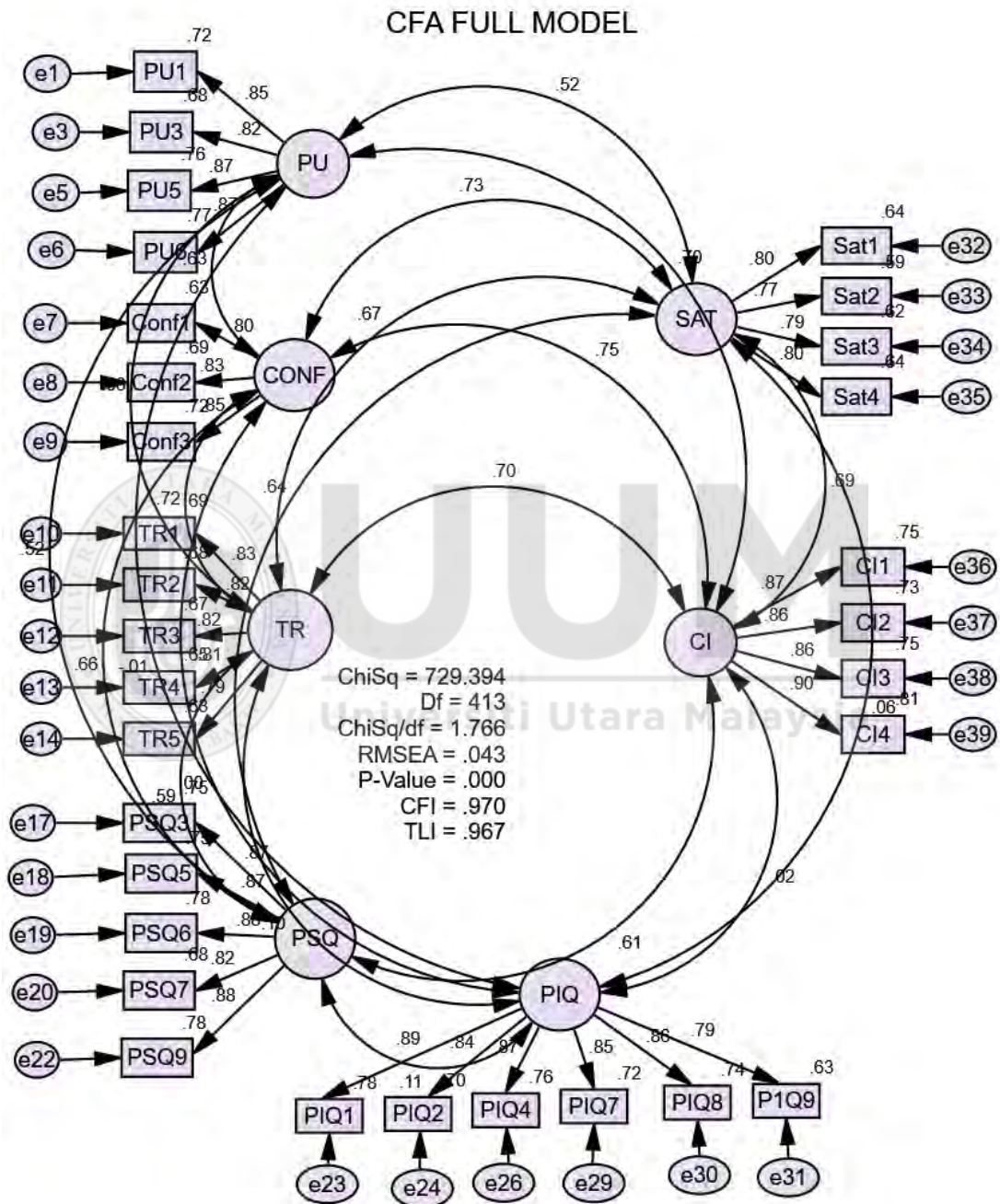


Figure 4.4  
Standardized Estimate of Overall Measurement Model



The researcher also carried out CFA analysis for independent, exogenous, endogenous variables. The results of the outcome presented in the Table 4.8. The output of individual, endogenous, exogenous and full model in Table 4.8 demonstrates compatibility of the model with the data since the indices are in line with the acceptable thresholds (Bagozzi & Yi, 1991; Bryne, 2010; Hair et al., 2010; Hu & Bentler, 1998; Tabachnick & Fidell, 2007) (refer to appendix eleven).



Table 4.8

*Goodness of Fit Summary of CFA of Individual, Exogenous, Endogenous and Combined Measurement Model (N=425)*

<b>Final Model</b>	<b>PU</b>	<b>CONF</b>	<b>TR</b>	<b>PSQ</b>	<b>PIQ</b>	<b>SAT</b>	<b>CI</b>	<b>EXO</b>	<b>ENDO</b>	<b>Combined Measurement Model</b>
Initial Items	6	3	5	8	9	4	4	31	14	41
Items Left	4	3	4	6	6	4	4	27	12	31
Chisq	1.527	0.000	1.946	26.568	18.368	7.381	0.428	644.937	162.758	729.394
Df	1	0	2	8	9	1	1	314	51	413
Chisq/df	1.527	-	0.973	3.321	2.041	7.381	0.428	2.054	3.191	1.766
P-Value	0.217	-	0.378	0.001	0.031	0.007	0.513	0.000	0.000	0.000
RMSEA	0.035	-	0.000	0.074	0.050	0.123	0.000	0.050	0.072	0.043
CFI	1.000	1.000	1.000	0.992	0.996	0.993	1.000	0.964	0.971	0.970
TLI	0.997	-	1.000	0.984	0.993	0.956	1.003	0.959	0.962	0.967

*Note: PU- Perceived Usefulness, CONF-Confirmation, TR -Trust, PSQ- Perceived System Quality, PIQ- Perceived Information Quality, SAT- Satisfaction, CI-Continuance Intention, EXO-Exogenous, ENDO-Endogenous*

After the CFA procedure the measurement model completed, validity and reliability need to assess prior to modelling the structural model (Awang, 2012; Hair et al., 2010). The outcome of CFA in the Table 4.8 indicates that GOF indices achieved the recommended values.

#### **4.5.3 Construct Validity**

Construct validity is refers as extent to which a set of measured variables actually represents the theoretical latent construct those variables are designed to measure where this deals with the accuracy of the measurement (Hair et al., 2010). As subsequently presented, convergent and discriminant validity are subtype of construct validity.

##### **a) Convergent Validity**

Convergent validity is the extent to which indicators of specific construct converge or share a high proportion of variance in common (Hair et al., 2010). The result showed in Table 4.9.

Based on the Table 4.9, factor loading for all variables items are greater than the recommended value of 0.50 (Hair et al., 2010). Factor loading for all variables ranged between 0.766 and 0.900. According to Bagozzi and Yi (1988), factor loading less than 0.700 indicates a weak convergent validity exists. But, based on outcome of factor loading in Table 4.9, this indicates that all the factor loadings are exceed the threshold values of 0.700 and all the loadings are statistically significant at 0.05, were this shows that criteria of convergent validity not violated.

Table 4.9  
*Convergent Validity*

<b>Model Construct</b>	<b>Items</b>	<b>Std.Loadings</b>	<b>AVE</b>	<b>CR</b>
Perceived Usefulness	PU1	0.851	0.731	0.916
	PU3	0.822		
	PU5	0.870		
	PU6	0.875		
Confirmation	CONF1	0.796	0.681	0.865
	CONF2	0.832		
	CONF3	0.847		
Trust	TR1	0.833	0.664	0.908
	TR2	0.823		
	TR3	0.816		
	TR4	0.808		
	TR5	0.793		
Perceived System Quality	PSQ3	0.868	0.747	0.937
	PSQ5	0.868		
	PSQ6	0.881		
	PSQ7	0.822		
	PSQ9	0.882		
Perceived Information Quality	PIQ1	0.886	0.722	0.940
	PIQ2	0.838		
	PIQ4	0.871		
	PIQ7	0.848		
	PIQ8	0.862		
	PIQ9	0.791		
Satisfaction	SAT1	0.801	0.622	0.868
	SAT2	0.766		
	SAT3	0.786		
	SAT4	0.802		
Continuance Intention	CI1	0.868	0.760	0.927
	CI2	0.856		
	CI3	0.863		
	CI4	0.900		

Convergent validity was assessed by examining the Average Variance Extracted (AVE) as suggested by Fornell and Larcker (1981). As with the following above recommendation, the AVE for this study is range from 0.622 and 0.760. The values of AVE for all the respective variables are higher than the threshold value which exhibited high loadings ( $>0.50$ ), indicating adequate convergent validity.

Additionally, in this study also calculated composite reliability (CR) for all the variables to access the internal consistency. Composite reliability index uses factor loading and error variance to test internal consistency of the items of latent construct and to see how well the items explained the latent construct (Hair et al., 2010). In addition, Hair et al., (2010) suggested that the threshold value of composite reliability is minimum 0.70. From the Table 4.9, can identify that all the CR values for all the variables are achieved the threshold suggested by Bagozzi and Yi (1988) which ranged from 0.865 and 0.940. Thus, this can be concluding that the reliability values for all the variables are acceptable and satisfied the requirement.

#### **b) Discriminant Validity**

Discriminant validity assessed through compare the square root of AVE with correlation among the latent constructs (Fornell and Larcker, 1981). Discriminant validity results were presented in Table 4.10. In the Table 4.10, the correlations among latent constructs were compared with the square root of the average variances extracted (values in bold). Based on the Table 4.10 the researcher identified that the square root of average variance extracted higher than the intercorrelations values of among the latent constructs, where this reveals the adequacy of discriminant validity in this study.

Table 4.10  
*Discriminant Validity of Overall Measurement Model*

	PU	CONF	TR	PSQ	PIQ	SAT	CI
PU	<b>0.855</b>						
CONF	0.627	<b>0.825</b>					
TR	0.680	0.721	<b>0.814</b>				
PSQ	0.516	0.658	0.594	<b>0.864</b>			
PIQ	-0.015	-0.003	0.100	0.105	<b>0.850</b>		
SAT	0.525	0.728	0.673	0.635	0.059	<b>0.789</b>	
CI	0.704	0.753	0.702	0.612	0.022	0.686	<b>0.872</b>

Note: Diagonal values (bolded) are square root of the AVE, whereas the off-diagonals are correlations

#### 4.5.4 Reliability Analysis

Reliability is an assessment of the degree of consistency between multiple measurements of a variable (Hair et al., 2010). Based on the Table 4.11, Cronbach Alpha values in this study were above 0.6 (Hair et al., 2006) and 0.7 (Nunnally & Bernstein, 1994) where this indicates that the internal consistency of the construct met. This reveals that the items are adequate measure the constructs it was designed for. The output of Cronbach Alpha is ranged from 0.862 and 0.939.

In the same vein, this study also computed composite reliability (CR) from SEM AMOS. Based on the Table 4.11, the values of composite reliability for all the variables ranged from 0.865 and 0.940, were this exceeding the recommendation value of 0.70 or more by most of the authors (Bagozzi & Yi, 1988; Fornall & Larcker, 1981; Hair et al., 2010). Thus, the result of Cronbach Alpha and composite reliability

in this study suggesting that adequate internal consistency reliability and the measurement is reliable.

Table 4.11  
*Results of Reliability Test*

<b>Constructs</b>	<b>Measurement items</b>	<b>Number of Items</b>	<b>Cronbach Alpha</b>	<b>Composite Reliability</b>
Perceived Usefulness	PU1, PU3, PU5, PU6	4	0.915	0.916
Confirmation	CONF1, CONF2, CONF3	3	0.862	0.865
Trust	TR1, TR2, TR3, TR4, TR5	5	0.908	0.908
Perceived System Quality	PSQ3, PSQ5, PSQ6, PSQ7, PSQ9	5	0.936	0.937
Perceived Information Quality	PIQ1, PIQ2, PIQ4, PIQ7, PIQ8, PIQ9	6	0.939	0.940
Satisfaction	SAT1, SAT2, SAT3, SAT4	4	0.868	0.868
Continuance Intention	CI1, CI2, CI3, CI4	4	0.926	0.927

#### **4.6 Assessment of Structural Model**

After assessment of measurement model, the next step is involves the analysis of structural model. In the next section provided details discussion of empirical testing of the hypothesized model. The results of the proposed hypotheses were shown in Table 4.12.

##### **4.6.1 Direct Relationship**

This section discussed about the outcome of the direct hypothesized relationship. The results of the direct relationship are presented in Table 4.12. (refer to appendix twelve).

Table 4.12  
Direct Effect

Hypotheses	Construct	Standardized Estimate	S.E.	C.R.	P-Value	Decision
H1	PU->CI	0.462	0.039	8.014	***	Supported
H2	TR->CI	0.200	0.053	3.118	0.002	Supported
H3	PSQ->CI	0.159	0.046	2.857	0.004	Supported
H4	PIQ->CI	-0.019	0.030	-0.468	0.640	Not supported
H5	SAT->CI	0.330	0.069	5.731	***	Supported
H6	PU->SAT	-0.047	0.039	-0.681	0.496	Not supported
H7	TR->SAT	0.330	0.048	4.718	***	Supported
H8	PSQ->SAT	0.308	0.042	5.031	***	Supported
H9	PIQ->SAT	0.012	0.029	0.251	0.802	Not supported
H10	CONF->SAT	0.514	0.053	6.360	***	Supported
H11	CONF->PU	0.632	0.059	12.453	***	Supported

\*p<0.05, \*\*p<0.01, \*\*\*p<0.001

As overall, there are eleven direct hypotheses. From the Table 4.12, the direct hypothesized relationship indicates that only eight hypotheses supported while three hypotheses not supported. The possible reasons of the supported and non-supported relationship were elaborated on accordingly based on results.



**H1: There is a positive relationship between perceived usefulness and continuance intention of tax e-filing system.**

Based on the outcome of the analysis from AMOS, the relationship between perceived usefulness and continuance intention statistically significant ( $\beta = 0.462$ ;  $CR = 8.014$ ,  $p = .000$ ) (refer to Table 4.12). Therefore, the hypothesis is supported.

**H2: There is a positive relationship between trust and continuance intention of tax e-filing system**

The finding here shows that trust have positive and significant influence on continuance intention, thus the hypothesis is supported ( $\beta = 0.200$ ,  $CR = 3.118$ ,  $p = 0.002$ ) (refer to Table 4.12).

**H3: There is a positive relationship between perceived system quality and continuance intention of tax e-filing system.**

In the third hypothesis, it was stated that there is positive relationship between perceived system quality and continuance intention. The relationship between the two variables found to be statistically significant as  $\beta = 0.159$ ,  $CR = 2.857$  and  $p = 0.004$ . So the hypothesis is supported (refer to Table 4.12).

**H4: There is positive relationship between perceived information quality and continuance intention of tax e-filing system.**

This is fourth hypothesis stated that in this study, the hypothesis is not accepted, explaining that perceived information quality and continuance intention have no positive relationship in this study. The outcome of this study is statistically shown as

( $\beta = -0.019$ , CR= -0.468;  $p = 0.640$ ) (refer to Table 4.12). Thus, this hypothesis is not supported.

**H5: There is positive relationship between satisfaction and continuance intention of tax e-filing system.**

As depicted here, satisfaction and continuance intention has significant relationship, this is confirmed by the fact that criteria were achieved ( $\beta = 0.330$ , CR= 5.731,  $p = .000$ ) (refer to Table 4.12) hereby the hypothesis is supported.

**H6: There is a positive relationship between perceived usefulness and satisfaction**

There is unexpected findings was found that ( $\beta = -0.047$ , CR= -0.681,  $p = 0.496$ ) (refer to Table 4.12); which clearly indicates that the hypothesis is not supported.

**H7: There is positive relationship between trust and satisfaction**

This relationship is significant as can be observed from these values ( $\beta = 0.330$ , CR= 4.718,  $p = .000$ ) therefore the hypothesis is supported (refer to Table 4.12).

**H8: There is a positive relationship between perceived system quality and satisfaction**

The eighth hypothesis for this study is equally supported ( $\beta = 0.308$ , CR=5.031,  $p = .000$ ) by inference drawn from the values produced from the AMOS analysis (refer to Table 4.12).

**H9: There is positive relationship between perceived information quality and satisfaction**

This hypothesis determines the relationship between perceived information quality and satisfaction, purporting that the relationship will be positive. However it turned out to be insignificant, hence the hypothesis is not supported ( $\beta = 0.012$ ,  $CR = 0.251$ ,  $p = 0.802$ ) (Refer to Table 4.12).

**H10: There is positive relationship between confirmation and satisfaction**

There is also positive relationship between the two construct of confirmation and satisfaction as  $\beta = 0.514$ ,  $CR = 6.360$  and  $p = .000$  (refer to Table 4.12). Thus, this hypothesis is supported.

**H11: There is positive relationship between confirmation and perceived usefulness**

As the case is, this relationship turned out to be positive as postulated, producing significantly high beta, CR and p-value ( $\beta = 0.632$ ,  $CR = 12.453$ ,  $p = .000$ ) (refer to Table 4.12). The hypothesis is accordingly supported.

#### **4.6.2 Indirect Relationship**

Indirect relationship represents the effect of independent variables on a dependent variable through a mediating or few mediating variables. To get mediation effect bootstrapping method was used. The proposed model shows that there is one mediator between perceived usefulness, trust, perceived system quality and perceived information quality. This study examines the mediating effects of satisfaction variables on the perceived usefulness, trust, perceived system quality, perceived

information quality and continuance intention. The results obtained from the mediating analysis suggested only significant mediating effect of satisfaction on trust and perceived system quality but the mediating effect of satisfaction on perceived usefulness and perceived information quality not supported (refer to Table 4.13). From the four mediating effect hypotheses only two were supported in this study.

**H12: Satisfaction mediates the relationship between perceived usefulness and continuance intention of tax e-filing system.**

This hypothesis which states that satisfaction mediates between perceived usefulness and continuance intention. From the output of mediation analysis in Table 4.13, identified that satisfaction is not a mediator of the relationship between perceived usefulness and continuance intention. This is because the upper and lower bond ( $L=-0.070$ ,  $U=0.022$ ) of the bias corrected interval values are sprawled beyond zero in between.

**H13: Satisfaction mediates the relationship between trust and continuance intention of tax e-filing system.**

This hypothesis is turned out to be supported with values of ( $\beta=0.109$ ,  $p=0.000$ ); boot ( $L=0.060$ ,  $U=0.186$ ). Both values in same direction where this range does not contain zero in between, thus confirming and supporting this hypothesis. This leads to conclusion that the total effect of trust on the continuance intention in the presence of satisfaction as mediating variable is significant (refer to Table 4.13).

**H14: Satisfaction mediates the relationship between perceived system quality and continuance intention of tax e-filing system.**

This hypothesis determines the mediating effect of satisfaction between perceived system quality and continuance intention. The results of bootstrapping in Table 4.13 can identified that mediating effect is supported with values of ( $\beta=0.102$ ,  $p=0.000$ ) boot (L=0.058, U=0.166). Both values in same direction as these values do not overlap a zero in between. Thus, this result implies that satisfaction is a mediator of the relationship between perceived system quality and continuance intention.

**H15: Satisfaction mediates the relationship between perceived information quality and continuance intention of tax e-filing system.**

This hypothesis stated that satisfaction mediates between perceived information quality and continuance intention. From the output of mediation analysis in Table 4.13, identified that satisfaction is not mediate the relationship between perceived information quality and continuance intention. This is because the upper and lower bonds of the bias corrected interval values are sprawled beyond zero in between. This reveals that satisfaction does not have mediating effect on the relationship between perceived information quality and continuance intention.

Table 4.13  
*Indirect Effect*

	Hypothesized Path	Est.	S.E.	Bias Corrected		P-value	t-value	Decision
				Lower	Upper			
H12	PU→Sat→CI	-0.016	0.028	-0.070	0.022	0.459	-0.393	Not supported
H13	TR→Sat→CI	0.109	0.037	0.060	0.186	0.000	2.432	Supported
H13	PSQ→Sat→CI	0.102	0.032	0.058	0.166	0.000	2.625	Supported
H14	PIQ→Sat→CI	0.004	0.018	-0.025	0.032	0.849	0.617	Not Supported

#### 4.6.3 Summary of Hypothesis Testing

Table 4.14 summarized the results of all hypotheses including main and mediating effects were tested in this study.

