# FACTORS INFLUENCING CONTINUANCE USAGE INTENTION OF E-FILING SYSTEM AMONG TAXPAYERS IN MALAYSIA

**by**

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**DEDICATION**

*To my dad, the late "Mr. Thominathan Sebastian"*

*~ for being a strong advocate of education ~*

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***You'll meet more angels on a winding path than on a straight one.***

***~Terri Guillemets~***

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**FAKTOR-FAKTOR YANG MEMPENGARUHI PENGGUNAAN BERTERUSAN SISTEM E-FILING DALAM KALANGAN PEMBAYAR CUKAI DI MALAYSIA**

## ABSTRAK

Dalam persekitaran yang penuh persaingan kini, adalah penting untuk semua jenis perniagaan menekankan penggunaan perkhidmatan yang disediakan secara berterusan sebagai kunci pertumbuhan perniagaan dalam jangka panjang. Telah dihujahkan bahawa semakin lama sesuatu perniagaan dapat mengekalkan pelanggan, semakin bertambahlah pendapatan yang diperoleh dan kos perkhidmatan kepada pelanggan juga akan berkurangan. Kerajaan Malaysia telah mengeluarkan perbelanjaan yang besar dalam usaha membangunkan sistem e-filing yang semakin mendapat perhatian, dan penggunaan sistem ini menunjukkan trend yang meningkat dalam kalangan pembayar cukai dalam tempoh lima tahun pertama. Walaupun penerimaan awal terhadap sistem maklumat (IS) ini amat penting dalam merealisasikan kejayaannya tetapi kejayaan akhir terletak pada penggunaan sistem yang disediakan ini secara berterusan berbanding penggunaan kali pertama sahaja. Dalam konteks ini, penelitian terhadap penggunaan berterusan sistem e-filing dianggap penting kerana kos operasi dan pengurusan dapat dikurangkan dengan banyak apabila lebih ramai rakyat menggunakan sistem e-filing. Oleh itu, tujuan kajian ini adalah untuk meneliti hasrat atau niat pengguna daripada kalangan pembayar cukai di Malaysia untuk menggunakan sistem e-filing secara berterusan berdasarkan tiga aspek, iaitu kepercayaan terhadap sistem, ciri personaliti individu dan sikap bias optimistik. Saiz sampel terdiri daripada 731 pembayar cukai dari negeri-negeri di Semenanjung Malaysia, iaitu Pulau Pinang, Perak, Selangor, Kuala

Lumpur dan Johor. Data telah dikumpulkan dan dianalisis dengan menggunakan kaedah Model Persamaan Struktur (SEM). Kajian mendapati bahawa kepercayaan terhadap sistem mempunyai hubungan positif secara langsung dengan sikap pembayar cukai dalam mempengaruhi keinginan menggunakan secara berterusan sistem e-filing. Selain itu, faktor sikap juga didapati berfungsi sebagai pengantara dari segi kepercayaan terhadap sistem dan niat penggunaan berterusan sistem e-filing. Begitu juga, hasil kajian menunjukkan adanya hubungan yang signifikan antara kesan kepercayaan terhadap sistem dengan persepsi risiko penggunaan e-filing secara berterusan. Dari segi pemboleh ubah personaliti pula, didapati bahawa kehematan dan ekstraversi mempunyai kesan pemoderatan yang signifikan dalam hubungannya dengan persepsi kebergunaan dan niat untuk terus menggunakan sistem e-filing. Sebaliknya, individu yang kurang bersifat terbuka, neurotisisme dan memiliki kesetujuan yang tinggi mempunyai niat yang lebih tinggi untuk terus menggunakan sistem e-filing berdasarkan persepsi kebergunaannya yang baik. Didapati juga bahawa ciri personaliti neurotisisme dan kesetujuan mempunyai kesan yang besar terhadap pengesahan ke arah penggunaan sistem e-filing secara berterusan. Dari segi faktor bias optimistik, kajian mendapati hubungan yang tidak signifikan dalam niat penggunaan berterusan sistem e-filing. Tambahan pula, hasil kajian juga menunjukkan bahawa sikap ialah peramal yang paling kuat dalam mempengaruhi penggunaan berterusan sistem e-filing ini. Berdasarkan dapatan kajian, implikasi teori dan praktikal kajian ini juga disediakan.