Table 4.14  
*Summary of Hypotheses*

Hypotheses	Results
H1 There is a positive relationship between perceived usefulness and continuance intention of tax e-filing system	Supported
H2 There is a positive relationship between trust and continuance intention of tax e-filing system	Supported
H3 There is a positive relationship between perceived system quality and continuance intention of tax e-filing system	Supported

Table 4.14 (Continued)

H4	There is positive relationship between perceived information quality and continuance intention of tax e-filing system	Not supported
H5	There is positive relationship between satisfaction and continuance intention of tax e-filing system	Supported
H6	There is a positive relationship between perceived usefulness and satisfaction	Not Supported
H7	There is positive relationship between trust and satisfaction	Supported
H8	There is a positive relationship between perceived system quality and satisfaction	Supported
H9	There is positive relationship between perceived information quality and satisfaction	Not supported
H10	There is positive relationship between confirmation and satisfaction	Supported
H11	There is positive relationship between confirmation and perceived usefulness	Supported
H12	Satisfaction mediates the relationship between perceived usefulness and continuance intention of tax e-filing system.	Not supported
H13	Satisfaction mediates the relationship between trust and continuance intention of tax e-filing system.	Supported

Table 4.14 (Continued)

H14	Satisfaction mediates the relationship between perceived system quality and continuance intention of tax e-filing system.	Supported
H15	Satisfaction mediates the relationship between perceived information quality and continuance intention of tax e-filing system	Not supported

#### 4.6.4 Goodness of Fit (GoF)

The goodness of fit for the structural model in this study was assessed using several fit indices. The model has a good fit with data based on assessment criteria such as comparative fit index (CFI), Tucker Lewis index (TLI), chi-square/degree of freedom, root mean square error of approximation (RMSEA) (refer to Table 4.15).

Table 4.15  
*Summary of Fit Indices for the Structural Model*

Index	Observed Value	Recommended Value	Source
ChiSq/df	3.000	$\leq 3.00$	Bagozzi & Yi, 1988
RMSEA	0.069	$\leq 0.08$	Bryne, 2010; Hair et al., 2010
CFI	0.921	$\geq 0.90$	Bagozzi and Yi, 1988
TLI	0.913	$\geq 0.90$	Hair et al., 2006

The results of hypothesized and modified structural model are as shown in Figure 4.5 and Figure 4.6. Previously, before modification of the hypothesized model, RMSEA results of 0.069 and chi-square statistics 2100.226, CFI statistics 0.903 did support the



structural model fitting the data. However, Chisq/df statistics 3.039 and TLI of 0.896 respectively did not support the model.

After modification, the results of TLI and Chisq/df indices indicated that the modified model adequately fitted the data. The fit indices for TLI scores round out 0.90 and Chisq/df achieved threshold value of 3.000 and supported the model. Meanwhile, RMSEA confirmed that the structural model had adequately fitted the data with value of 0.069.

Overall, the model explained 54.8% of the variance in continuance intention, 44.0% variance in satisfaction and 40.0% variance in perceived usefulness.



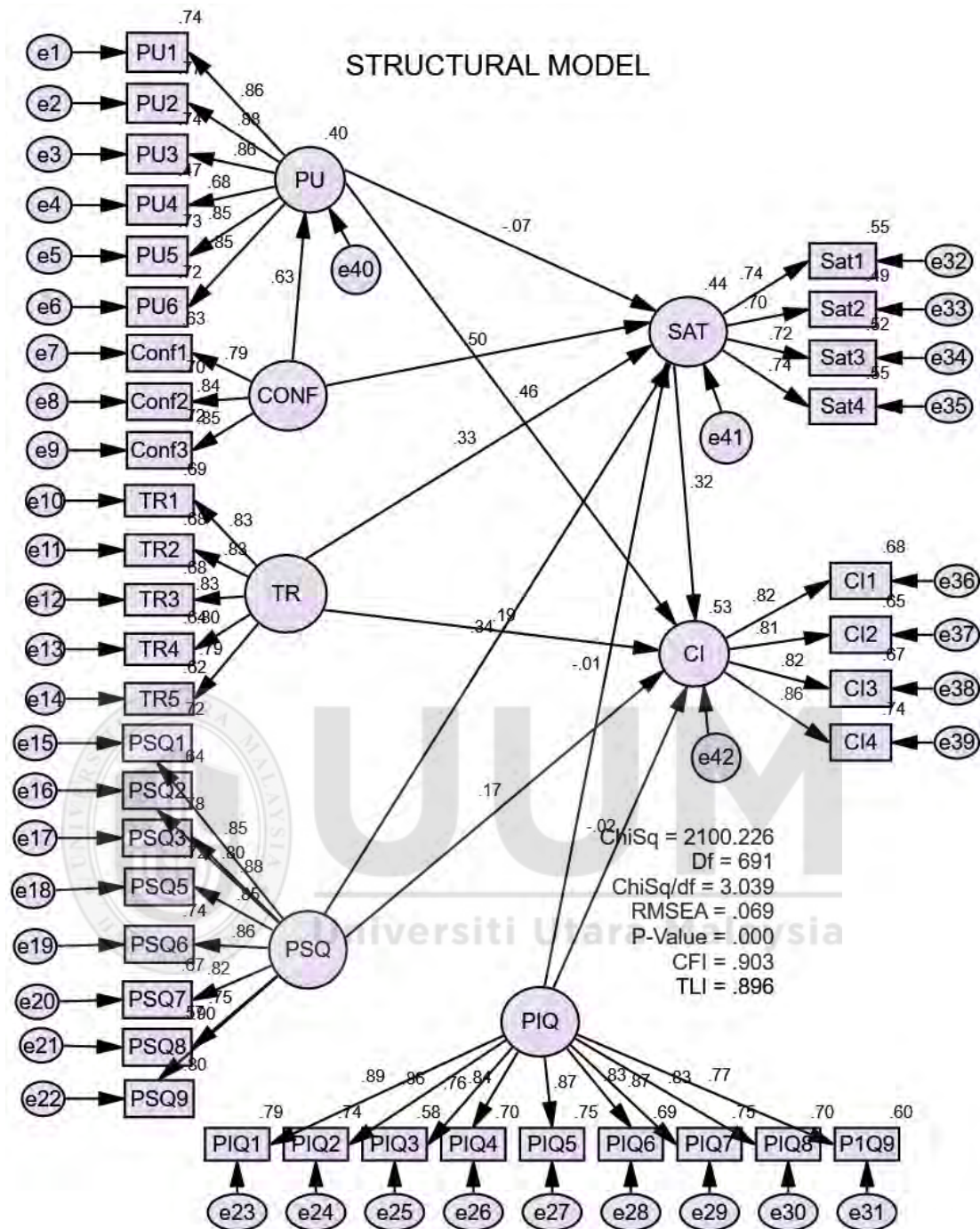


Figure 4.5  
Hypothesized Structural Model

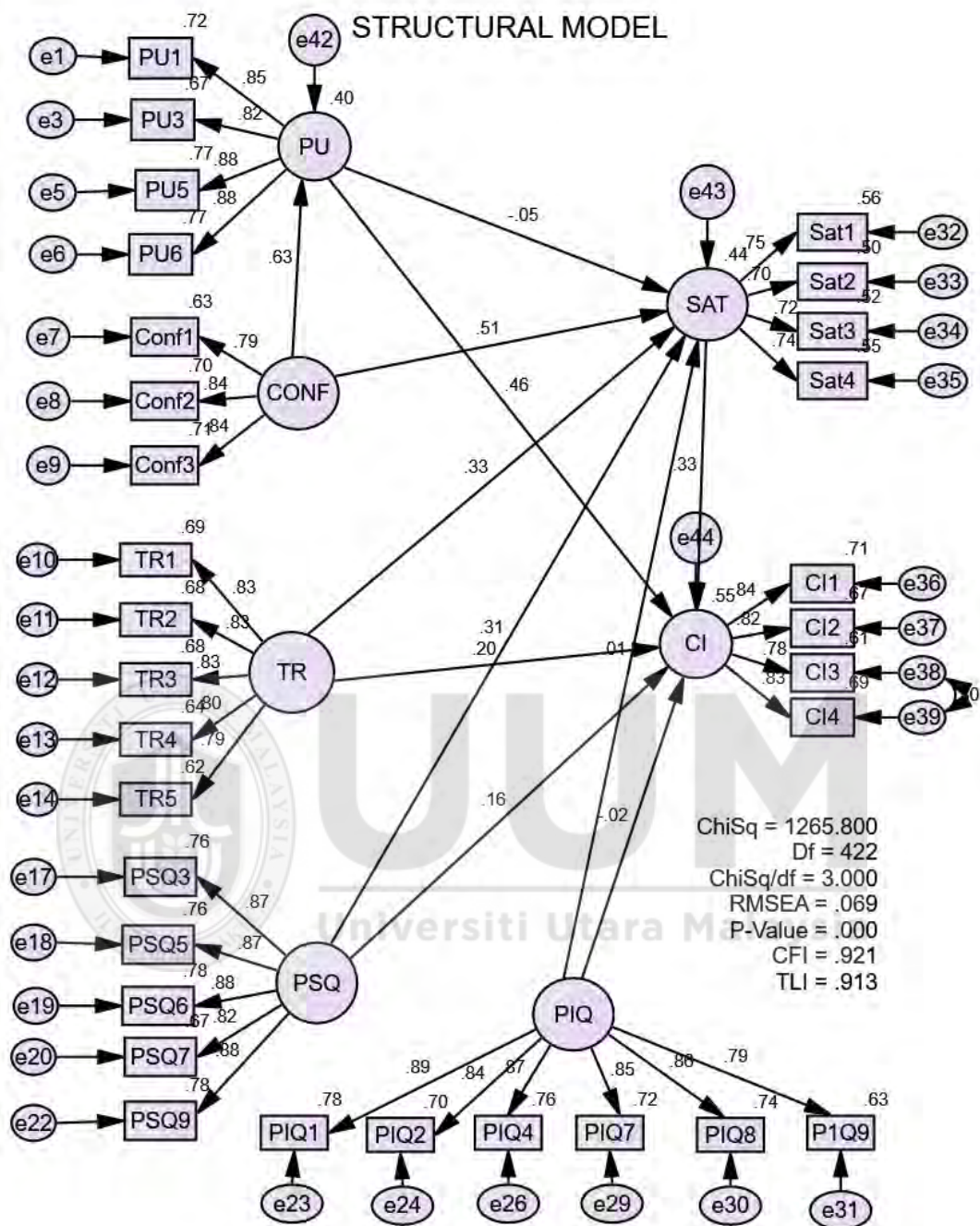


Figure 4.6  
*Modified Structural Model*

#### 4.6.5 Squared Multiple Correlations (SMC)

The structural model is based on the hypotheses developed through extensive literatures review, and call for the eventual testing of such hypotheses to see their

statistical significance. The squared multiple correlations (SMC) commonly refer as the  $R^2$  regression analysis the variance caused by exogenous variables on endogenous variables. The structural model shows the values of squared multiple correlations for the endogenous variables: perceived usefulness, satisfaction and continuance intention. Table 4.16 presents the  $r^2$  values for three endogenous variables in this study. SMC value of the endogenous variables are: perceived usefulness, 40.0 percent, satisfaction, 44.0 percent and continuance intention 54.8 percent. The value of 0.400 for perceived usefulness indicates that 40% of variance in perceived usefulness is explained by confirmation. Meanwhile the value of 0.440 explaining 44% of the variance in satisfaction is explained by perceived usefulness, trust, perceived system quality, perceived information quality and confirmation. Moreover, the value of 0.548 for continuance intention indicates that 54.8% variance in continuance intention is explained by perceived usefulness, trust, perceived system quality, perceived information quality and satisfaction.

Table 4.16  
*Squared Multiple Correlation ( $r^2$ ) for Endogenous Variables*

	Estimate
Perceived Usefulness	0.400
Satisfaction	0.440
Continuance Intention	0.548

#### 4.7 Summary

This chapter summarised the findings of demographic details and hypothesized relationships. The chapter started with demographic details of respondents and

response bias and it indicates that there is no statistically significance difference between early and late responses. The next, the outcome of EFA, CFA, normality, linearity and homoscedasticity were presented which indicated that how the data is free from random errors. Additionally, the chapter continuous with hypothesized relationships; the direct and indirect effect relationships exists in this study. The chapter ends with the summary of the final generated model and SMC.



## **CHAPTER 5**

### **DISCUSSION AND CONCLUSION**

#### **5.0 Introduction**

This chapter discussed the key findings of this study and highlighted contribution of this study. This chapter also presented the limitation of the study and as well suggested the recommendation for future research ventures. Finally, this chapter summarized and concluded the study.

#### **5.1 Discussion of findings**

The following section discussed the findings of the study which obtained from the outcome of SEM AMOS analysis output in chapter four. This includes the discussion about direct relationships of the variables and indirect relationships with the mediating effect of satisfaction.

#### **5.2 The relationship between perceived usefulness and continuance intention of tax e-filing system**

Based on the outcome of the generated model, the path of perceived usefulness and continuance intention is significant and positive. The hypothesis is supported. The finding in line with findings of other authors (Akter et al., 2012; Al-Maghrabi & Dennis, 2011; Ambali, 2009; Bahrani, Yusof & Rahim, 2015; Belanche et al., 2014; Chong, 2013; Hoehle et al., 2012; Hu et al., 2009; Islam, 2012; Jiang, 2011; Kang et al., 2009; Lee, 2010; Lee & Kwon, 2011; Li & Liu, 2014; Lim et al., 2013; Limayem & Cheung, 2011; Thominathan & Ramayah, 2014; Thong et al., 2006; Wangpipatwong et al., 2008; Zhou, 2011) in various context of technologies such as

e-government, e-filing, internet banking, online shopping, online travel services, e-learning, mobile commerce and mobile health service. For instance, Belanche et al., (2014) found that perceived usefulness related positively on continuance intention among citizens who used the e-services for income tax return in Spain. Jiang (2011) also identified that perceived usefulness as one of the main antecedent which influences continuance intention of e-government portal in China. Furthermore, Bahrani, Yusof and Rahim (2015) conducted a study to identify the relationship between the e-government web based application adoption and citizens' continuance intention. The author found that there is significant relationship between perceived usefulness and citizens' continuance intention among employees from three private organizations in Southern Malaysia using e-government web-based applications. Other than that, Hamid, Razak, Bakar and Abdullah (2016) also found that perceived usefulness positively affect continuance intention to use e-government services in Malaysia. While, Lee (2010); Limayem and Cheung (2011) and Ho (2010) found that perceived usefulness have significant influence on continuance intention of e-learning system platform. Bhattacharjee (2001) also found that perceived usefulness have positive significant effect on continuance intention. As overall, this reveals that perceived usefulness was found one of important predictor of continuance intention in most of online technologies.

Simultaneously, it has been proven that perceived usefulness also have significant influence on continuance intention of tax e-filing system in the context of this research. This finding has buttressed the fact that respondents of this study have shown that they are positive about usefulness of tax e-filing system. As such, the significant relationship between perceived usefulness and continuance intention

reveals that e-filing system as a voluntary usage, compare with the manual tax submission method e-filing system is very useful, enables the taxpayers to accomplish submission of tax task more quickly, easier, efficiently and provides users with desires results when they access the system online compare with manual submission of tax plays more significant importance on user's intention to continuously use e-filing system. This shows that the taxpayers realized that using tax e-filing system enhances their benefits they gained through the system than traditional manual method of tax submission, which influences their continuous usage. As the e-filing system voluntary in Malaysia, the usefulness of system is important for encourage voluntarily use e-filing for tax return (Azmi and Bee, 2010). This shows that the perceived benefits gained from the use of the e-filing system that perceived by the taxpayers being one of key reason of taxpayers continuance intention of tax e-filing system. If the taxpayers find it difficulties in using the system after exploring the system, it might affect the user's decision to continue use of tax e-filing system in future. Any technology developed for enhancing service interface between government and citizen should be useful in term of time and cost, less complicated and convenient than manual system, otherwise the system will be neglected in long run (Ambali, 2009). This is because, citizen will value e-government services which could perform well and the system function as what user intended to do (Hussein et al., 2011). Thus, when the users have good experience with the usage of tax e-filing system in term of usefulness of the system this in tend will influence intention to continually use this online service.

As overall, users of the e-filing system tend to evaluate a technology based on usefulness of the service or technology itself to the users. Perception of usefulness of



an e-government service will enhance users' level of continuance intention on e-government (Wangpipatwong et al., 2008). Therefore, the government have to take consideration that, the citizens will continue use e-filing system specifically and e-government services generally that provides those advantages and benefits to accomplish tax task compared with manual tax submission method. Otherwise, the users of e-government will neglect the technology in future if the technology itself do not have any enhancement or differences than traditional manual system (Ambali, 2009). Thus, IRBM and government time to time especially near tax period should carry out campaigns to enhance the users' perception of about the usefulness and the worthy of this service (in terms of time, convenience, cost saving, effectiveness) and at the same time promote benefits of e-filing system through mass media or social media.

### **5.3 The relationship between trust and continuance intention of tax e-filing system**

The research proposed that there is positive relationship between trust and continuance intention of tax e-filing system. The outcome of SEM AMOS confirms this assumption. The path revealed that trust has significant positive influence on continuance intention. This result consistent with (Belanche et al., 2014; Chong, 2013; Hernandez-Ortega, 2011; Hoehle et al., 2012; Hung et al., 2012; Kang et al., 2010; Kim et al., 2011; Teo et al., 2008) in various context of online technologies. For instance, Belanche et al., (2014) found that trust in public e-service influences users' intentions to continue using among citizens who used e-services for income tax return in Spain. While, Hung et al., (2012) and Kang et al., (2010) found that trust had positive influence on continued intention towards mobile shopping context. These

studies indicates that trust being important aspects that users considered in any context of online technologies as transactions of personal private information through online medium. However, as researcher aware of the role of trust has been received minimal focused in post adoption of e-government services in general and e-filing system in particular.

The significant relationship between trust and continuance intention finding implies that Malaysian taxpayers have trust in tax e-filing system and confident about the transaction carry out through e-filing system is safe and handled faithfully which in turn enhances the formation of continuance intention to use e-filing continuously. Thus, this signifies that when taxpayer have trust on tax e-filing system, the more likely the taxpayer willingness to continually use e-filing system. Some more, this indicates that trust plays essential role in the post adoption of e-filing system as it involves transmission personal private and confidential information through online from citizens to government as users placed great emphasis on security of e-filing transaction process. Elucidating further, as users nowadays are increasingly becoming more conscious of privacy and confidential, security of their data transmission through online, thus trusts in the e-government services and e-filing system is became vital component they considered. This is because as mentioned earlier in problem statement, although e-filing system usage improved and gained significant response from citizens, trust issue still remains as one of main issue concern by Malaysian taxpayers when using e-filing system due to transaction of personal information (Ambali, 2009; Hussein et al., 2011). Furthermore, the increases of cybercrime, hacking and fraud in internet will makes users rethink back about their personal and confidential data transaction through e-services. This is because the internet is prone

to unpredictable activities such as hacking, spamming, phishing and etc (Bhattacharya, Gulla & Gupta, 2012). Thus, in the absent of sufficient trust in e-government generally and e-filing specifically users will revert back to traditional offline interaction with government (Santhanamery & Ramayah, 2012b; Teo et al., 2008) where this will cause undesirable lost and failure to the government (Santhanamery & Ramayah, 2012b).

Therefore, it is essential for the IRBM and government always incorporate citizen's concern regarding the privacy and security of their private and confidential personal details which may influences willingness to continued use of tax e-filing system. As trust become a vital key concern in today's technology driven society (Belanche et. al, 2014). Thus, privacy and confidentiality of personal data of the user's should be highly valued to maintain the e-government service (Ahmad et al., 2013). Hence, government and IRBM should strongly consider the things, characteristics of online environment that could improve and strengthen the perception of trust towards e-filing system. People will value trust if they are convinced that trust is preserved in its true sense (Hussein et al., 2011). Thus, government and IRBM, always must be responsible for total protection of personal details transaction through e-filing system.

Elucidating further, to maintain good trustworthiness with existing users IRBM should continuously alert the taxpayers through campaign or advertisement through mass media regarding how IRBM handles the issues of security and privacy of transactions through e-filing system and highlights the strategies and application have been taken to secure taxpayer's personal data. The tax authority also should always survey and make sure that the e-filing system environments is protected from security

threats to grant trustworthy services to the public by strategically updating and communicating information on their security and privacy policies continuously to citizens on the e-filing system website. As the mere presence and responsiveness of government on modern media, will help enhances trustworthiness to organization, will be well recommended and could help citizen to recognize the convenience of modern technology with fewer concern about privacy and security threats (Belanche et. al, 2014). Other than that, the government and IRBM may strengthen the existing laws and regulations on personal data protection and privacy to prevent fraud and to ensure continuous trust on e-filing system. Thus, through this actions government and IRBM could convince and guarantee the taxpayers that e-filing system protects their personal information in a secure manner and will not leverage it for any purpose without upon permission. Other than that, this can create strong believe that the transaction through tax e-filing system secured and reliable with adequate protection and this could encourage taxpayers to continuously use this system without any doubts about security and privacy issues.

As overall this relationship highlight trust is an important element in e-government generally and e-filing system continuance intention. Once public perceived and have confident about trust issue dealing with government online, they will continue using e-government system. The presence of trust by implication will increase and strengthen the continuance intention of tax e-filing system among Malaysian taxpayers. Therefore, to ensure continuous usage and success of using online system, the government and IRBM must gained and continuously maintain good trust with citizens (taxpayers) by deliver transparent public services through online. Besides that the result also shows that it is essential to incorporate the concerns of citizens about

trust issues mainly when its involve the transaction of personal details through online which will determine their willingness to engage with e-service for long term.

#### **5.4 The relationship between perceived system quality and continuance intention of tax e-filing system**

In examining the relationship between perceived system quality and continuance intention of tax e-filing system, it has been shown that perceived system quality has positive relationship on continuance intention. Hypothesis is supported. This indicates that perceived system quality emerged as a significant and one of important component that determined continuance intention of tax e-filing system in Malaysia. The result of this finding is consistent with previous finding Wangpipatwong et al., (2009). For instance, Wangpipatwong et al. (2009) have been conducted a study to examine the web site quality (system quality, information quality and service quality) on continued use of e-government web site by 614 e-citizens in Thailand and found that that system quality has the greatest significant influence and enhance continued use e-government website. As researcher aware of, in the past literatures, there is lack of studies investigated the influence of perceived system quality on continuance intention thus this becomes one of the few studies in recent times that empirically investigate this linkage in e-filing system specifically.

Hence, the positive relationship between perceived system quality and continuance intention indicates that how Malaysian taxpayers view and considered the value of system quality of tax e-filing system as necessary aspect for continuance intention of particular technology. In this case, one could say that when users have a good perception and experience on system quality from usage of the tax e-filing system,

this will enhance their continuance intention towards the e-filing system. Thus, the higher the level of system quality, the higher and good will be continuance usage by taxpayers.

As mentioned earlier, although e-filing system usage have improved and gained significant response from citizens, server downtime issue remain as one main factor that concern by citizens (Hussein et al., 2011). Furthermore, the other challenge faced by taxpayers is to ensure the system run smoothly and effectively during annual tax filing period (Azmi et al., 2012). Thus, issues regarding system quality such as technical difficulties, functional difficulties, slow processing speed, system breakdown and downtimes issues which forced the users to queue in the system still faced by users not only in Malaysia in other countries as well (Chen, 2010; Chen et al., 2015; Chumsombat, 2014; Hussein et al., 2011). According to Chen (2010) especially during peak period tax month, taxpayers' perception on system quality will be threatened when the taxpayers forced queue in the system and faced difficulties in accessibility. These, technical problems may caused the users annoyance if the user's faced difficulties to do a transaction successfully (Ahmad et al., 2013). Thus, IRBM should make sure that the e-filing system stable enough to handle heavy user traffic during tax peak period or close to the deadline. This is because, the increases in the number of e-filer will deter if the existing users perceived that e-filing system is cumbersome to use and frequently malfunction (Azmi and Bee, 2010). In case any incomplete transaction due to system failure or any technical error or otherwise, the service authority should inform the particular user immediately about the unfinished task. Through this action it's may creates good and positive perception on the effectiveness handling technical problem and on system quality handling methods.

Furthermore, from the finding of this research perceived system quality ultimately influences the users' continuance intention of tax e-filing system and system quality being one of concerned by Malaysian taxpayers. Thus, in order long term success of tax e-filing system, one of the primary concerns by the system authority should be on execution of effective and appropriate steps on continuous improvement on quality of the tax e-filing system which indirectly will help to fulfil user's expectation and increase and sustain continuance intention among new and existing e-filing users. Therefore, it is important for the system designer and developer to keep evaluating and improving the quality of tax e-filing system by consider and fulfil citizens' requirement because the e-service with better system quality influence continued usage decision. This is because the e-government website which provides with necessary information on timely manner, attractive interface, easy to use, helpful and cost saving will caused the citizens' more inclined the usage in future (Ayyash, Ahmad & Singh, 2013). Thus, IRBM suggested to expand the capacity of tax e-filing system according to volume of taxpayers increases year to year. IRBM also may encourage taxpayers to early tax submission or use the off-peak hours for tax submission via e-filing to encourage the system function and load evenly system during month of tax filing by giving certain incentives for early tax submission such early tax rebates. Additionally, to encourage and sustain continuous usage intention among taxpayers IRBM and government should make sure that, no quality issues on e-filing system functionality, such as system easy to use, user friendly, no navigation issues in and etc. As overall, this means that to raise the intention of taxpayers to continuously use tax e-filing system, IRBM should give more emphasize on system quality because this playing important role on continuance intention. Through this

action could increase user's perception on system quality and sustain continuance intention.

### **5.5 The relationship between perceived information quality and continuance intention of tax e-filing system**

The hypothesis posits that perceived information quality is positively related to continuance intention of tax e-filing system. The finding of this study indicates that perceived information quality does not have positive relationship on continuance intention of tax e-filing system. The insignificant relationship, thus, hypothesis is not supported. This means that perceived information quality does not influence continuance intention of tax e-filing system. Although there were notable significant relationship between information quality and continuance intention in prior studies from various context of technologies (Almahamid, 2009; Ramayah et al., 2010; Teo et al., 2008; Wangpipatwong et al., 2009; Zhou, 2013b) but this research finding contradicts with those finding but its consistent with Teo et al., (2008).

The insignificant result indicates that perceived information quality does not play an important role in examining continuance intention of tax e-filing system among Malaysian taxpayers. This contradict result could be due to the nature of the service provider. As this research is focused on e-government setting, which the online service is provided by government. Thus, the quality of information provided by government entities may not much considered by the taxpayers. The taxpayers may trust that the information provided by IRBM is sufficient, up to date, relevant, reliable and maintained at appropriate level, thus the taxpayers will use it without any doubts and therefore the importance of information quality might be not main consideration



for continuance intention. Furthermore as mentioned earlier, this insignificant finding may be attributed to the fact that the respondent of this study have prior experiences using the system, have good education background, computer literacy (with minimum eleven to 31 years and above of computer usage experience) and internet literacy (with eleven to 21 years and above of internet usage experience). Hence, this forming some meaningful insight that the taxpayers in Malaysia have some sort of experience of use e-filing system before, might exposed with basic IT knowledge on the operation of e-filing system based on the demographic of respondent background. Thus they may less concerned much about the information quality, but rather concerned about other factors such as whether the application is useful, have good system quality, trustable and satisfied.

Although perceived information quality does not influence continuance intention of tax e-filing system in the context of this study but other prior studies such (Almahamid et al., 2010; Chen et al. 2015; Floropoulos et al., 2010; Wangpipatwong et al., 2009) found information quality is one important aspect in e-government service acceptance, satisfaction, continuance intention or success. Thus, the tax authority in Malaysia responsible and ensure that the information provided in e-filing system is comprehensive, relevant, accurate, reliable and timely. It is very important that all the policies, laws, rules, and regulation guiding how citizens can interact with government and vice versa through e-filing system and the relevant information needed to obey with government procedure and mainly in an online setting must be always available, thoroughly adequate and updated frequently based on technology evaluation and changes. Besides that, the insignificant result may be function of sample of this study, future studies, may continue to evaluate and revalidate the

relationship between perceived information quality and continuance intention using more diverse samples and in other context of e-government services setting.

### **5.6 The relationship between satisfaction and continuance intention of tax e-filing system**

This study found that satisfaction has positive influence on continuance intention of tax e-filing system. The relationship between satisfaction and continuance intention have been validated in prior studies over wide range of online services context and its revalidation in the e-filing context further confirmed the robustness of this association and the finding in line with (Bhattacharjee, 2001; Belanche et al., 2014; Chang, 2013; Chatfield & AlAnazi, 2013; Chen et al., 2009; Cheung & Lee, 2011; Jiang & Ji, 2014; Jiang, 2011; Islam, 2012; Lee, 2010; Li & Liu, 2014; Liao et al., 2009; Limayem & Cheung, 2011; Thominathan & Ramayah, 2014; Thong et al., 2006; Teo et al., 2008). These studies showed that satisfaction is one of most significant motivator of continuance intention in various contexts of online technologies. For instance, Jiang (2011) identified that user satisfaction is one of the main antecedent that influence continuance intention of e-government portal in China. While, Belanche et al. (2014) found that satisfaction exerted strong and significant effects on continuance intention in e-service tax return context in Spain. Hence, the finding of this research supports the contention of ECM which highlighted that the satisfied users are important drivers for continued usage intention and this antidote against IT discontinuance.

Hence, the finding of this research indicates that one of key of taxpayers' continuance intention towards tax e-filing system is satisfaction. The satisfied taxpayers with the tax e-filing system will continually use this system in future. Furthermore this result

also implies that it seems tax e-filing system is voluntary usage, thus secure transaction of user's privacy and confidential personal information and the effectiveness of tax e-filing system compare with manual tax filing process, might have influences the satisfaction level of taxpayers towards the system and this influences users' continuance usage decision in Malaysia. Users form satisfaction with using e-filing system from largely on a cognitive appraisal of how it will improve their performance and consequences or benefits of using the e-filing system (Hsu and Chiu, 2004). When users have higher satisfaction, their more inclined to continue use the service (Chen et al., 2012). At the same time, when users of e-service dissatisfied with the system may discontinue from e-service use (Hsu and Chiu, 2004). Any ignorance of satisfaction will effect continuance decision of IS user (Bhattacharjee, 2001). Thus, satisfaction is one of critical driver of continued usage and satisfaction is an antidote against discontinuance usage in future (Thong et al., 2006). Thus, it is clear that the Malaysian government should pay more attention to the role of satisfaction, because of its strong relationship to continuance intention.

As overall, the finding of this research implies that when taxpayers are satisfied, they are more inclined to continue using e-filing system in future. The satisfied taxpayers will continue to use e-filing system and make the potential benefits of e-government services realized through continuance. This is because satisfaction is regarded as experience specific (Liao et al., 2009) and derived from knowledge obtained during the use of the ICT (Hernandez-Ortega et al., 2014). Furthermore, in post adoption stage users' satisfaction is grounded by users' firsthand experience which more realistic and unbiased (Lee, 2010). Hence, users satisfaction much more realistic, unbiased, less susceptible to change (Li & Liu, 2014) after usage particular online

service which might influence continuance intention in future. Thus, more emphasize should be focused by IRBM and government on satisfaction of users' in order to encourage and sustain continuous usage and to ensure e-filing system success in near future. The satisfied taxpayers will tend to spread positive word-of-mouth where this could encourage more usage and this indirectly will contribute greater cost saving to the government (Goh et al., 2012). This is because user retention is an essential matter, as satisfied user are less expensive, more effective advertising channel (word of mouth) than print or mass media, due to the greater believability connected with personal experiences (Chang, 2013). Therefore, IRBM and government should continuously monitor and doing some surveys to gain user's feedback or satisfaction level towards tax e-filing effectiveness.

## **5.7 The relationship between perceived usefulness, trust, perceived system quality, perceived information quality and confirmation on satisfaction**

### **5.7.1 Perceived usefulness and satisfaction**

The relationship between perceived usefulness and satisfaction was investigated in this research. In prior studies the relationship between perceived usefulness and satisfaction has been usually studied as a part of ECM in information system literature.

Evidence from finding of this research showed that the relationship between perceived usefulness and satisfaction is insignificant, thus the hypothesis is not supported. At first glance, the result of this research is different from majority findings of previous studies, which demonstrate that perceived usefulness has positive

relationship towards satisfaction (Akter et al., 2012; Belanche et al., 2014; Chong, 2013; Hernandez-Ortega et al., 2014; Hoehle et al., 2012; Islam, 2012; Jiang & Ji, 2014; Jiang, 2011; Lee, 2010; Lee & Kwon, 2011; Li & Liu, 2014; Lim et al., 2013; Limayem & Cheung, 2011; Shiau & Chau, 2012; Thong et al., 2006; Thominathan & Ramayah, 2014; Zhou, 2011). For instance, Jiang and Ji (2014) found that perceived usefulness significantly and positively influenced users' satisfaction among three type of users of service; information acquisition user group, information exchange user group and transaction user group in China. The insignificant finding in this research is obviously inconsistent with findings by Bhattacharjee (2001), which found that perceived usefulness have significant effect on users' satisfaction in the ECM model.

Although the results of this study contradicts from previous studies which found that perceived usefulness has a positive relationship with satisfaction, but previous studies such as Hong et al., (2006) and Liao et al., (2007) have found an insignificant relationship between perceived usefulness and satisfaction. Thus, the finding of this research in line with (Hong et al., 2006; Liao et al., 2007). Hong et al. (2006) who extended ECM in the context of mobile internet found that the relationship between perceived usefulness and satisfaction turned to be insignificant. While, Liao et al., (2007) conducted study in the context e-learning system and found that the influence of perceived usefulness on satisfaction was insignificant in Taiwan.

Contrary to prior studies, in this study the insignificant influence of perceived usefulness on satisfaction was quite unexpected. One of the reasons for this inconsistency of the finding may lie in context of this research, which focus on tax e-filing system in Malaysia but previously much focused considered in other online

services such as e-business, e-commerce, mobile online technologies and etc. As cited in Hong et al. (2006), research related with information technology adoption and usage research should consider the influence of contextual aspects, such as the characteristics of the technology under investigation and its interaction with various external factors. Furthermore, Jiang & Ji (2014) highlighted that the use of e-government portal is often different than using other type of web portal such as e-commerce and e-learning applications in term of user's objectives and requirements. Firstly, as in the case of this research, Bhattacharjee (2001) investigated user's continuance intention in the context of online banking services which focused on private online services, while this research investigated user's continuance intention to use e-filing system which the service provided by government. Thus, this context or technology differences might contributed to the insignificant finding of this relationship in this research. Secondly, in ECM perceived usefulness is the only post-adoption belief is considered in online banking context. But, the current research considered some additional post adoption beliefs to capture various users' different desires and beliefs in tax e-filing system context. This may be contributed due to additional variables (external factors) considered in this research as mentioned above by the study of Hong et al., (2006). Thus, this may influences the insignificant relationship between perceived usefulness and satisfaction when additional beliefs were considered in the model. Therefore, this could be the other reason for this contradict finding due to the influence of other additional (perceived system quality, trust and perceived information quality) variables combined with the ECM model in proposed research model.

Furthermore, the different result may be attributed to the fact that for the continued use of any online services, the users' first consideration of the system design (usefulness of the system itself) is to promote customer's intention towards online service continuance which focusing on practicability and profitability to increase job performance (Liao et al., 2007). This indicates that people might continuously use certain online services just to accomplish their task in hand which that usefulness of that particular technology increases user's performance than manual off-line method even though faced some precipitates displeasure sometimes. In addition, Davis (1989) and Liao et al. (2007) suggested that perceived usefulness can directly influence behavioral intention as the users of an information system believe that that particular technology will increase their job performance. From statistics as mentioned in earlier chapter in this research, the number of taxpayers using tax e-filing system is obviously increasing than manual method, thus this can directly determine continuance intention but not necessarily influence satisfaction level of users. However, although perceived usefulness does not have significant influence on satisfaction in the research but perceived usefulness has direct and significant influence on continuance intention of tax e-filing system. Thus, this result might indicates that the usefulness of the e-filing system makes Malaysian taxpayers willingness to adopt, accept and continuously use the e-filing system to accomplish tax tasks through online but they may not necessarily to be satisfied with that e-filing system. This means users experienced usefulness of tax e-filing system than manual method are more likely to continue using e-filing system but they may not satisfied with the system.

### **5.7.2 Trust and satisfaction**

The finding of this relationship, that is, the relationship between trust and satisfaction is found significant and positive, thus the hypothesis is accepted. A close look at the review of extant literature revealed that trust influenced satisfaction, hence the finding in line prior studies such as (Akter et al., 2012; Bavarsad & Mennatyan, 2013; Hoehle et al., 2012; Hsu et al., 2014; Kassim et al., 2012; Teo et al., 2008). For instance, Hoehle et al. (2012) and Kassim et al. (2012) found that trust have significant influence on satisfaction in internet banking and in student information system context respectively. Hsu et al., (2014) examined two types of trust; trust in website and trust in sellers on satisfaction with website and satisfaction with sellers in the setting of online group buying website and found that both trust have positive influence on satisfaction with website and satisfaction with seller respectively. Other than that, Bavarsad & Mennatyan (2013) found that trust have positive effect on customer satisfaction among e-government services users in Booshehr Province, Southern Iran. However, as researcher aware of very few studies considered the relationship between trust and satisfaction in e-government and particularly in e-filing context.

It can be inferred that Malaysian taxpayers likely satisfied with trust factor. Since the usage of e-filing system is voluntary in Malaysia, this positive outcome suggests that trust is an important aspects that determine taxpayer's satisfaction for voluntarily and continually use the e-filing system to file the tax return. This is because, as noted earlier although government agencies have been invested huge amount of money for implementation and maintenance of e-government services, trust and security of online transaction still remains as main issues in e-government services (Ambali,



2009; Belanger & Carter, 2008; Hussein et al., 2011; Sahari et al., 2012) due to increases of various type of online vulnerabilities. Furthermore, success of e-government services not only depends on technology excellence but also depends on intangibles factors such as trust (Berdykhanova, et al., 2010) as e-government services requires sensitive and personal data while online transaction. Thus, this finding indicates that user may satisfy with the e-filing system as long as the system authority's guarantee about the security aspect of the personal information transmitted through e-filing system. As building customer trust may improve their satisfaction level (Hsu et al., 2014) towards particular technology continuous usage.

The other reason for this finding perhaps could be due to the provider of the tax e-filing system is government where trust may easily instill. Thus individuals have good level of trust on e-file service because nature of service provider, which resulting in satisfied user. Therefore it is logical that where IRBM and government to continuously evaluate and update about security aspects of the existing e-filing system. Government and IRBM also should promote and reveals about how they handle the privacy of personal data securely through any mass media or social media frequently especially during near the tax submission period to enhance and make user more confident about on the transaction of personal details through e-filing system which may increase and strengthen user satisfaction towards the e-filing system.

As overall this finding indicates that when designing new e-government system or maintaining the existing e-government services, one of major consideration by the service developer should be focused on security aspects of personal details transferred through online to satisfy the users and encourage continued use towards particular

system. As the availability of good security will lead to continuous trust and perhaps subsequently will lead to satisfaction. Subsequently, building user trust is necessary of e-government success (Teo et al., 2008). Thus, government in promoting e-government services particularly e-filing system should focus more on trust aspect of e-filing system for continuous usage and full success of the system.

### **5.7.3 Perceived system quality and satisfaction**

In examining the relationship between perceived system quality and satisfaction, it has been shown that perceived system quality has significant and positive relationship on satisfaction towards tax e-filing system. The hypothesis is supported. This implies that Malaysian taxpayers have good perception on the system quality of tax e-filing system that provided by IRBM which makes users satisfied with system and in turn enhance their continuance intention towards tax e-filing system. Besides that, this shows that, the effort made by Malaysian government and IRBM to provide a good quality of system for transaction tax tasks well received by citizens in the context of the research. Thus, the rational justification of this finding might be that, once taxpayers' perceived the system quality of the tax e-filing system is functioning well, easy to use, user friendly, provides helpful instructions, easy to navigate within pages and provides fast information access, thus this makes taxpayers satisfied with system to submit and accomplish their tax task through tax e-filing system. When taxpayer's perceived minimum effort needed to submit income tax through online this influences user's satisfaction level towards e-filing system.

The finding of this study consistent with studies such as (Chang, 2013; Chen, 2010; Chumsombat, 2014; DeLone & McLean, 1992; Islam, 2012; Kim et al., 2011; Roca et

al., 2006; Teo et al., 2008) where these previous researchers discovered that the relationship between system quality and satisfaction is positive in various online technologies. For instance, Chen (2010) found that system quality positively associated with satisfaction and as one of most important factor that determine taxpayer satisfaction in Taiwan who used the online tax e-filing system. Teo et al. (2008) conducted a study using DeLone and McLean IS success model found that system quality perception have significant influence on satisfaction in the context of e-government website especially for active users group who were used e-government website for interaction and transaction purpose with government among 214 Singapore e-government web site users. Besides that, Chumsombat (2014) found that system quality have significant relationship with satisfaction of e-tax filing among 415 corporate taxpayers of SMEs in Thailand. While, Roca et al. (2006) conducted a study in e-learning continuance intention and revealed that perceived system quality plays essential roles in predicting satisfaction. Furthermore, Islam (2011) also found that perceived system quality positively affect satisfaction of educators regarding e-learning system utilization in Finland.