**FACTORS INFLUENCING CONTINUANCE USAGE INTENTION OF E-FILING SYSTEM AMONG TAXPAYERS IN MALAYSIA**

## ABSTRACT

In this current competitive environment, it is important for businesses to accentuate on continuance usage as the key for long term growth. It has been argued that the longer a business can keep a customer, the greater the revenue can be earned from that customer and the cost of serving the customer also declines. Malaysian Government has spent huge amount of money in developing the e-Filing system which is receiving much attention and there has been an upward trend in the adoption of the system among taxpayers in the first five years. However, while initial acceptance of information system (IS) is very important toward realizing IS success but its eventual success depend on its continued use rather than first-time use. In this vein, investigating the continuance usage intention of e-filing system is deemed to be important because as more citizens use the e-filing system the more operation and management cost can be reduced. As such, the purpose of this study was to examine the continuance usage intention of the e-filing system among taxpayers in Malaysia based on three important individual beliefs which is trust in the system, personality and optimism bias. The sample size comprises 731 taxpayers from the urban states of Peninsular Malaysia which comprises Penang, Perak, Selangor, Kuala Lumpur and Johor were collected and analyzed using Structural Equation Modeling (SEM). The study found that, trust in the system has a direct positive relationship towards attitude of taxpayers in influencing their continuance usage intention of the e-filing system. Moreover, attitude was found to mediate the relationship

between trust in the system and e-filing continuance intention. Similarly, on the impact of trust in the system on the perception of risk towards e-filing continuance usage intention, the result implies a significant relationship. Additionally, on the personality variables, it was found a significant moderating effect of personality traits of conscientiousness and extraversion on the relationship between perceived usefulness and e-filing continuance usage intention. On the other hand, individuals who are low in openness, neuroticism and high in agreeableness have a higher intention to continuously use the e-filing system due to its perceived usefulness. Likewise, neuroticism and agreeableness was found to have a significant effect on confirmation towards e-filing continuance usage intention respectively. In contrast, optimism bias was found to be insignificant towards e-filing continuance usage intention. Furthermore the result also demonstrated that attitude is the strongest predictor towards the e-filing continuance usage intention. Based on the findings, the theoretical and practical implication of the study was also provided.

# CHAPTER 1

# INTRODUCTION

## 1.0 Introduction

This chapter contains the background of this study, problem statement, research objectives, research questions, definition of key terms, and significance of the study and organization of remaining chapters.

## 1.1 Background

With the emergence of information and communication technologies (ICT) there has been intensified competition and stimulated growth of most organizational functions and processes. Many organizations and governmental agencies are exploring the potential of using ICTs for services delivery (Chen, 2010). The main contributing factor for such emergence in ICT is the increasing popularity of the Internet. The increasing number of internet users has actually led many private organizations in utilizing the internet as a new way of conducting business, known as "e-commerce". The speedy growth in the use of the internet and the emergence of e-commerce has eventually increased the pressure on the government to cater for citizens' needs via this new medium which is known as "e-government" (Vathanophas, Krittayaphongphun & Klomsiri, 2008). E-government represents a fundamental change in the whole public sector structure, values, culture and the ways conducting business by utilizing the potential of ICT as a tool in the government agency (Alshehri, Drew & Alfarraj, 2012). Today, e-government uses ICT to promote citizen participation, publish information and administer governmental systems. Government-to-citizens (G2C), government-to-business (G2B), and

government-to-government (G2G) applications are becoming commonplace (Chen, 2010).

E-government is defined as the use of ICT and its application by government for the provision of information and public services to the people (UN Global E-government Readiness Report, 2005). According to Fang (2002) the term e-government or electronic government refers to the use of information technology by government agencies, such as web-based Networks, the Internet, and mobile computing, that have the ability to transform relations with citizens, businesses, and other arms of government.

There are several reasons pointed out by Bhatnagar (2009) for the implementation of e-government services in developing countries. Among the reasons, according to him is firstly due to the expectations of citizens. Countries that have advanced ICT infrastructure invest in e-government because of their population's expectations that the government provide services at the same rate of efficiency and speed that is offered by the private sector. Second reason for the implementation is on improving the efficiency of the public sector to increase economic competitiveness. Thirdly, a number of countries have invested in e-government applications to reduce the administrative burdens on the private sector and increase foreign investment. Fourthly is to encourage citizens to move towards self-services to save cost and time for both citizens and the government and lastly the implementation also adds as a source of pride especially for the pioneers in the e-government field. For example, Brazil launched an electronic voting system and they are proud that it is a better system than that of the United State.