Thus, as overall this implication of this result denotes that Malaysian taxpayers emphasized on system quality of tax e-filing system which determines their satisfaction level towards e-filing system. This means that the higher the extent of system quality of tax e-filing system the more satisfaction will be accrued and felt by taxpayers through conducting tax transaction through online. This is because taxpayers' main concern is ease of access, speed loading, speed processing of tax task (Chen, 2010). Hence, this indicates that when the elements of system quality of tax e-filing system continuously improved, maintained and upgraded by tax authority as

user's perception will increase good perception towards tax e-filing system which will make the users satisfied and also will indirectly encourage the continuance usage of the system. According to DeLone and McLean (2003) the higher the quality of the system will contribute to more use, more satisfaction and positive net benefits, conversely if the system have poor quality will cause to user dissatisfaction and negative net benefits. Thus, in promoting satisfaction and continuous usage among the citizens, government should ensure that system quality criteria are considered. A well designed, developed and implemented system is necessary prerequisite to derive user satisfaction (Chang, 2013). Therefore, IRBM and system developer should take effective effort by continuously updating, upgrade and improve quality and design of the system such as increase processing speed, alert and update with new technologies upgrades, maintaining system responsiveness during the peak period of tax filing month in an user friendly manner in order to sustain the satisfaction and good perception towards the existing e-filing system. Regardless how good the information, if it cannot proceed effectively and efficiently, overall perception will become negative because failure to satisfy expectation (Chen, 2010; Chen et al., 2015; Weerakkody et al., 2013). Thus, IRBM should always and frequently take note on system quality and improve functionality of tax e-filing system.

#### **5.7.4 Perceived information quality and satisfaction**

According to empirical evidence generated in this study found that the relationship between perceived information quality and satisfaction is insignificant. Thus, hypothesis not supported and rejected. Although there were notable significant relationship between information quality and satisfaction in prior studies (Chang, 2013; Chen et al, 2015; Chen, 2010; Chumsombat, 2014; Floropoulos et al., 2010;

Islam et al., 2012; Jiang, 2011; Khayun & Ractham, 2011) but this research finding contradicts with those finding but its consistent with (Jiang & Ji, 2014; Teo et al., 2008). For instance, Jiang & Ji (2014) conducted a study to examine user adoption and continuance intention of e-government web portal from perspective of service level and service quality among three types of user groups which were categorized based on the purposes of use and primary activities of e-government web portal; information acquisition, information exchange and transactions groups in China. Jiang and Ji (2014) found that the relationship between information quality and user satisfaction was not significant among transaction user group.

The insignificant of relationship between perceived information quality and satisfaction were quite unexpected. One potential explanation for this insignificant result could be because of the characteristics of the technology; e-filing system in Malaysia investigated in this particular research. According to Jiang & Ji, (2014), web portal quality might have different effect on user's satisfaction depending on what the users desire to do with their uses. As the main concern of taxpayers and more interested is in the quick processing and submission of their tax filing tasks than visiting the tax agency and spending several hours in queue. Thus, based on the response of this study this might indicates that taxpayers' main concern could be on accomplishment of tax task within given period of time and as long as e-filing system provides the necessary functionality and make the online option more convenient than the offline option as perceived system quality have been one of important factor that determines taxpayer's satisfaction in this study in Malaysia.

Furthermore, in post adoption stage, users have already obtained some experience information system and even been competent of using information system (Wang, 2014). As the result of screening question where the respondents were asked whether have ever used e-filing system to tax return through online and revealed that the respondents confirmed they had used e-filing system before. Furthermore, the other possible explanation could be for insignificant result is the characteristics of the respondents in this study about 90.1 percent of respondents have minimum eleven to 31 years and above of computer usage experience, 66.1 percent of respondent have eleven to 21 years and above of internet usage experience, this frequency implies that the respondents in this research sample have some sort of basic computer and internet usage knowledge. Hence, this may implies that perceived information quality have insignificant influence on satisfaction. Thus, based on this finding, in order to increase user satisfaction, IRBM and government should also pay some attention on quality of information in e-filing system besides system quality aspects to ensure the information quality of e-filing system satisfied the existing users to move forward.

### **5.7.5 Confirmation and satisfaction**

According to Bhattacharjee (2001) confirmation is a cognitive belief (the extent to which users' expectation of IS use is realized during actual use) derived from prior use. Based on the findings in that chapter four, confirmation has positive influence on satisfaction in this research. This result is in line with previous studies such as (Chen et al., 2009; Ho, 2010; Hoehle et al., 2012; Islam, 2012; Lee, 2010; Lee & Kwon, 2011; Li and Liu, 2014; Liao, Palvia, & Chen, 2009; Lim et al., 2013; Shiao and Chau 2012; Shiao et al., 2011; Thong et al., 2006; Thominathan and Ramayah, 2014; Zhou , 2011). The previous studies highlighted that user of a technology always will develop

an expectation about the product or services before use it. Once the user used particular products or services, the user will gain hands on experience from it and will develop perception about its performance. This experience will either confirm or disconfirm about the pre-expectation. The expectation will be confirmed if the performance of the product or services beyond expectation and will be disconfirmed if its fall below the expectation.

The positive relationship between confirmation and satisfaction in this research reveals that the taxpayers are likely feeling satisfied with tax e-filing system once they used the system which the users' expectation is confirmed once used the e-filing system. The tax authority (IRBM) continuously making improvement on tax e-filing system by substantially invested substantial amount of money and resources in the development of e-filing system (Azmi et al., 2012), have undergone progressive improvement such as used more robust engine like Firefox and Opera (Ambali, 2009), three fold increases in the internet bandwidth for e-filing website from 90MB to 300MB (Meikeng, 2014), improvement in server capacity (Islam et al., 2012) and also Disaster Recovery Plan action taken to protect electronic services and relevant data (Meikeng, 2014). These facilities might create positive user's experience which indirectly influences user's satisfaction towards tax e-filing system. This is because when taxpayers identified and felt that tax e-filing system performs better once they used this system than their expectation, thus this fulfilled expectation increased user's satisfaction level towards tax e-filing system which indirectly will influence taxpayer's continuance intention. Therefore, users' confirmation of their expectation signify that users gain expected benefits from their usage experience of particular technology and leads to a positive effect on users' satisfaction with it (Thong et al.,

2006). In addition, this finding support the Expectation Confirmation Model outcomes which reveals that lower expectation or higher performance will lead to the greater confirmation which will eventually influence user satisfaction and continuance intention (Bhattacharjee, 2001).

Additionally, the finding of the research revealed that the influence of confirmation on satisfaction was higher than perceived usefulness on satisfaction which has insignificant relationship. Confirmation has the largest influence on satisfaction ( $\beta=0.514$ ) and also found that confirmation was a strong determinant of satisfaction. This finding supports the Expectation Confirmation Model (ECM) by Bhattacharjee (2001) which found that confirmation were the strongest predictor of satisfaction than perceived usefulness. Thus, this finding indicates that the fulfilling users' expectation is a main way to enhance satisfaction level of users. Users' whose expectation is confirmed with usage experience with a technology will have higher level of satisfaction. This is because users put more emphasize on the confirmation of their expectation, rather than post-adoption beliefs in forming their level of satisfaction (Thong et al., 2006) on the usage of particular technology. Furthermore, as confirmation is the strongest predictor of satisfaction indicates that the fulfilment of the expectation on the performance of tax e-filing much more important aspect that will be considered by taxpayers which influences tax payers satisfaction and continuance usage of this system.

Therefore, IRBM and system developer should expand effective strategies and promotion to build up an appropriate level of initial user expectations. Where these actions will influence users positively to confirm their initial expectation and which



this positively will influence satisfaction during usage of the system. Thus, Malaysian government and tax authorities should not ignore the influence of confirmation on satisfaction because by confirming user initial expectation in order to improve continuance intention towards tax e-filing system.

### **5.8 The Relationship between confirmation and perceived usefulness**

The relationship between perceived usefulness and confirmation were examined and found that confirmation has positive relationship on perceived usefulness. According to Bhattacharjee (2001), highlighted that users may have low initial usefulness perceptions of a new information system as users are not sure what to expect from its use. Users might still use that information system and form more accurate perceptions on the usefulness of the particular technology from their IS usage experience. Users' low initial perception of usefulness can be improved through their actual information system usage behaviour as a confirmation process. In other word, this means user's perception on the usefulness of an online service will be adjusted as result of the confirmed usage of particular technology usage experience. This result is consistent with most of the previous studies:( Islam, 2012; Kang et al., 2009; Lee & Kwon, 2011; Liao et al., 2009; Lim et al., 2013; Shiau et al., 2011; Thong et al., 2006; Thominathan & Ramayah, 2014). Thus, the significant relationship between perceived usefulness and confirmation, supports the Expectation Confirmation Model (ECM) finding.

Hence, the finding of this study indicates that users' experience with tax e-filing system influenced and confirmed the expectation of users in term of usefulness perception such as improvement in performance and enhancement in effectiveness,

accomplishment tax task quickly and easily after usage experience of e-filing system. Thus, this shows that taxpayers perception about usefulness of tax e-filing system have been adjusted and confirmed through user's own usage experience on particular technology. Therefore, understanding users' actual needs and designing the feature of the system that fulfil user's expectation (Liao et al., 2009) crucial for success of the particular system.

### **5.9 The mediating effect of satisfaction on the relationship between perceived usefulness, trust, perceived system quality and perceived information quality on continuance intention of tax e-filing system**

On the mediating effect, this study hypothesized satisfaction mediates the relationship between perceived usefulness, trust, perceived system quality and perceived information quality on continuance intention. Detailed discussion of the each mediating effects is discussed in the following sections.

#### **5.9.1 The mediating effect of satisfaction on the relationship between perceived usefulness and continuance intention of tax e-filing system**

This hypothesis investigated the mediating effect of satisfaction in the relationship between perceived usefulness and continuance intention of tax e-filing system. Evidence from analysis demonstrates that satisfaction does not exert mediating influence on the relationship between perceived usefulness and continuance intention. Hence the hypothesis is not supported. The support for this finding however is lacking as the existing study found a significant mediating effect (Jiang, 2011). For example, Jiang (2011) conducted a study to identify factors that user's continuance intention of e-government portal found that perceived usefulness have indirect effect on

continuous intention through user satisfaction. However, the result of this study is in line with Liao et al. (2007).

From data as mentioned in earlier chapter in this research, the number of users using tax e-filing system is obviously increasing than manual method, thus this may indicates that perceived usefulness may influence continuance intention directly but not necessarily mediated by satisfaction. Liao et al., (2007) had highlighted that perceived usefulness can directly affect behavioural intention without mediating effect of customer satisfaction in certain application context because the consideration of any system design is to promote customer intention towards service continuance which will increase costumer's job performance. Thus, the result could be attributed that satisfaction towards usefulness is not perceived to be important by the respondents in this study. This might also indicates the usefulness of the system makes Malaysian taxpayers' willingness to adopt, accept and continuously use the system, although they may not satisfied with e-filing system. The finding also refers to the fact that the taxpayers continuously use the tax e-filing system for the benefits that the system provides compared with manual method but they are may still not satisfied with usefulness of the system. Thus, IRBM and government should take some effective strategies to enhance positive experience by improve elements of usefulness of the system which could create satisfaction towards the system and indirectly to retain continuance usage.

### **5.9.2 The mediating effect of satisfaction on the relationship between trust and continuance intention of tax e-filing system**

The study found that satisfaction demonstrates mediating influence between trust and continuance intention of tax e-filing system. This shows that satisfaction mediates the relationship between trust and continuance intention. The higher the taxpayer's trust towards the system will eventually makes user satisfied and this indirectly will influence for continuous usage of e-filing system. The finding in line with Hoehle et al. (2012). For example, Hoehle et al., (2012) conducted a study to determine user continuing intention to use internet banking service among 210 internet banking users in New Zealand and found that satisfaction plays partial mediating role between continuous trust and intention to continue using internet banking in New Zealand. The author had highlighted that the relationship between continuous trust and continuance intention become superior when satisfaction were included as mediator between in this relationship.

As overall, the result of this research indicates that satisfaction plays important mediating role in the relationship between trust and continuance intention. As such, the government and IRBM should carefully and continuously upgrade effective strategies that convince users that they are dealing with secure system and protection on personal data is secure which this could enhance user's satisfaction and encourage continuous usage. As the user confidence with trustworthiness of e-filing system this will enhance user's satisfaction level which will eventually lead to continuance usage intention towards tax e-filing system. This is because trust is important for new and for more advanced user of technology (Belanche et. al, 2014). Thus, to maintain trust, IRBM and government should constantly promoting professionalism through

promoting transparencies in managing of transaction, integrity, by carry out campaigns to enhance the users' trust perception towards e-filing system and continuously improving current system. As through this action, the taxpayers could feel safer when engage them through e-filing system to deal with government. Furthermore, the government and IRBM continuously should preserve trust that they had gained from citizens by transparent transaction to enhance the user's satisfaction and to encourage continuous usage.

### **5.9.3 The mediating effect of satisfaction on the relationship between perceived system quality and continuance intention of tax e-filing system**

The hypothesis deals with the mediating effect of satisfaction in the relationship between perceived system quality and continuance intention of tax e-filing system. The study found that satisfaction does mediate the relationship between perceived system quality and continuance intention of tax e-filing system. Hypothesis is supported. This shows that satisfaction mediates the relationship between perceived system quality and continuance intention. This suggesting that perceived system quality plays one of important role in post adoption stage through satisfaction. The higher the taxpayer's good perception on system quality of tax e-filing system, this eventually will make user satisfied and this indirectly will influence the continuance usage of tax e-filing system. The finding is consistent with Zheng et al., (2013) and Zhou (2013b) were the researchers conducted study in information-exchange virtual community (VC) and mobile site context respectively. For instance, Zheng et al., (2013) examined the mediating effect of user satisfaction between perceived system quality and continuance intention in information-exchange virtual community (VC)

user context found that the relationship fully mediated when satisfaction were added as mediator in between perceived system quality and continuance intention.

Thus, the result of this study indicates that satisfaction plays an important mediating role in the relationship between perceived system quality and continuance intention of tax e-filing system. This suggests that e-filing continuance intention requires certain level of comfort with quality of the system itself. Taxpayers who perceived good and comfortable with system quality of tax e-filing system functionality were more likely to be satisfied and like continuously use the system. As such, the IRBM, system developer and designer can take some effective strategies by continuously improve, update and upgrade quality of the existing e-filing system and adapt new technologies which could serve positive experiences and enhance user's satisfaction level and continuance intention towards the system. Once taxpayers' perceived the system quality of the tax e-filing system is functioning well, easy to use, user friendly, provides helpful instructions, easy to navigate within pages and provides fast information access, thereby this will stimulating user perception of system quality and will increasing user satisfaction and indirectly will influence continuance intention. As such, through this actions the government and IRBM could achieve desirable volume of usage by sustaining the existing users and achieve full success near future.

#### **5.9.4 The mediating effect of satisfaction on the relationship between perceived information quality and continuance intention of tax e-filing system.**

The mediation result revealed that satisfaction does not exert mediation effect on the relationship between perceived information quality and continuance intention of tax e-filing system. The support for this finding however is lacking as the existing studies

Zheng et al., (2013) found a significant mediating effect of satisfaction on the relationship between perceived information quality and continuance intention in information-exchange virtual community (VC) context. The finding however lack of support past studies as far as researcher concerned due to lack of previous studies on the linkage in e-filing context.

The result could be attributed may lie in context of this research, which focus on tax e-filing system in Malaysia but the study conducted by Zheng et al., (2013) focused on information-exchange virtual community (VC) context. As cited in Hong et al. (2006), research related with information technology adoption and usage research should consider the influence of contextual aspects, such as the characteristics of the technology under investigation. Furthermore, Jiang & Ji (2014) highlighted that the use of e-government portal is often different than using other type of web portal applications in term of user's objectives and requirements. Thus, this might caused the insignificant direct and indirect relationship via satisfaction in this study. Thus, IRBM and government might take some effective strategies to improve and continuously update the existing relevant information which may influence user's satisfaction and continuance intention towards the system.

#### **5.10 Implication of Research**

This study is timely in its context and contributes in several ways to enrich existing body of knowledge. Fundamentally, the findings in this study contribute to the body of knowledge in the form of theoretical, practical and methodological connotation. The subsection of this section hereby focuses on discussing the above mentioned respectively. Finding from this study proved to have valuable consequences for policy

makers, system developer, tax authority and future researchers. The proposed theoretical model was tested in the context tax e-filing system as proxy to test the assumption arrived from previous literature reviews. This research can be immense importance in e-government services continuance especially tax e-filing system which have been developed with huge amount of expenses.

#### **5.10.1 Theoretical Contribution**

The research has contributed in enriching the existing body of knowledge on continuance intention and e-government literatures. This research contributed to the theoretical implication, by developing and validating research model that focused on post adoption stage by examining the continuance intention of tax e-filing system. Furthermore, as more and more government services moving to online services as alternative with manual service, it's become interestingly important to understand the factors that contribute to continued use of these online services. As the real benefit of e-government initiatives can be realized only when the citizens adopt and continuously use this services (Hu et al, 2009). E-government services cannot succeed if no continuous usage of particular online services. Thus, one of principal objective of this research is to gain better understanding of the factors that influence citizens' continuance intention of e-government services in general and e-filing system in specifically.

Other than that, the research in e-government studies relatively sparse in developing countries context especially focused on post adoption and in Malaysia. Much of the prior studies focused more on e-government in developed countries in the western world. Thus, this research added knowledge in the e-government generally and



specifically in e-filing system context in developing countries by providing some new insights and clarification of continuance model in this context.

Furthermore, to fill this gap empirical survey research was conducted grounded with Expectation Confirmation Model (ECM) theory and continuance intention literature which aims to develop better theoretical explanation for the continuance intention of e-filing system. The one of significant contribution of this research is by advanced theoretical knowledge by using ECM continuance model in the new research setting (tax e-filing system) with relevant additional factors in Malaysia. In other word, this research validated the ECM model in tax e-filing system context which were widely used in developed countries and frequently used in e-business, e-commerce and mobile technologies. In addition, as mention earlier prior studies indicated that in ECM model, only perceived usefulness included as post adoption belief. Thus, the researcher have explored by adding more beliefs variables such as perceived system quality, perceived information quality and trust.

Besides that, as researcher aware of much of prior studies considered trust, perceived system quality and perceived information quality separately in various online services, very lack studies considered all this variables with ECM comprehensively in one model. Furthermore the influence of these variables in prior studies was inconclusive where some researchers found significant and other researchers found insignificant findings as the results depending on particular online technologies context. Thus, this research fills the gap by exploring trust, perceived system quality and perceived information quality in e-filing system context in Malaysia because of

uncertainty and quality issues. Trust and perceived system quality regarded as essential factors to form long term continuance intention of e-filing system.

The research provides insights that perceived usefulness and satisfaction do not solely influence continuance intention in the post adoption stage as previously indicated in ECM. But from the finding of the research, it's suggested that perceived system quality and trust also important factors that influences continuance intention in the context of this research. Trust influenced continuance intention directly and indirectly mediated by satisfaction in this context of research. Thus, the significant influence of trust on continuance intention finding contributes to existing literatures by confirming that the inclusion of trust as addition belief in research model is relevant in the e-filing system context as its involves uncertainty, personal and confidential data transaction through online.

Other than that, perceived system quality and perceived information quality were empirically tested in the context of tax e-filing system in Malaysia to investigate the influences of perceived system quality and perceived information quality on continuance intention and with the mediation effect of satisfaction in between. As researcher aware of to date, there is very lack of studies that investigate the influence of perceived system quality and perceived information quality on continuance intention and in specifically in tax e-filing system context and in Malaysia. As most of prior studies have commonly researched and accepted that the system quality and information quality of information system plays important role in determining user satisfaction, use intentions and success. From, the outcome of this finding, in particular taxpayers may perceived and consider system quality more important than

information quality towards continuance intention of tax e-filing system. Thus, such insights may sharpen understanding and will provide some useful information in knowledge gap in the context e-government generally, e-filing system specifically literatures and continuance intention literature. At the same time this insights will provide useful information to service provider of tax e-filing system (IRBM) to consider the system quality matter and offer excellent service mechanism to define and fulfil users' needs related to e-filing system continuous usage decision.

As overall, the significance performance of the proposed model in this research suggests that the application of this model in investigation users' continuance intention of various other e-government services in future. Thus, this research provides a theoretical understanding of how the perceived usefulness, confirmation, satisfaction, perceived system quality, perceived information quality and trust variables are important in explaining the continuance intention of tax e-filing system context in Malaysia. More specifically, this study explored that the joint effect of the aforementioned variables that can influence the continuance intention. More specifically, as a result of analyzing the relationship of trust, perceived system quality and perceived information quality on continuance intention empirically, this study found that trust and perceived system quality are clearly plays important role in continuance intention. Thus, the research contributes to existing literatures that by confirming that the inclusion of trust and perceived system quality as addition belief into ECM is relevant in the e-filing system context as involve uncertainty and based nature of the system itself. Hence, this add novelty to the theory and exiting literature which jointly and individual influence of the variables on the continuance intention which have been less investigated in previous studies. This research also can serve

foundation for the future research on e-government services and other online technologies in future. Therefore, could be convinced that this research have enriched and made significant contribution to the body of knowledge in continuance intention and e-government literatures as an important empirical study conducted in the context of Malaysia as one of the developing county. By identification this factors may increase and deepening the knowledge about the factors which could facilitate or hinders the continuance intention of users. Besides that, from this research expected had give some insights that where there is a real need for many research works to be conducted especially post adoption stage in e-government context.

#### **5.10.2 Practical Contribution**

The empirical research provides several timely and valuable implications, not only for fulfil knowledge gap, but also from practical standpoint for the further improvement of e-government services generally and e-filing system specifically. This study provides important practical contributions for e-government planners, policy makers, system developers, administrators and tax authority in Malaysia. First, the research provides some insights into the post adoption of e-government in general and e-filing system in particular which could provide useful valuable input and a clearer understanding of the factors that influence continuance intention. The full benefits and success of e-government services couldn't be realized without continuance usage of particular system because e-filing system specifically and e-government generally consider success if a significant number of users move beyond the initial adoption stage and use the e-service on continued basis. Thus, this study may assist the relevant entities to identify most appropriate actions can be taken and suitable support can be implemented to encourage voluntary compliance manner and continuous usage of tax

e-filing system among Malaysian taxpayers. Therefore it is also hoped that the key findings from this empirical research will benefit not only the government and tax authority, but also other nations which also made substantial investment in EG development initiatives for improving public services.

In managerial and policy perspective, the research provides valuable insights to tax authority in formulation of effective strategies that could help to sustain exiting e-filing users by continuously taking appropriate actions to encourage continuous usage to increase and achieve e-filing usage goal in near future. Especially on technical support by respond on time to the taxpayers complains to accelerate the acceptance and continuous usage.

The finding of this research revealed that perceived usefulness, satisfaction, trust and perceived system quality have significant influence on the citizens' continuance intention of e-filing system. Thus, the relevant entities or officials should pay more attention to those factors in order to increase the level of e-filing system continuous use intention. Firstly, the research found that satisfaction is the one of key determinant of continuance intention. Citizen perception is important for the full success of tax e-filing system, as the citizens or taxpayers plays important role as one of key user of the system. Thus, their satisfaction level towards the system will leave significant mark and progress on continuous usage. The citizens' input must be obtained and assessed. Hence, the tax authority should continuously survey users' feedback towards the system and develop strategies that will help increase user satisfaction with the tax e-filing system.

Secondly, the result suggests that designing and developing useful e-filing system is one of main an important aspect that contributes to continuance intention. The taxpayers' expectation about e-filing system will be adjusted during their personal use of the system. Their expectation will be clear after usage of e-filing system which contributes to set their post expectation (perceived usefulness) at appropriate level. Thus, this provides insights to system developers that by continuously improving and upgrading the usefulness of the tax e-filing system, government can maximize and indirectly encourage the taxpayers continued usage. Therefore, the tax authority should provide online help system and human help when taxpayers faced difficulties in completion tax task through tax e-filing system with for instance the help line should be available 24 hours for taxpayers during tax filing period which could help to accomplish tax filing task quickly and easily.

Other than that, to encourage continuous usage of e-filing system, government and IRBM should focus on building good trust with existing e-filing users. Trust found to be critical in predicting the e-filing system continuance in term of direct effect and indirect effect through mediation effect of satisfaction. Trust aspect couldn't be taking for granted by the tax authority. Thus, government and IRBM should continuously ensure and maintain citizen's trust towards the e-filing system by establishing a trustworthy relationship by demonstrates genuine management of taxpayers' confidential data and take full accountability of transaction through e-filing system. Other than that, the responsible entities should also strengthen the existing laws and regulations on personal data protection and privacy to prevent fraud, to bring more confidence and to ensure continuous trust towards e-filing system. IRBM and government also should always carryout survey and take care of e-filing system

environments is protected from security threats, revealed the taxpayers by displaying clear security and privacy statements and the related material in e-filing system website. In addition, the tax authority encouraged to increase security and privacy mechanisms by upgrading e-filing system by up to date protection software which could guarantee citizen's trust and make taxpayers feel confident that the data transaction is safely secured.

Additionally, the service provider should not overlook the perceived system quality factors which influence continuance intention. To maintain continued usage of tax e-filing system the system developer and IRBM have to maintain high level of system quality. Especially during peak period tax month, taxpayers' perception on system quality will be threatened when the taxpayers forced queue in the system and faced difficulties in accessibility. Thus, the responsible entities always need to aware, address and more focused should be given on the operational excellence of the provided online service by maintaining system response and continuously improving the quality of the e-services which benefits and make the process of tax filing task complete on time without queue in the system and always ensure the reliability of the network, function properly during pick time. Tax authority should keep on upgrading the e-filing system with latest technology in order to have up to date system for effective service delivery. Thus, this suggestion could help the tax authority to offer excellent service mechanism to define and fulfil users' needs related system quality to continuous use e-filing system in future.

As overall, it can conclude that in order to encourage continuous usage, to achieve target of usage and full success of tax e-filing system in near future, its requires the

government and the relevant entities to pay great attention, consider and understand taxpayers' perception on perceived usefulness, satisfaction, trust, confirmation, perceived system quality and perceived information quality issues of using this e-service to enhance improvement for greater e-government benefits realization. The usage of ICT in e-government services will not automatically lead to greater usage without fundamental understanding of citizens' needs and wants (Fakhoury & Aubert, 2015). Therefore, e-government services practitioners should analyze users' criticism and suggestions in order to comprehend the current and future needs. Thus, the finding of this research can be basis and help for continuous improvement of the existing system. As government spend huge amount of investment on the development and maintenance of e-government services, continuous usage of this e-services really important to get return on investment and to achieve goal of Malaysia which moving to ICT era of globalization. Since Malaysia and many other countries government faces the problem of a low level of e-government usage and critical challenges of continuous usage of this service, it is hoped that this research will give some valuable insights to e-government services providers and officials to increase the level of continuance intention towards e-government services. Through this action, it will increase enhance the credibility of e-government services in citizens' view. Besides that, the research focus on Malaysia, the key findings presented in the research may also have important implications for other Asian countries and developing countries with similar circumstance as Malaysia. Therefore, hope that the aforementioned recommendation will increase the acceptance and continuous usage intention of tax e-filing system which have been developed with huge amount of money and to achieve the intended target of usage in near future.



### **5.10.3 Methodological Contribution**

In examining the developed model, this study employed the SEM AMOS technique that permits assessment of the adequacy of the measurement model and the structural model. SEM AMOS has been gaining popularity in e-government studies, but few studies used that to investigate the ECM model with additional variables to explain the e-government service continuance intention. Thus, findings of this study imply that SEM AMOS can be used to analysis the proposed model to investigate e-filing system continuance intention among taxpayers in Malaysia.

### **5.11 Limitation of study**

Essentially the outcome of the current research have empirically produced valuable and interesting on continuance intention findings, it does, nevertheless, the study is not without some shortcomings. This research explored the research question only in the context of tax e-filing system in Malaysia. So, caution been considered in generalize the finding of this study in other developing countries or other context of e-government services. Generalizing these results to other countries requires caution, because different could be governmental structures and political system in other countries.

Next, the very less related literatures on the subject matter in Malaysia corroborate with current study was an issue. Very less research conducted in post adoption in e-government generally and e-filing system specifically. The researcher had to make reference with referring with other online technologies from developed and developing countries. Some of the difference in findings attributed to variation of particular online technology.

Other than that, it was not possible to collect individual online taxpayers' addresses from the Inland Revenue Board of Malaysia (IRBM). Due to personal confidentiality concerns, the IRBM authorities were unwilling to provide the addresses of the e-filing user of taxpayers.

In summary, while there are some limitations associated with the approach used, the results of this study have provided useful insights that should be of interest to both researchers and practitioners. List of these limitations may help to provide suggestion for future research. Future research may develop and refined understanding of the relationships proposed in this research in other context of e-government services.

#### **5.12 Recommendation for Future Study**

The research was used cross sectional design where data were collected using questionnaire survey once at a particular point of time. Because a user's beliefs and perception on online technology are expected to change over time with arrival of new e-services technologies which may change or influence user's expectations towards the online system. As this research is cross sectional, thus future research have opportunity and might supplement interviews with surveys for in-depth data collection among taxpayers in Malaysia Furthermore, the researcher suggests that longitudinal studies may used to discover user continuance intention in more detail and gain deeper understanding of the continuance intention among users of e-filing system.

Another possible future research direction is including additional variables that may influence continuance intention of e-filing system. Because the variables used in this

study cannot explain fully the factors that influence continuance intention, thus there might be other additional variables that may influence continuance intention of tax e-filing system among taxpayers. The future researches may include additional variables such as security, cost, time, motivation, service quality, past experience, training, regulation, incentives, integrity, anxiety in the model, which could help to better understand the structure of user's continuance intention. Since this study was based on ECM as underpinning theory, future research could extend this model with additional variables as mentioned above and test it in other e-government services context.

Furthermore, future research may further explore the unexpected insignificant relationships of perceived usefulness and satisfaction, perceived information quality and continuance intention, perceived information quality and satisfaction and the mediation effect of satisfaction on the relationship between perceived information quality and satisfaction to confirm or disconfirm the current research result and in the same or other context of studies in future.

This study focused on tax e-filing in Malaysia and does not take into account other online services in e-government services, this may limit the breadth of these conclusions and caution be taken in generalization of this finding in other context of e-government services. Future study could consider a wider range of e-government services which may show different relations between constructs. Thus, some difference could be obtained if the study is conducted in other countries and considering different online services due to different profiles of user, cultures, the level of ICT development and usage and etc. Generalizing these results to other countries requires caution, because different could be governmental structures and

political system in other countries. For instance, as people from different countries likely build trust perception differently (as stated in Belanche et. al, 2014). Further studies in different countries also would strengthen and validate the findings.

As overall, the limitation of this research offer opportunities for future research. The significance performance of the proposed model in this research suggests that the application of this model in investigation users' continuance intention of various other e-government services in future. The model developed in this research can be applied to other e-government services. Besides that, future research could conduct more related studies in e-government service generally and e-filing specifically in Malaysia settings since there are only a few studies focused on post adoption or continuance intention of e-government in Malaysia. Thus, consideration of the provided suggestion in this research by future researchers may greatly will help unravel the constructs and core underlying phenomenon of citizens' continuous use of tax e-filing system in particular and e-government services in general.

### **5.13 Conclusion**

As conclusion, huge investment have been made on the development of e-government service, ICT infrastructure and continuous improvement efforts have been taken by Malaysian government generally and IRBM specifically to provide online services. Thus, due to the increasing provision of government e-services through online, which have been invested huge amount of expenses for the development and maintenance by government but the limited adoption and challenges of continuance usage of particular technology by citizens, thus makes it is necessary to understand in more details which factors contributes to the continuance intention of these e-government

services generally and tax e-filing system specifically both theoretically and practically. As e-government services plays significant role in the globalization era which where most government department in the developed and developing countries including Malaysia taking initiative move to e-service as alternative to existing manual system. The full potential benefits of e-government services generally and e-filing system specifically cannot be achieved if large population of citizens not accept and fully utilize the e-services for long term continuously. Thus, when citizens use the e-government services on the continued basis the desired outcome of e-government service generally and e-filing system specifically can be achieved. Through continuous usage use of e-government services generally and e-filing system specifically, may contributes to achieve government goals and further to have successful e-government systems. Other than that, specifically taxpayers should be encouraged to use accept and use tax e-filing system continuously as there are many benefits of this system both to the taxpayers and government, such as timely accomplishment tax task and payment, reduced operational cost for both taxpayers and tax authority (IRBM) and government. Hence, the main purpose of this research is to invetigate the determinants of continuance intention of tax e-filing system by Malaysian taxpayers.

Furthermore, review of previous literatures identified that only limited studies have been focused on continuance intention of tax e-filing system. Most of the e-government research generally and e-filing system specifically has focused more on understanding the initial usage intention of particular e-services. However, research on e-filing continuance intention still scant, especially in Malaysia. Thus, the research adds to the understudied area of continuance intentions towards e-filing system in

Malaysia and in developing countries in general by investigating the influence of perceived usefulness, trust, perceived system quality, perceived information quality and satisfaction on continuance intention. The research also enhances e-government literature by providing insights into the factors that influences continuance intention towards e-filing system in Malaysia. Therefore exploring and identifying factors that contributes towards continuance intention of these online services is important to ensure success of particular system and to accomplish government goals on specified time frame. At the same time this can be guides for new e-government services development about the things citizens considered to make move and use e-government services in continuous basis.

Through review extant of prior studies have identified the conceptual linkages among perceived usefulness, confirmation, satisfaction, trust, perceived system quality and perceived information quality and continuance intention, as researcher aware of very less research studied all this variables comprehensively together in one model surprisingly absent and specifically in e-filing system continuance intention research. Empirical testing of the proposed model found that most of the paths are significant as in the hypothesized directions. The findings confirm that perceived usefulness, satisfaction, trust and perceived system quality have positive influence on continuance intention of tax e-filing system. While perceived information quality has insignificant influence on continuance intention. The research also found that confirmation, trust and perceived system quality have significant influence on satisfaction while perceived usefulness and perceived information quality have insignificant influence on satisfaction. Furthermore, satisfaction mediated the relation between perceived system quality and continuance intention; trust and continuance intention. However,

satisfaction does not mediate the relationship between perceived usefulness and continuance intention; perceived information quality and continuance intention. The finding indicates that perceived usefulness, satisfaction, trust and perceived system quality are important factors that determine continuance intention of tax e-filing system. Thus, government and tax authority should focus and more emphasize should be given on these factors to encourage continuous usage e-filing system and make e-filing task completion smooth by the taxpayers.

The researcher have used ECM as underpinning theory with the inclusion of other variables (trust, perceived system quality and perceived information quality) to determine continuance intention of tax e-filing system. And also has analyzed the mediating role of satisfaction on continuance intention of tax e-filing system in Malaysia.

Taken as a whole, this study has provided empirical evidence of the relationship between perceived usefulness, confirmation, satisfaction, trust, perceived system quality, perceived information quality and continuance intention in the context of tax e-filing system. The ECM theory has been validated in new context, tax e-filing system in Malaysia. Continuous supplementary studies should be conducted though, especially in regard to the increase in e-filing usage. This study could provide clear pictures about the reality faced by taxpayers who using tax e-filing for tax submission purpose and indirectly might give insights to IRBM and government about the effective action can be taken to encourage continuous usage, improvement of the quality of the system, increase transparency in taxation transaction and safe cost and time both to taxpayers and tax authorities. The identification and overcoming

challenges not an easy task but it's very important to consider if huge monetary investment involved in such development of projects. Besides theoretical contribution, the research results offered some practical recommendations to the relative entities in terms of the factors that could enhance continuance usage. Several directions for future research were also drawn based on the limitations of the study. In conclusion this research has theoretical, practical and methodological value to the body of knowledge in e-government research. The finding of the research also acknowledged that continuous usage of e-services is important for the full success of particular technology.





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## **APPENDIX**

### **APPENDIX ONE**

#### **Questionnaire Survey**





Dear respected respondents,

I am soliciting for your corporation to participate in my doctoral research survey which aims to examine factors that influence continuance intention of tax e-filing system. Respondents will have to fulfil criteria of having had used tax e-filing system by Inland Revenue Board Malaysia (IRBM) for submission of tax return at least once. This research interested to know users' personal experience or opinion on tax e-filing system. Your inputs will contribute the most valuable information to disseminate my findings. Please read the instruction for each section and please answer all the questions.

Please be assured that all information will be treated with absolute confidentiality and will be used for academic research purpose only. If you have any doubts, questions or needs clarifications, you may address them to me at the contact details below.

Thank you for your kind support and the time taken in answering this questionnaire.

Yours Sincerely,

Punitha A/P Chandra

PhD candidate,

School of Technology Management and Logistics,

University Utara Malaysia

06010 Sintok, Kedah

Email: [punitha.chandra@yahoo.com](mailto:punitha.chandra@yahoo.com)

Contact No.: 012-5013767





Responden yang dihormati sekalian,

Saya menghargai kerjasama anda untuk mengambil bahagian dalam kaji selidik penyelidikan kedoktoran saya yang bertujuan untuk mengkaji faktor-faktor yang mempengaruhi niat penerusan sistem cukai e-Filing. Responden perlu memenuhi kriteria iaitu pernah menggunakan sistem cukai e-Filing Lembaga Hasil Dalam Negeri Malaysia (LHDNM) untuk penyerahan penyata cukai sekurang-kurangnya sekali. Kajian ini bertujuan untuk mengetahui pengalaman peribadi pengguna atau pandangan mengenai sistem cukai e-Filing. Input anda akan menyumbang maklumat yang paling berharga untuk menyebarkan penemuan saya. Sila baca arahan untuk setiap bahagian dan sila jawab semua soalan.

Kami memberi jaminan bahawa semua maklumat akan menjadi kerahsiaan mutlak dan akan digunakan untuk tujuan penyelidikan akademik sahaja. Jika anda mempunyai sebarang keraguan, pertanyaan atau memerlukan penjelasan, anda boleh mengemukakananya kepada saya seperti butiran di bawah.

Terima kasih atas sokongan anda dan masa yang telah diluangkan untuk menjawab soalan kaji selidik ini.

Yang Ikhlas,

Punitha A/P Chandra

Calon PhD,

Pusat Pengajian Pengurusan Teknologi dan Logistik,

Universiti Utara Malaysia

06010 Sintok, Kedah

Email: [punitha.chandra@yahoo.com](mailto:punitha.chandra@yahoo.com)

No. Telefon Bimbit: 012-5013767

## **SECTION A:**

### **BAHAGIAN A:**

1) Have you ever used e-filing system to submit your tax return through online?

Adakah anda pernah menggunakan sistem e-Filing untuk mengemukakan penyata cukai melalui talian?

☐ Yes/ Ya

☐ No/ Tidak

(If “Yes”, answer the following questions)/ (Jika “Ya” jawab soalan-soalan yang berikutnya)

## **SECTION B: Demographic Factors**

### **BAHAGIAN B: Faktor-faktor Demografi**

1) Gender/ Jantina:

☐ Male/ Lelaki

☐ Female/Perempuan

2) Your Age/Usia anda:

☐ 25-34 years/ 25 – 34 tahun

☐ 35-44 years/ 35- 44 tahun

☐ 45-54 years/ 45-54 tahun

☐ 55 and above/ 55 dan ke atas

3) Race/ Bangsa:

☐ Malay/ Melayu

☐ Chinese/ Cina

☐ Indians/ India

☐ Others:(please specify)/ Lain-lain: (Sila nyatakan) \_\_\_\_\_

4) Highest level of education/ Tahap pendidikan tertinggi:

- ☐ Diploma/ Diploma
- ☐ Bachelor Degree/ Ijazah Sarjana Muda
- ☐ Master Degree/ Ijazah Sarjana
- ☐ Doctoral Degree/ Ijazah Kedoktoran
- ☐ Others: Please specify/ Lain-lain: (Sila nyatakan) \_\_\_\_\_

5) Monthly income/ pendapatan bulanan:

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> RM2000-RM2999 | <input type="checkbox"/> RM6000-RM6999 | <input type="checkbox"/> RM10,000 and above/ RM 10,000 dan ke atas |
| <input type="checkbox"/> RM3000-RM3999 | <input type="checkbox"/> RM7000-RM7999 |  |
| <input type="checkbox"/> RM4000-RM4999 | <input type="checkbox"/> RM8000-RM8999 |  |
| <input type="checkbox"/> RM5000-RM5999 | <input type="checkbox"/> RM9000-RM9999 |  |

6) Computer use experience/ Pengalaman menggunakan komputer:

- ☐ 1-10 years/ 1-10 tahun
- ☐ 11-20 years/ 11-20 tahun
- ☐ 21-30 years/ 21-30 tahun
- ☐ 31 years and above/ 31 tahun dan ke atas

7) Internet use experience/ Pengalaman menggunakan internet:

- ☐ 1-5 years/ 1-5 tahun
- ☐ 6-10 years/ 6-10 tahun
- ☐ 11-15 years/ 11-15 tahun
- ☐ 16-20 years/ 16-20 tahun
- ☐ 21 years and above/ 21 tahun dan ke atas

8) Which method did you use to file your income tax return this year? / Apakah kaedah yang digunakan untuk memfailkan penyata cukai pendapatan anda pada tahun ini?

☐ Manual/ Manual

☐ E-Filing/E-filing

9) Which method did you use to file your income tax return last year? / Apakah kaedah yang telah anda gunakan untuk memfailkan penyata cukai pendapatan anda pada tahun lepas?