A useful indicator to determine the status of e-government in developing countries is by comparing its e-government readiness index with the other countries

(Bhatnagar, 2009). According to United Nations E- Government Survey (UNPAN) (2012), in terms of e-government leaders in Asia, Malaysia's e-government development index value has improved from 0.6101 (2010) to 0.6703 (2012) although its ranking has declined from the ranking of six to eight. However, Malaysia continued to be the 2nd leading country in the South East Asian Region behind its neighboring country Singapore as the leader with an index of 0.8474 and Brunei in third ranking with an index of 0.6250. Malaysia's strategic shift into the information and knowledge era offers the country and the world an attractive global multimedia environment where the unique elements and attributes of information, ideas, people, service and technology are able to fuse, grow and deliver a globally replicable chain of innovative products, services and best practices (Muhammad Rais & Nazariah, 2003).

Guided by the Vision 2020, Malaysia has embarked on an ambitious plan by launching the Multimedia Super Corridor (MSC) in August 1996 as a platform to build a competitive market for the ICT companies and industries which will be executed in three phases from 1996 – 2020 (Hussein, Mohamed, Ahlan, Mahmud & Aditiawarman (2010).

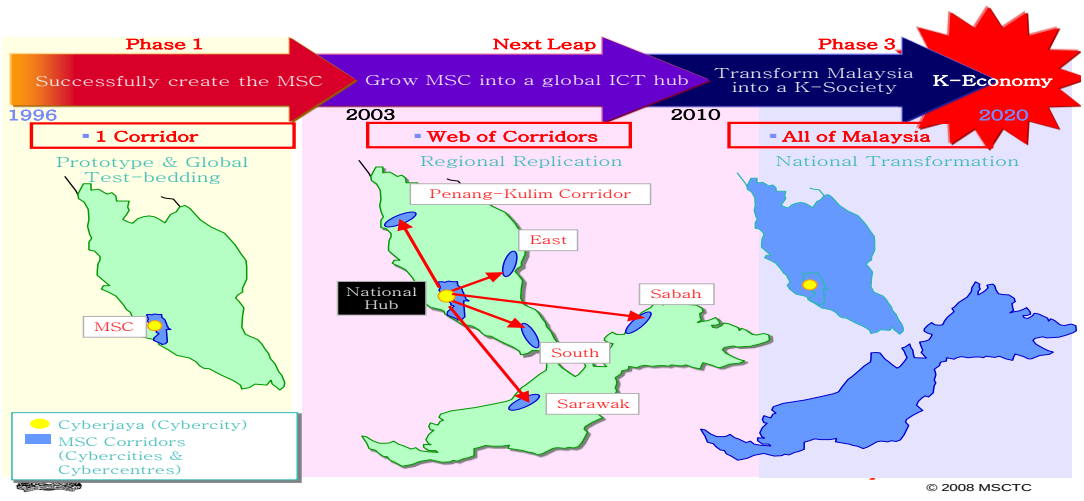


Figure 1.1: *MSC phases* (Adopted from MSC Technology Centre, 2008)

Seven specific flagship applications were identified as the pioneering MSC projects, which includes (Muhammad Rais & Nazariah, 2003):

1. e-Government
2. Telemedicine/ Telehealth
3. Multi-Purpose Card
4. Smart Schools
5. R&D Cluster
6. World-wide Manufacturing Web, Borderless Marketing
7. Technopreneur Development

Under the e-government flagship, seven main projects were identified to be the core of e-government applications. The e-government projects are:

a. Electronic Procurement (e-Perolehan)
b. Project Monitoring System (PMS)
c. Electronic Service Delivery (eServices)
d. Human Resource Management Information System (HRMIS)
e. Generic Office Environment (GOE)
f. E-Syariah
g. Electronic Labor Exchange (ELX)

Besides these seven main projects, several government agencies have taken initiatives to introduce online services for the public. Among them were: (Ambali, 2009).

- Public Service Portal (mygovernment)
- e-Tanah

- e-Consent
- e-Filing
- e-Local Government (e-PBT)
- e-Kehakiman
- Customs Information System (SMK)
- Pension Online Workflow Environment (POWER)
- Training Information System (e-SILA)

The Vision of e-Government is to transform administrative process and service delivery through the use of ICT and multimedia (Lean, Zailani, Ramayah & Fernando, 2009). As such, in the context of this study, e-government would refer to the use of ICT and multimedia by the government of Malaysia in providing the public service delivery to its citizens and the focus will be on the filing of income tax via online by the taxpayers which is known as E-Filing system.