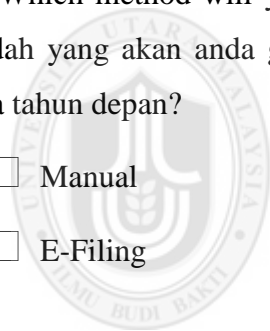
☐ Manual/ Manual

☐ E-Filing/ E-filing

10) Which method will you use to file your income tax return next year? / Apakah kaedah yang akan anda gunakan untuk memfailkan penyata cukai pendapatan anda pada tahun depan?

☐ Manual

☐ E-Filing



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**SECTION C**  
**BAHAGIAN C**

Please read each of the following items and tick (/) appropriately in the box that best explains your opinion.

*Sila baca setiap satu daripada perkara-perkara berikut dan tandakan (/) dalam kotak yang menjelaskan pendapat anda.*

Strongly Disagree/ Sangat Tidak Setuju	Disagree/ Tidak Setuju	Neutral/ Berkecuali	Agree/ Setuju	Strongly Agree/ Sangat Setuju		
1	2	3	4	5		
1.	Using the e-filing system by IRBM enables me to accomplish my tax filing task more quickly. <i>Dengan menggunakan sistem e-Filing IRBM, saya boleh menyelesaikan tugas pemfailan cukai saya dengan lebih cepat.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
2.	Using the e-filing system by IRBM improves my performance in managing my taxes task. <i>Dengan menggunakan sistem e-Filing IRBM, pelaksanaan pengurusan cukai saya bertambah baik.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
3.	Using the e-filing system by IRBM enhances my effectiveness in filing my taxes. <i>Dengan menggunakan sistem e-Filing IRBM, saya menjadi lebih cekap dalam memfailkan cukai saya.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
4.	Using the e-filing system by IRBM increases my productivity in preparing my taxes. <i>Dengan menggunakan sistem e-Filing IRBM, produktiviti saya dalam menyediakan cukai saya meningkat.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
5.	Using the e-filing system by IRBM makes my taxes filing easier. <i>Dengan menggunakan sistem e-Filing IRBM, pemfailan cukai saya menjadi lebih mudah</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
6.	I find that the e-filing system by IRBM is useful in filing my taxes. <i>Saya mendapati bahawa sistem e-Filing LHDNM berguna dalam memfailkan cukai saya.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

**SECTION D**  
**BAHAGIAN D**

Please read each of the following items and tick (/) appropriately in the box that best explains your opinion.

*Sila baca setiap satu daripada perkara-perkara berikut dan tandakan (/) dalam kotak yang menjelaskan pendapat anda.*

	<b>Strongly Disagree/ Sangat Tidak Setuju</b>	<b>Disagree/ Tidak Setuju</b>	<b>Neutral/ Berkecuali</b>	<b>Agree/ Setuju</b>	<b>Strongly Agree/ Sangat Setuju</b>			
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>			
1.	I trust the e-filing system by IRBM. <i>Saya percaya sistem e-Filing LHDNM.</i>			<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
2.	The e-filing system by IRBM is a reliable mean to carry out transactions. <i>Sistem e-Filing LHDNM boleh dipercayai untuk menjalankan urusan niaga.</i>			<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
3.	The e-filing system by IRBM is trustworthy. <i>Sistem e-Filing LHDNM boleh dipercayai.</i>			<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
4.	I believe that transaction through the e-filing system by IRBM proceed securely. <i>Saya percaya urusan niaga dibuat menggunakan e-Filing LHDNM berjalan lancar dengan selamat.</i>			<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
5.	I believe that my personal information kept confidential while using the e-filing system by IRBM. <i>Saya percaya maklumat peribadi saya disimpan sebagai sulit semasa menggunakan sistem e-Filing LHDNM.</i>			<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

**SECTION E**  
**BAHAGIAN E**

Please read each of the following items and tick (/) appropriately in the box that best explains your opinion.

*Sila baca setiap satu daripada perkara-perkara berikut dan tandakan (/) dalam kotak yang menjelaskan pendapat anda.*

	<b>Strongly Disagree/ Sangat Tidak Setuju</b>	<b>Disagree/ Tidak Setuju</b>	<b>Neutral/ Berkecuali</b>	<b>Agree/ Setuju</b>	<b>Strongly Agree/ Sangat Setuju</b>
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1. The e-filing system by IRBM is easy to use. <i>Sistem e-Filing LHDNM adalah mudah untuk digunakan.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
2. The e-filing system by IRBM is user friendly. <i>Sistem e-Filing LHDNM adalah mesra pengguna.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
3. The e-filing system provides necessary information and forms to be downloaded. <i>Sistem e-Filing LHDNM menyediakan maklumat dan borang yang diperlukan untuk dimuat turun.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
4. The e-filing system provides helpful instruction for performing my task. <i>Sistem e-Filing LHDNM menyediakan suruhan yang berguna untuk melaksanakan tugas saya</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
5. I believe that the e-filing system by IRBM cumbersome to use. <i>Saya percaya sistem e-Filing LHDNM rumit untuk digunakan.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
6. Using the e-filing system by IRBM requires a lot of effort. <i>Penggunaan sistem e-Filing LHDNM memerlukan usaha yang banyak.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
7. The e-filing system by IRBM is often frustrating. <i>Sistem e-Filing LHDNM sering mengecewakan.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

8.	The e-filing system by IRBM provides fast information access. <i>Sistem e-Filing LHDNM memberikan akses maklumat dengan cepat.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
9.	It only takes few clicks to locate information. <i>Dengan beberapa klik sahaja untuk mencari maklumat.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
10.	It is easy to navigate within the e-filing system by IRBM. <i>Adalah mudah untuk mengawal arah dalam sistem e-Filing LHDNM.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

## SECTION F BAHAGIAN F

Please read each of the following items and tick (/) appropriately in the box that best explains your opinion.

*Sila baca setiap satu daripada perkara-perkara berikut dan tandakan (/) dalam kotak yang menjelaskan pendapat anda.*

	<b>Strongly Disagree/ Sangat Tidak Setuju</b>	<b>Disagree/ Tidak Setuju</b>	<b>Neutral/ Berkecuali</b>	<b>Agree/ Setuju</b>	<b>Strongly Agree/ Sangat Setuju</b>
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1.	The e-filing system by IRBM provides sufficient information to accomplish task at hand. <i>Sistem e-Filing LHDNM menyediakan maklumat yang mencukupi untuk menyelesaikan tugas yang sedang dilakukan.</i>				
	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
2.	Through the e-filing system by IRBM, I get the information I need in time. <i>Melalui sistem e-Filing LHDNM, saya memperoleh maklumat pada masa yang diperlukan.</i>				
	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
3.	Information provided by the e-filing system by IRBM meets my needs. <i>Maklumat yang diberikan oleh sistem e-Filing LHDNM memenuhi keperluan saya.</i>				
	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5



4.	Information provided by the e-filing system by IRBM is in a useful format. <i>Maklumat yang diberikan oleh sistem e-Filing LHDNM adalah dalam format yang berguna.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
5.	Information provided by the e-filing system by IRBM is clear. <i>Maklumat yang diberikan oleh sistem e-Filing LHDNM adalah jelas.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
6.	Information provided by the e-filing system by IRBM is accurate. <i>Maklumat yang diberikan oleh sistem e-Filing LHDNM adalah tepat.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
7.	Information provided by the e-filing system by IRBM is up-to-date. <i>Maklumat yang diberikan oleh sistem e-Filing LHDNM adalah terkini.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
8.	Information provided by the e-filing system by IRBM is reliable. <i>Maklumat yang diberikan oleh sistem e-Filing LHDNM boleh dipercayai.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
9.	The e-filing system by IRBM maintains data at an appropriate level of detail for my purpose. <i>Sistem e-Filing LHDNM mengekalkan data terperinci yang sesuai untuk tujuan saya.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

**SECTION G**  
**BAHAGIAN G**

Please read each of the following items and tick (/) appropriately in the box that best explains your opinion.

*Sila baca setiap satu daripada perkara-perkara berikut dan tandakan (/) dalam kotak yang menjelaskan pendapat anda.*

	<b>Strongly Disagree/ Sangat Tidak Setuju</b>	<b>Disagree/ Tidak Setuju</b>	<b>Neutral/ Berkecuali</b>	<b>Agree/ Setuju</b>	<b>Strongly Agree/ Sangat Setuju</b>			
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>			
1.	My experience with using the e-filing system by IRBM was better than what I expected. <i>Pengalaman saya menggunakan e-Filing LHDNM adalah lebih baik daripada yang saya jangkakan.</i>			<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
2.	The service level provided by the e-filing system by IRBM was better than what I expected. <i>Tahap perkhidmatan yang diberikan oleh sistem e-Filing LHDNM adalah lebih baik dari yang saya jangkakan.</i>			<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
3.	Overall, most of my expectation from using the e-filing system by IRBM was confirmed. <i>Secara keseluruhan, sebahagian besar dari jangkaan saya daripada menggunakan sistem e-Filing LHDNM telah disahkan.</i>			<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

## SECTION H BAHAGIAN H

Please read each of the following items and tick (/) appropriately in the box that best explains your opinion.

*Sila baca setiap satu daripada perkara-perkara berikut dan tandakan (/) dalam kotak yang menjelaskan pendapat anda.*

Strongly Disagree/ Sangat Tidak Setuju	Disagree/ Tidak Setuju	Neutral/ Berkecuali	Agree/ Setuju	Strongly Agree/ Sangat Setuju			
1	2	3	4	5			
1.	My overall experience of the e-filing system by IRBM was very satisfied. <i>Keseluruhan pengalaman saya dengan sistem e-Filing LHDNM amat memuaskan.</i>		<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
2.	My overall experience of the e-filing system by IRBM was very pleased <i>Keseluruhan pengalaman saya dengan sistem e-Filing LHDNM amat menyenangkan.</i>		<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
3.	My overall experience of the e-filing system by IRBM was very contented. <i>Keseluruhan pengalaman saya dengan sistem e-Filing LHDNM memberikan kepuasan.</i>		<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
4.	My overall experience of the e-filing system by IRBM was absolutely delighted. <i>Berdasarkan pengalaman, sistem e-Filing LHDNM amat mengembirakan saya.</i>		<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

## SECTION I BAHAGIAN I

Please read each of the following items and tick (/) appropriately in the box that best explains your opinion.

*Sila baca setiap satu daripada perkara-perkara berikut dan tandakan (/) dalam kotak yang menjelaskan pendapat anda.*

Strongly Disagree/ Sangat Tidak Setuju	Disagree/ Tidak Setuju	Neutral/ Berkecuali	Agree/ Setuju	Strongly Agree/ Sangat Setuju		
1	2	3	4	5		
1.	I intend to continue using the e-filing system by IRBM rather than discontinue its use. <i>Saya bercadang untuk terus menggunakan sistem e-Filing LHDNM daripada berhenti menggunakannya.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
2.	My intention is to continue using the e-filing system by IRBM than use any alternative means (manual tax filing). <i>Niat saya adalah untuk terus menggunakan sistem e-Filing LHDNM daripada menggunakan alternatif yang lain (pemfailan cukai secara manual)</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
3.	If I could, I would like to continue using the e-filing system by IRBM as much as possible. <i>Jika boleh, saya mahu terus menggunakan sistem e-Filing LHDNM sebanyak mungkin</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
4.	I will use the e-filing system by IRBM in the future. <i>Saya akan menggunakan sistem e-Filing LHDNM pada masa hadapan.</i>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

THANK YOU

TERIMA KASIH

I sincerely appreciate your time and cooperation.

*Saya amat menghargai masa dan kerjasama anda.*

## APPENDIX TWO

### Non-response Bias

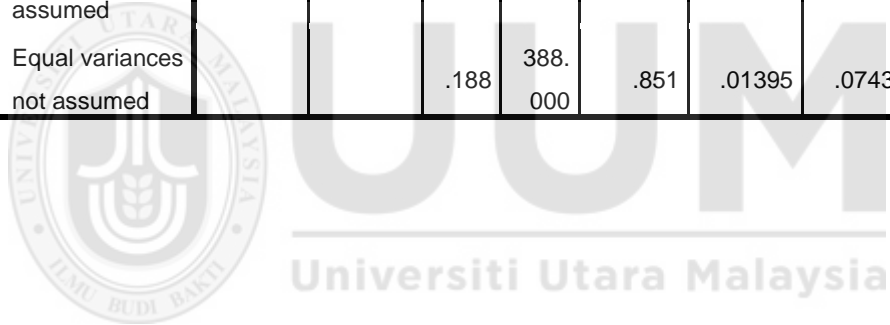
**Group Statistics**

	RESPO	N	Mean	Std. Deviation	Std. Error Mean
PU	Early Response	249	3.8313	.83071	.05264
	Late Response	176	3.8636	.74559	.05620
TR	Early Response	249	3.6048	.76029	.04818
	Late Response	176	3.6034	.66194	.04990
PIQ	Early Response	249	3.7309	.79877	.05062
	Late Response	176	3.6995	.78147	.05891
PSQ	Early Response	249	3.6783	.58414	.03702
	Late Response	176	3.7358	.62383	.04702
CONF	Early Response	249	3.4993	.68203	.04322
	Late Response	176	3.5436	.67565	.05093
SAT	Early Response	249	3.6837	.60835	.03855
	Late Response	176	3.7216	.59813	.04509
CI	Early Response	249	3.8122	.77716	.04925
	Late Response	176	3.7983	.73955	.05575

**Independent Samples Test**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
PU	Equal variances assumed	2.043	.154	-.412	423	.681	-.03231	.07845	-.18651	.12188
	Equal variances not assumed			-.420	399.691	.675	-.03231	.07701	-.18370	.11908
TR	Equal variances assumed	1.422	.234	.020	423	.984	.00141	.07103	-.13820	.14102
	Equal variances not assumed			.020	405.023	.984	.00141	.06936	-.13494	.13776

PIQ	Equal variances assumed	.254	.614	.403	423	.687	.03143	.07796	-.12181	.18467
	Equal variances not assumed			.405	381.926	.686	.03143	.07767	-.12128	.18414
PS Q	Equal variances assumed	.809	.369	-.971	423	.332	-.05748	.05917	-.17379	.05883
	Equal variances not assumed			-.961	361.224	.337	-.05748	.05985	-.17517	.06021
CO NF	Equal variances assumed	.456	.500	-.661	423	.509	-.04423	.06691	-.17574	.08728
	Equal variances not assumed			-.662	379.096	.508	-.04423	.06680	-.17557	.08711
SA T	Equal variances assumed	.036	.849	-.636	423	.525	-.03786	.05949	-.15480	.07909
	Equal variances not assumed			-.638	380.810	.524	-.03786	.05932	-.15449	.07878
CI	Equal variances assumed	.208	.649	.186	423	.853	.01395	.07502	-.13351	.16142
	Equal variances not assumed			.188	388.000	.851	.01395	.07439	-.13230	.16020



## APPENDIX THREE

### Missing Value

Result Variables						
	Result Variable	N of Replaced Missing Values	Case Number of Non-Missing Values		N of Valid Cases	Creating Function
			First	Last		
1	TR2_1	1	1	458	458	SMEAN(TR2)
2	TR3_1	1	1	458	458	SMEAN(TR3)
3	TR4_1	1	1	458	458	SMEAN(TR4)
4	PSQ2_1	1	1	458	458	SMEAN(PSQ2)
5	PSQ6_1	1	1	458	458	SMEAN(PSQ6)
6	PSQ7_1	1	1	458	458	SMEAN(PSQ7)
7	PSQ8_1	1	1	458	458	SMEAN(PSQ8)
8	PIQ1_1	1	1	458	458	SMEAN(PIQ1)
9	PIQ3_1	1	1	458	458	SMEAN(PIQ3)
10	PIQ5_1	1	1	458	458	SMEAN(PIQ5)
11	PIQ7_1	1	1	458	458	SMEAN(PIQ7)
12	Conf2_1	1	1	458	458	SMEAN(Conf2)
13	Sat1_1	1	1	458	458	SMEAN(Sat1)
14	Sat2_1	1	1	458	458	SMEAN(Sat2)
15	CI1_1	1	1	458	458	SMEAN(CI1)
16	CI2_1	1	1	458	458	SMEAN(CI2)
17	CI4_1	1	1	458	458	SMEAN(CI4)

## APPENDIX FOUR

### Outlier

Residuals Statistics <sup>a</sup>					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	19.31	426.01	229.50	61.671	458
Std. Predicted Value	-3.408	3.186	.000	1.000	458
Standard Error of Predicted Value	13.297	64.043	36.049	9.075	458
Adjusted Predicted Value	16.03	431.61	230.31	63.113	458
Residual	-281.979	255.800	.000	117.112	458
Std. Residual	-2.297	2.084	.000	.954	458
Stud. Residual	-2.387	2.150	-.003	1.002	458
Deleted Residual	-304.543	286.255	-.812	129.263	458
Stud. Deleted Residual	-2.401	2.160	-.003	1.003	458
Mahal. Distance	4.365	123.406	40.910	20.807	458
Cook's Distance	.000	.025	.003	.003	458
Centered Leverage Value	.010	.270	.090	.046	458

a. Dependent Variable: No



## APPENDIX FIVE

### Skewness and Kurtosis

Descriptive Statistics					
	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
PU1	425	-.763	.118	.214	.236
PU2	425	-.566	.118	-.026	.236
PU3	425	-.570	.118	.039	.236
PU4	425	-.265	.118	-.327	.236
PU5	425	-.560	.118	.045	.236
PU6	425	-.899	.118	.749	.236
TR1	425	-.505	.118	.849	.236
TR2	425	-.269	.118	-.038	.236
TR3	425	.002	.118	-.258	.236
TR4	425	-.198	.118	-.092	.236
TR5	425	-.488	.118	.385	.236
PSQ1	425	-.579	.118	.118	.236
PSQ2	425	-.555	.118	-.066	.236
PSQ3	425	-.634	.118	.158	.236
PSQ4	425	-.535	.118	-.215	.236
PSQ5	425	-.554	.118	.187	.236
PSQ6	425	-.570	.118	-.071	.236
PSQ7	425	-.504	.118	-.160	.236
PSQ8	425	-.489	.118	-.188	.236
PSQ9	425	-.514	.118	-.149	.236
PSQ10	425	-.407	.118	-.375	.236
PIQ1	425	-.077	.118	-.328	.236
PIQ2	425	-.150	.118	-.236	.236
PIQ3	425	-.181	.118	-.251	.236
PIQ4	425	-.246	.118	-.134	.236
PIQ5	425	-.374	.118	-.104	.236
PIQ6	425	-.185	.118	-.323	.236
PIQ7	425	-.114	.118	-.386	.236
PIQ8	425	-.197	.118	-.255	.236
PIQ9	425	-.313	.118	.011	.236
Conf1	425	-.402	.118	.644	.236
Conf2	425	-.169	.118	.213	.236
Conf3	425	-.699	.118	.813	.236
Sat1	425	-.072	.118	-.344	.236
Sat2	425	.045	.118	-.098	.236

Sat3	425	.042	.118	-.137	.236
Sat4	425	.130	.118	-.239	.236
CI1	425	-.727	.118	1.094	.236
CI2	425	-.434	.118	.184	.236
CI3	425	-.651	.118	.615	.236
CI4	425	-.908	.118	1.287	.236
Valid N (listwise)	425				



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## APPENDIX SIX

### Multicollinearity

Coefficients <sup>a</sup>								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.056	.185		-.304	.761		
	PU	.290	.039	.303	7.494	.000	.551	1.813
	TR	.141	.048	.133	2.924	.004	.434	2.304
	PSQ	-.006	.029	-.006	-.195	.845	.967	1.034
	PIQ	.150	.050	.128	2.972	.003	.489	2.045
	CONF	.253	.051	.226	4.946	.000	.432	2.315
	SAT	.221	.054	.175	4.095	.000	.493	2.027

a. Dependent Variable: CI



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## APPENDIX SEVEN

### Correlation

		Correlations						
		CI	PU	TR	PSQ	PIQ	CONF	SAT
Pearson Correlation	CI	1.000	.660	.646	.027	.608	.673	.617
	PU	.660	1.000	.622	-.017	.508	.565	.467
	TR	.646	.622	1.000	.088	.584	.643	.599
	PSQ	.027	-.017	.088	1.000	.116	.011	.055
	PIQ	.608	.508	.584	.116	1.000	.627	.614
	CONF	.673	.565	.643	.011	.627	1.000	.630
	SAT	.617	.467	.599	.055	.614	.630	1.000
Sig. (1-tailed)	CI	.	.000	.000	.286	.000	.000	.000
	PU	.000	.	.000	.363	.000	.000	.000
	TR	.000	.000	.	.035	.000	.000	.000
	PSQ	.286	.363	.035	.	.009	.410	.129
	PIQ	.000	.000	.000	.009	.	.000	.000
	CONF	.000	.000	.000	.410	.000	.	.000
	SAT	.000	.000	.000	.129	.000	.000	.
N	CI	425	425	425	425	425	425	425
	PU	425	425	425	425	425	425	425
	TR	425	425	425	425	425	425	425
	PSQ	425	425	425	425	425	425	425
	PIQ	425	425	425	425	425	425	425
	CONF	425	425	425	425	425	425	425
	SAT	425	425	425	425	425	425	425

## APPENDIX EIGHT

### Factor analysis (EFA) Exogenous

**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.943
Bartlett's Test of Sphericity	Approx. Chi-Square
	11631.100
	df
	465
	Sig.
	.000

**Pattern Matrix<sup>a</sup>**

	Factor				
	1	2	3	4	5
PIQ1	.887				
PIQ5	.877				
PIQ2	.874				
PIQ7	.867				
PIQ6	.853				
PIQ4	.822				
PIQ8	.817				
PIQ3	.771				
P1Q9	.766				
PSQ3		.936			
PSQ9		.910			
PSQ6		.865			
PSQ1		.861			
PSQ5		.853			
PSQ2		.793			
PSQ7		.768			
PSQ8		.634			
PU2			.895		
PU5			.867		
PU3			.864		
PU1			.828		
PU6			.810		
PU4			.656		
TR3				.870	
TR2				.801	
TR1				.752	
TR5				.717	
TR4				.679	
Conf2					.788

Conf1					.702
Conf3					.694

Extraction Method: Maximum Likelihood.

Rotation Method: Promax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

#### Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings <sup>a</sup>
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	11.401	36.776	36.776	11.086	35.761	35.761	6.452
2	6.607	21.313	58.090	6.323	20.398	56.159	8.995
3	2.659	8.576	66.666	2.377	7.666	63.825	7.957
4	1.505	4.856	71.522	1.206	3.891	67.717	8.057
5	1.005	3.243	74.765	.691	2.229	69.946	6.981
6	.616	1.987	76.752				
7	.573	1.847	78.599				
8	.517	1.667	80.266				
9	.471	1.520	81.786				
10	.456	1.472	83.259				
11	.420	1.355	84.614				
12	.398	1.282	85.896				
13	.373	1.204	87.100				
14	.333	1.074	88.174				
15	.319	1.030	89.204				
16	.302	.974	90.178				
17	.301	.970	91.149				
18	.280	.904	92.052				
19	.270	.870	92.922				
20	.248	.798	93.720				
21	.234	.754	94.474				
22	.222	.715	95.189				
23	.208	.672	95.861				
24	.191	.616	96.477				
25	.185	.597	97.073				
26	.175	.564	97.638				
27	.164	.528	98.166				
28	.157	.508	98.674				
29	.149	.480	99.154				

30	.145	.468	99.622				
31	.117	.378	100.000				

Extraction Method: Maximum Likelihood.

- a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.



## APPENDIX NINE

### Factor Analysis (EFA) Endogenous

**Pattern Matrix<sup>a</sup>**

	Factor		
	1	2	3
PU2	.902		
PU5	.853		
PU1	.847		
PU3	.840		
PU6	.837		
PU4	.637		
Sat1		.799	
Sat2		.788	
Sat4		.784	
Sat3		.763	
CI4			.965
CI3			.849
CI2			.787
CI1			.684

Extraction Method: Maximum Likelihood.

Rotation Method: Promax with Kaiser

Normalization.

a. Rotation converged in 5 iterations.

**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.922
Bartlett's Test of Sphericity	Approx. Chi-Square	4791.189
	df	91
	Sig.	.000



**Total Variance Explained**

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings <sup>a</sup>
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	7.741	55.294	55.294	7.415	52.964	52.964	6.310
2	1.875	13.395	68.689	1.484	10.603	63.566	5.016
3	1.016	7.254	75.943	.839	5.994	69.560	6.084
4	.615	4.391	80.333				
5	.559	3.994	84.327				
6	.395	2.820	87.147				
7	.307	2.192	89.339				
8	.289	2.066	91.405				
9	.254	1.817	93.221				
10	.222	1.585	94.806				
11	.208	1.484	96.290				
12	.185	1.322	97.612				
13	.183	1.307	98.919				
14	.151	1.081	100.000				

Extraction Method: Maximum Likelihood.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

## APPENDIX TEN

### Factor analysis Full

**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.950
Bartlett's Test of Sphericity	Approx. Chi-Square
	14722.061
	df
	741
	Sig.
	.000

**Pattern Matrix<sup>a</sup>**

	Factor						
	1	2	3	4	5	6	7
PSQ3	.936						
PSQ9	.922						
PSQ6	.874						
PSQ5	.867						
PSQ1	.848						
PSQ2	.794						
PSQ7	.764						
PSQ8	.600						
PIQ1		.887					
PIQ5		.876					
PIQ2		.874					
PIQ7		.866					
PIQ6		.854					
PIQ4		.823					
PIQ8		.817					
PIQ3		.772					
P1Q9		.766					
PU2			.888				
PU5			.874				
PU3			.843				
PU1			.832				
PU6			.831				
PU4			.657				
TR3				.879			
TR2				.787			
TR1				.769			
TR5				.707			
TR4				.665			

Sat2					.836		
Sat1					.765		
Sat3					.696		
Sat4					.682		
Cl4						.924	
Cl3						.823	
Cl2						.784	
Cl1						.642	
Conf2							.762
Conf1							.721
Conf3							.674

Extraction Method: Maximum Likelihood.

Rotation Method: Promax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

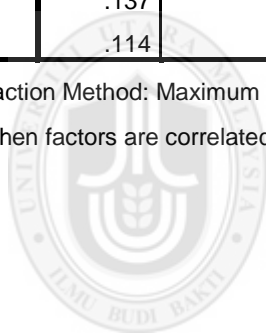
#### Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings <sup>a</sup>
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	15.049	38.587	38.587	14.721	37.745	37.745	11.239
2	6.655	17.063	55.650	6.372	16.340	54.085	6.479
3	2.748	7.047	62.697	2.462	6.314	60.399	10.124
4	1.747	4.479	67.176	1.399	3.588	63.986	10.511
5	1.291	3.311	70.487	1.010	2.589	66.576	9.517
6	1.053	2.700	73.187	.787	2.018	68.593	10.575
7	.887	2.274	75.461	.595	1.526	70.119	9.774
8	.646	1.655	77.117				
9	.589	1.511	78.628				
10	.574	1.472	80.101				
11	.515	1.320	81.421				
12	.465	1.193	82.614				
13	.462	1.185	83.799				
14	.430	1.102	84.901				
15	.409	1.049	85.950				
16	.391	1.001	86.951				
17	.373	.957	87.908				
18	.346	.887	88.795				
19	.318	.814	89.610				
20	.303	.777	90.387				

21	.301	.771	91.157			
22	.275	.705	91.862			
23	.261	.669	92.532			
24	.253	.648	93.180			
25	.237	.608	93.789			
26	.235	.602	94.390			
27	.215	.552	94.943			
28	.212	.543	95.485			
29	.196	.502	95.987			
30	.187	.479	96.466			
31	.183	.470	96.937			
32	.175	.449	97.385			
33	.167	.428	97.814			
34	.160	.411	98.225			
35	.159	.407	98.631			
36	.143	.367	98.998			
37	.139	.357	99.355			
38	.137	.352	99.707			
39	.114	.293	100.000			

Extraction Method: Maximum Likelihood.

- a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.



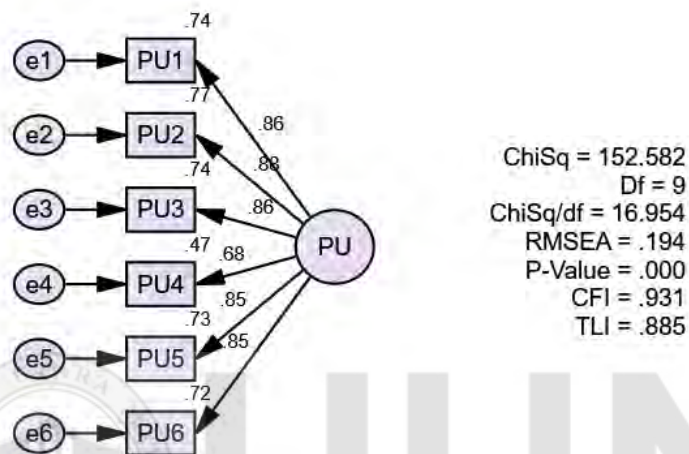
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## APPENDIX ELEVEN

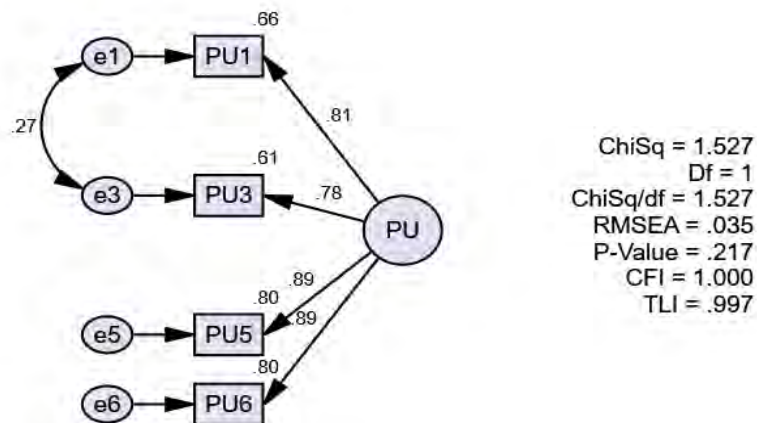
### Individual CFA results

#### PU

##### CFA PERCEIVED USEFULNESS

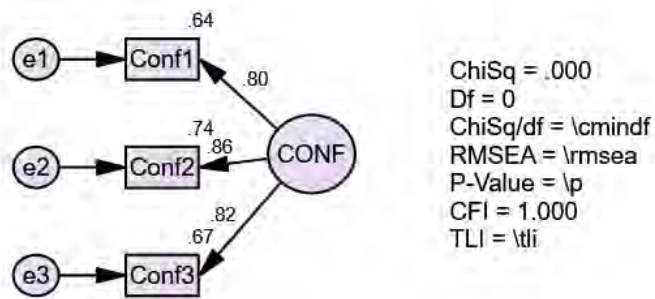


##### CFA PERCEIVED USEFULNESS



## Confirmation

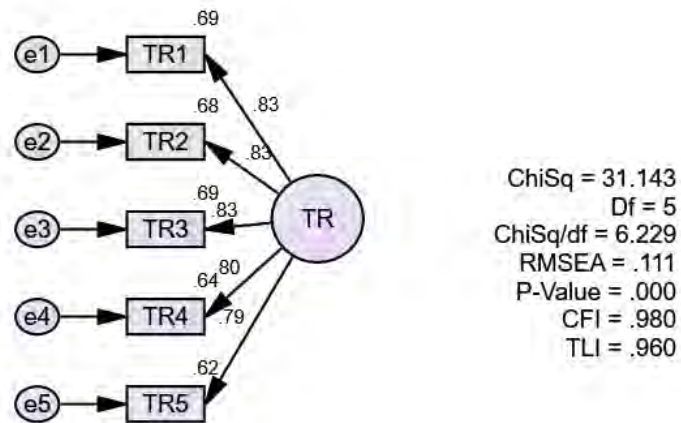
### CFA CONFIRMATION



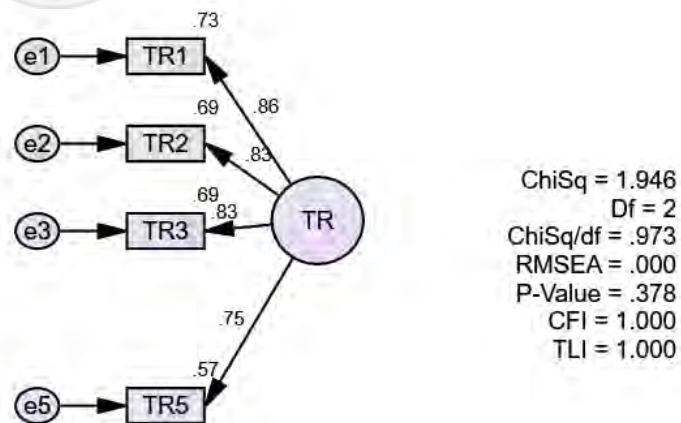
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## Trust

### CFA TRUST

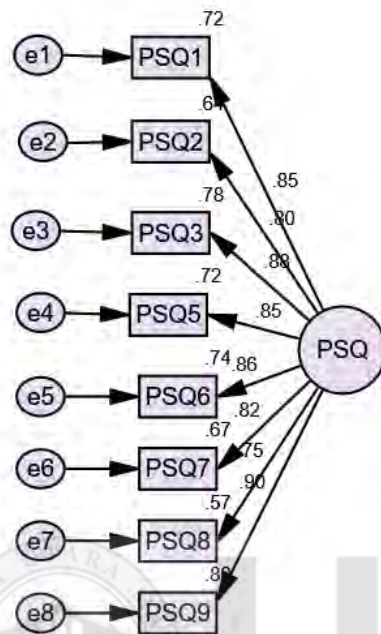


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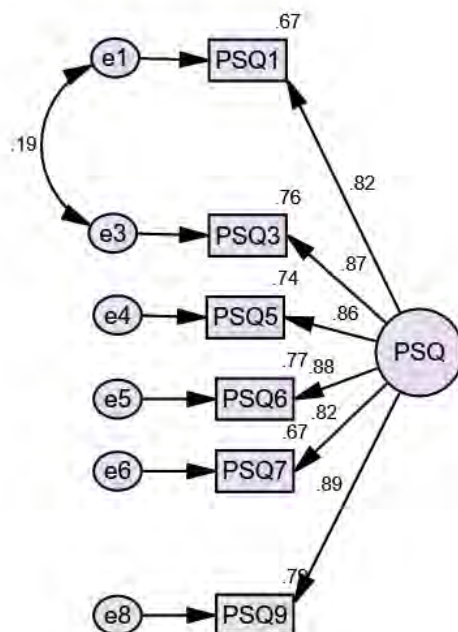
## Perceived System Quality

### CFA PERCEIVED SYSTEM QUALITY



ChiSq = 158.050  
Df = 20  
ChiSq/df = 7.903  
RMSEA = .128  
P-Value = .000  
CFI = .955  
TLI = .937

### CFA PERCEIVED SYSTEM QUALITY

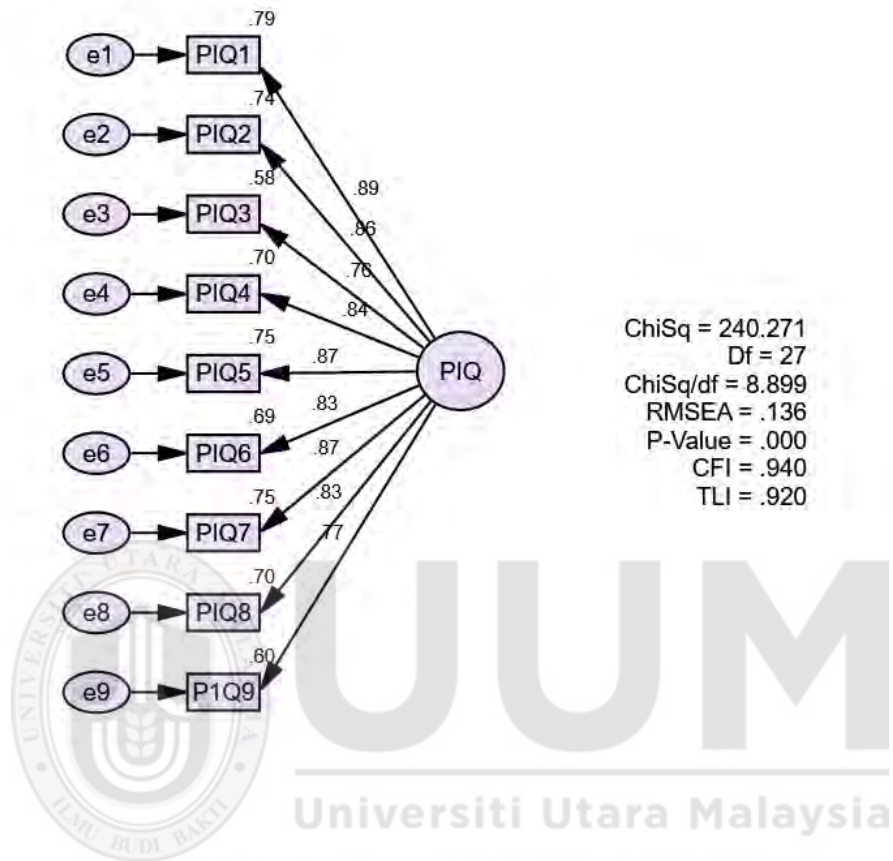


ChiSq = 26.568  
Df = 8  
ChiSq/df = 3.321  
RMSEA = .074  
P-Value = .001  
CFI = .992  
TLI = .984

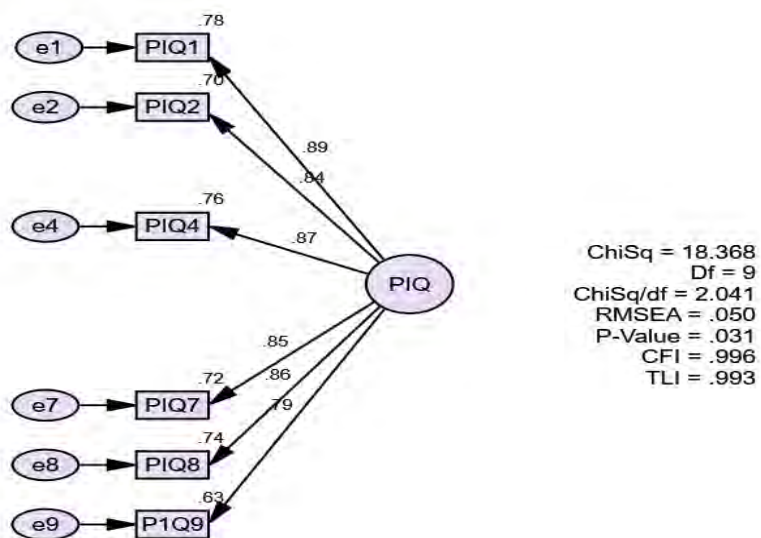


## Perceived Information Quality

### CFA PERCEIVED INFORMATION QUALITY

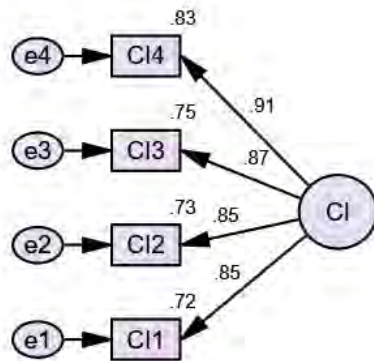


### CFA PERCEIVED INFORMATION QUALITY



## Continuance intention

### CFA CONTINUANCE INTENTION



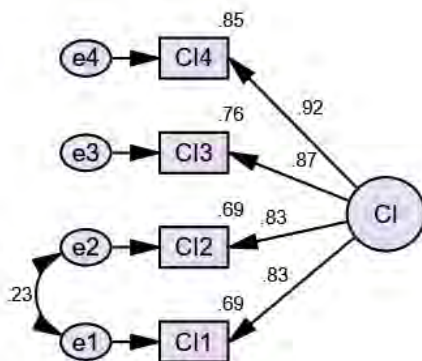
ChiSq = 13.171  
Df = 2  
ChiSq/df = 6.586  
RMSEA = .115  
P-Value = .001  
CFI = .992  
TLI = .975



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### CFA CONTINUANCE INTENTION

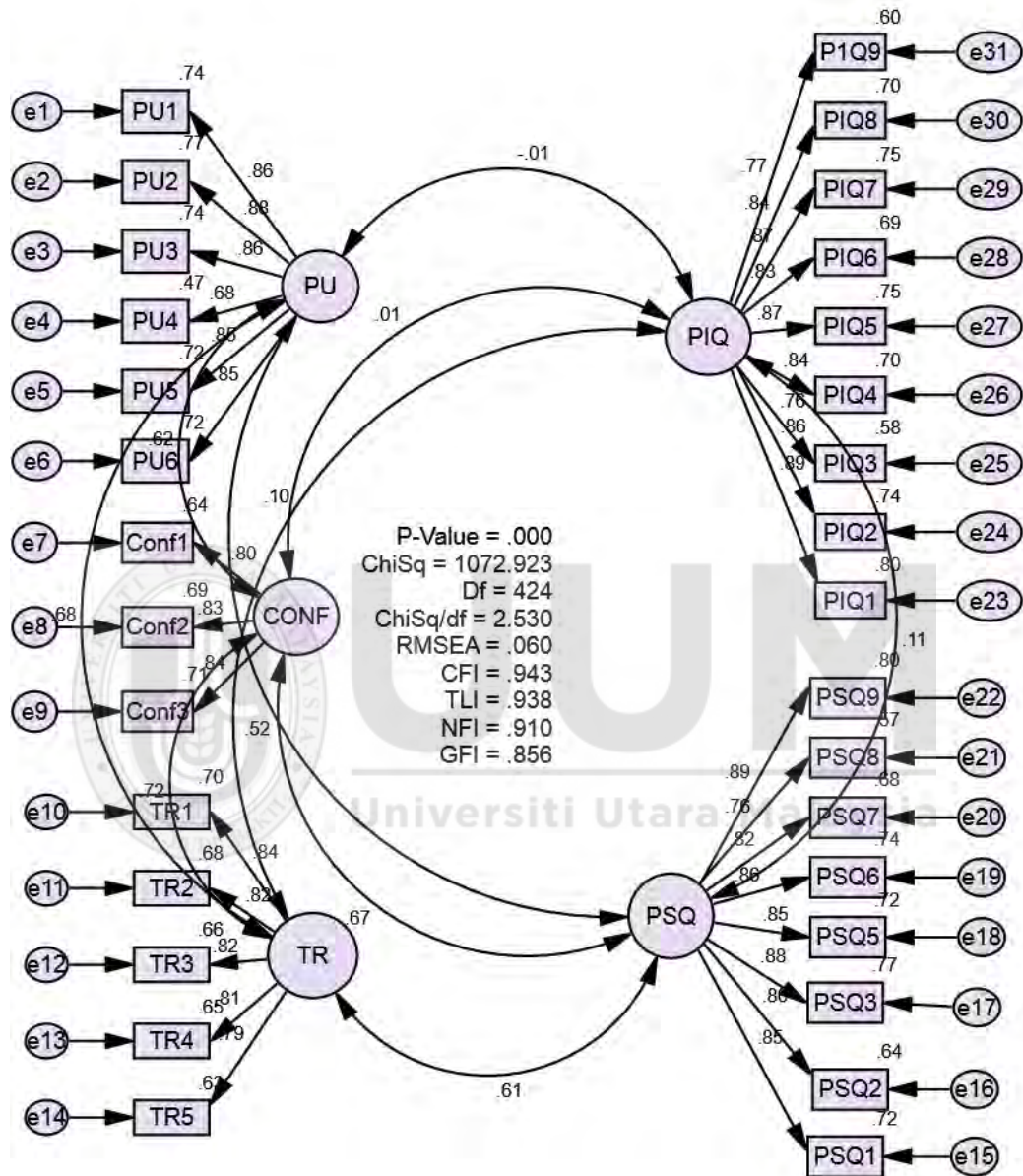
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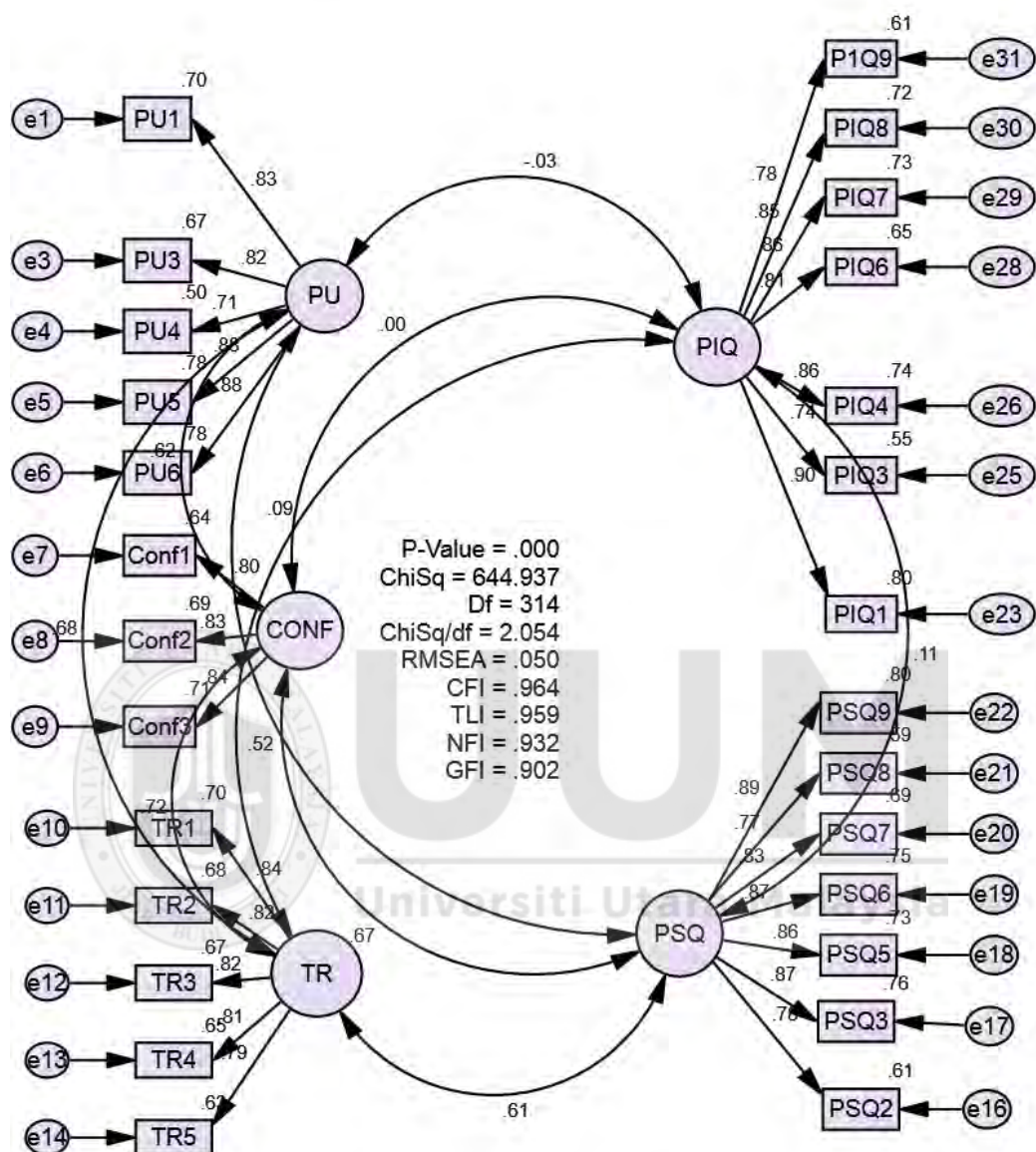
ChiSq = .428  
Df = 1  
ChiSq/df = .428  
RMSEA = .000  
P-Value = .513  
CFI = 1.000  
TLI = 1.003

## CFA Exogenous

### CFA EXOGENEOUS VARIABLES



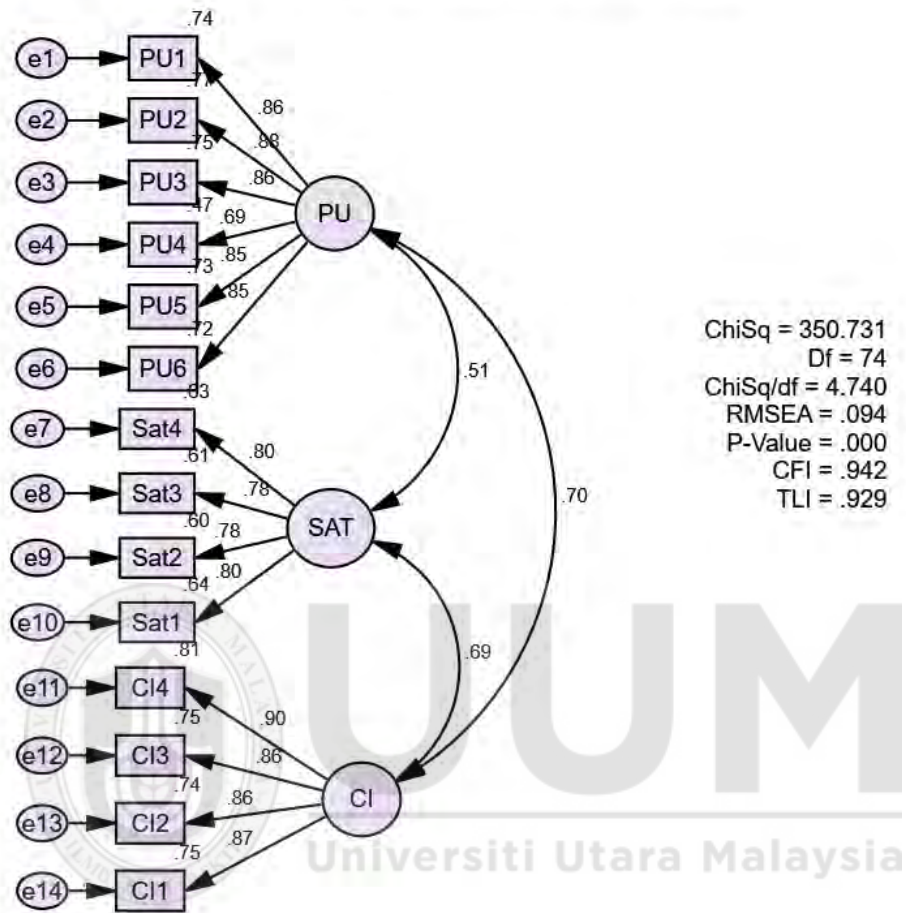
## CFA EXOGENEOUS VARIABLES



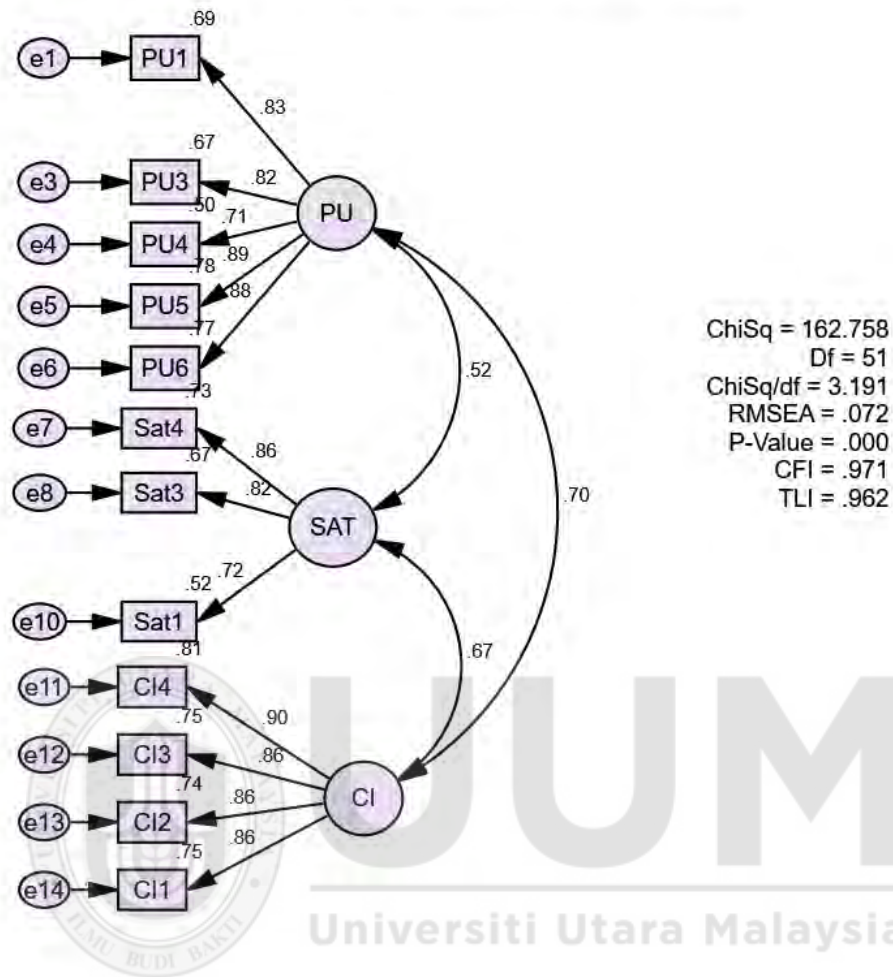


## CFA Endogenous

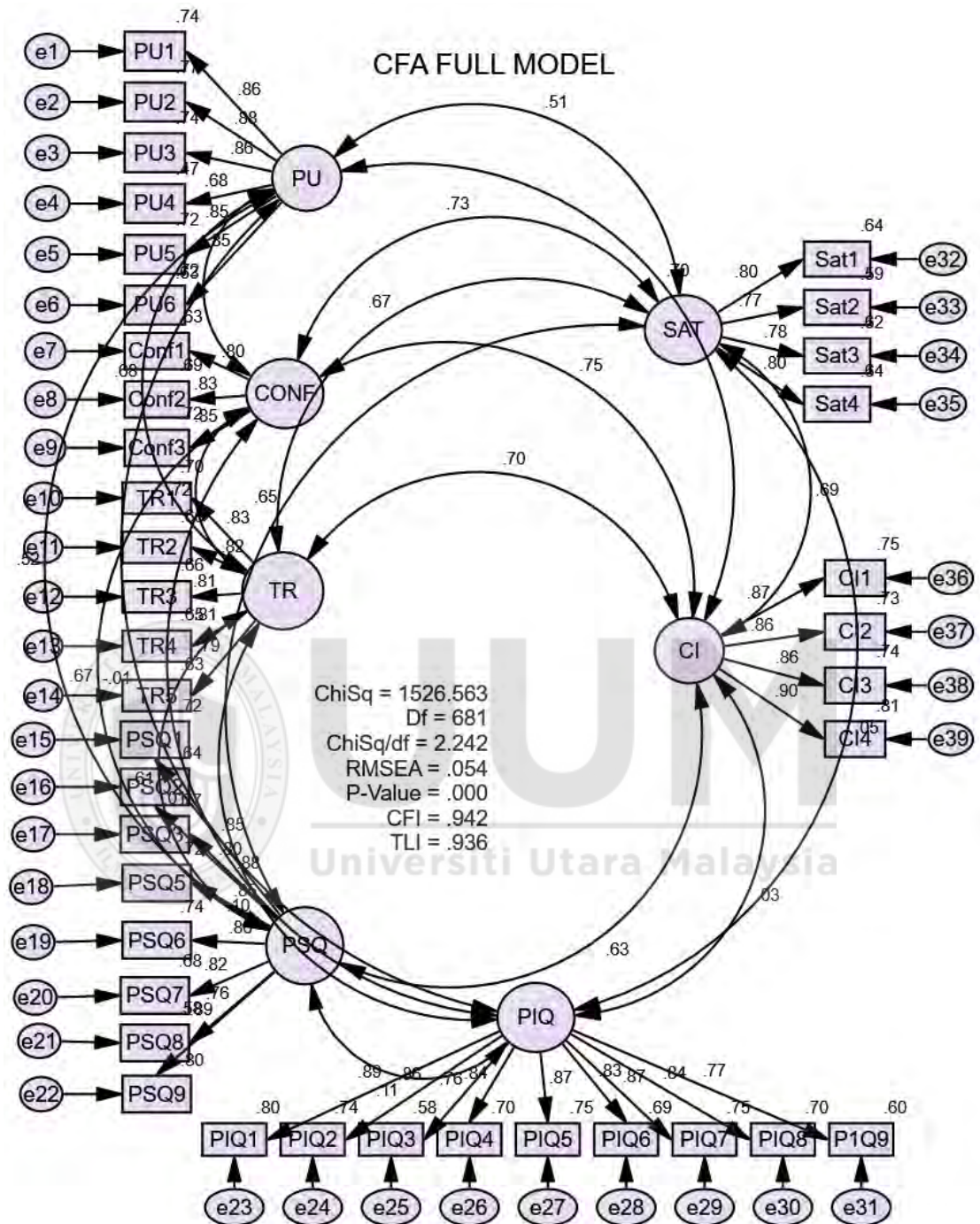
### CFA ENDOGENOUS VARIABLE



# CFA ENDOGENOUS VARIABLE

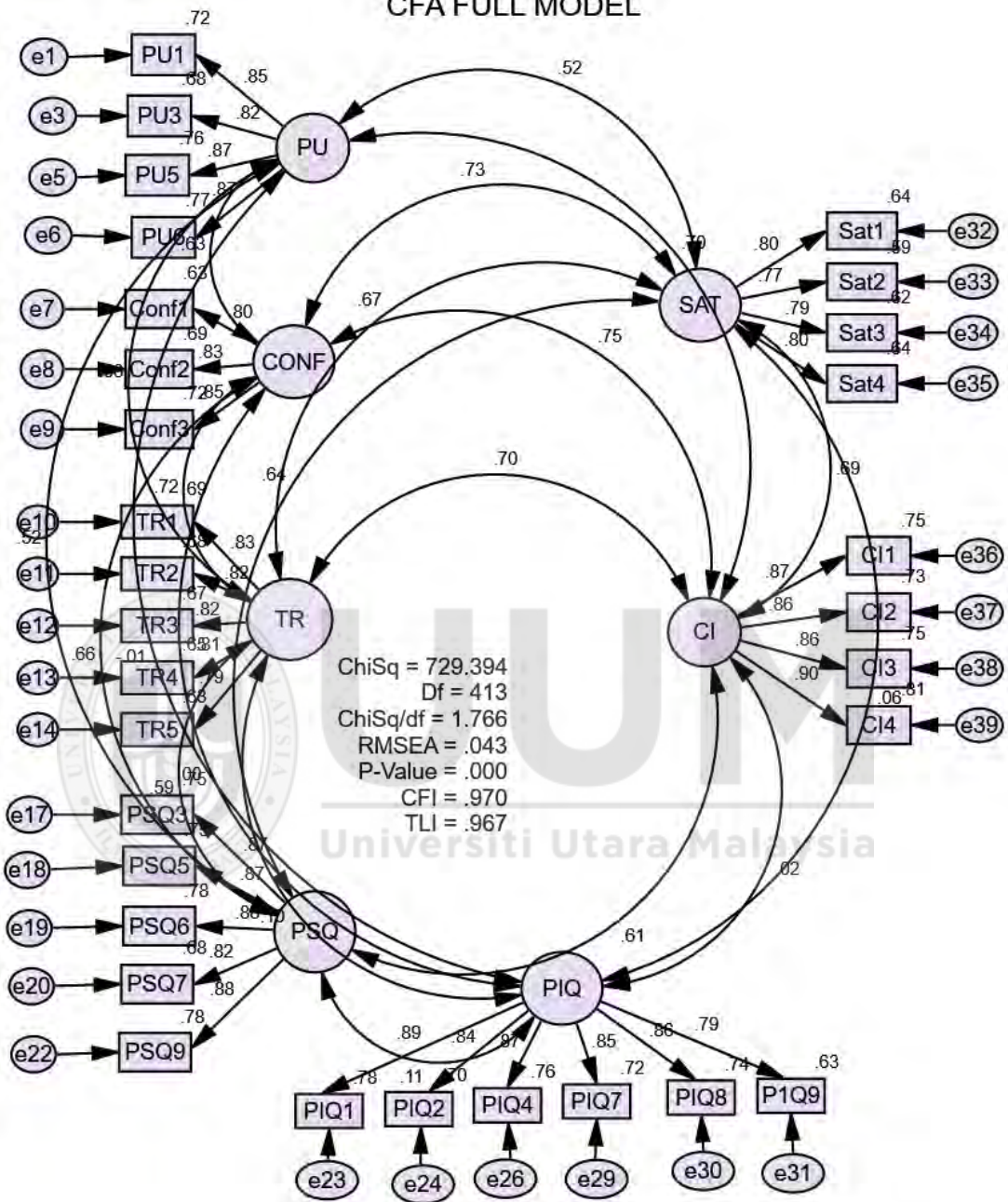


## CFA Full Model





# CFA FULL MODEL





## APPENDIX TWELVE

### Generated Model Output

#### Result of Generated Model

##### Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
PU	<---	CONF	.737	.059	12.453	***	par_27
SAT	<---	PU	-.027	.039	-.681	.496	par_28
SAT	<---	CONF	.338	.053	6.360	***	par_30
SAT	<---	TR	.227	.048	4.718	***	par_31
SAT	<---	PSQ	.212	.042	5.031	***	par_34
SAT	<---	PIQ	.007	.029	.251	.802	par_35
CI	<---	PSQ	.131	.046	2.857	.004	par_25
CI	<---	PIQ	-.014	.030	-.468	.640	par_26
CI	<---	PU	.313	.039	8.014	***	par_29
CI	<---	SAT	.395	.069	5.731	***	par_32
CI	<---	TR	.164	.053	3.118	.002	par_33