**1.2 E-Filing in Malaysia**

Technological evolution in taxation has demonstrated a replacement of manual paper returns by electronic filing (e-Filing) systems. This phenomenon is happening around the world (Ibrahim & Pope, 2011). For example, Singapore introduced direct electronic filing for individual tax payers in 1998 and collected total tax revenue amounted to USD 22.9 billion for the financial year 2007. Guatamelan online tax filing and payment system (BancaSAT) was introduced in 2001 and its tax revenue in 2001 was USD2.1 billion (Bhatnagar, 2009). Malaysia also does not want to be left behind in using the latest technology. In 2006 the Malaysian Inland Revenue Board (IRBM) on behalf of the government introduced a

system to file income tax electronically known as e-Filing. The objectives of e-Filing are to facilitate tax compliance and to provide taxpayers service through the use of Internet technologies and WWW (Hussein et al., 2010).

Traditionally, the Malaysian taxpayers had filed their tax manually by completing their BE and B(Resident Individual), M (Non-Resident Individuals), P,E (Others), C, R and CP204(Companies) forms, do a self calculation on their tax, attaching together all the payment receipts and submitting them over in person or by mail to the IRBM branches. IRBM will later send the confirmation on the tax payment amount to be settled by the taxpayers. However a new paradigm had taken place with the introduction of E-Filing system or online tax filing in 2006 and ever since has undergone a progressive improvement with a more robust engine promised to the users'. E-Filing system as a whole integrates tax preparation, tax filing and tax payment, which serves as a major advantage over traditional manual procedure (Ambali, 2009). Since its introduction in 2006, e-Filing has evolved each year in order to provide better service to the taxpayers. Figure 1.2 below shows the progress of e-Filing system since its introduction

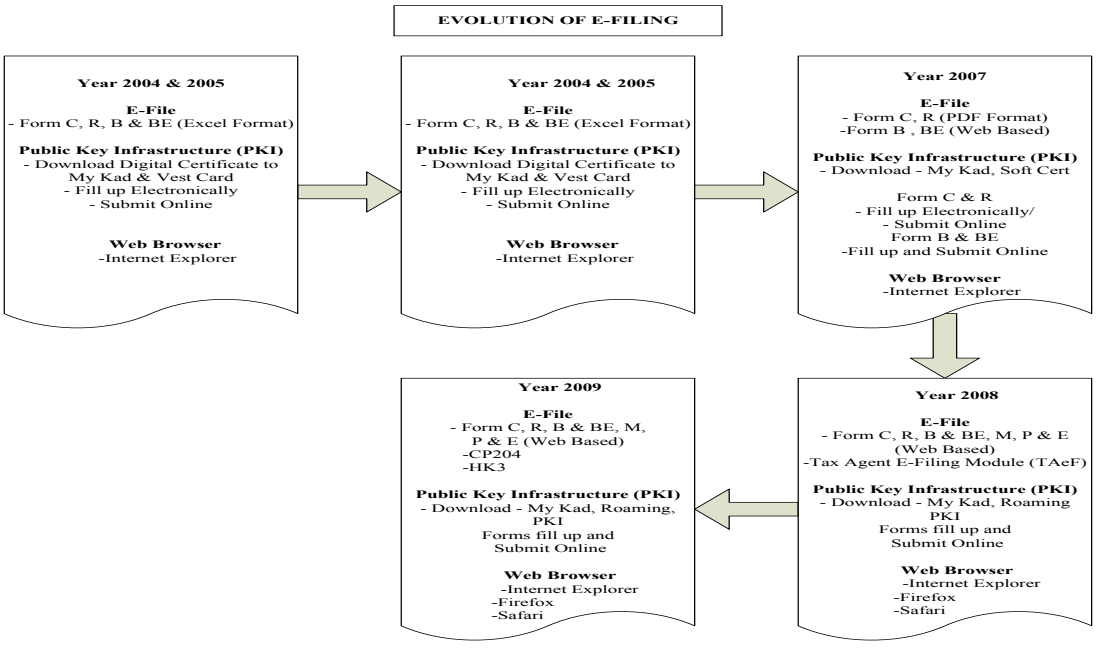


Figure 1.2: *Evolution of e-Filing* (Adopted from Hasmah, 2009)

Currently there are two major methods of tax filing in Malaysia: Manual and E-Filing. Taxpayers are free to choose their preferred way of filing the tax. Below is the submission methodology for tax filing either manual or online.

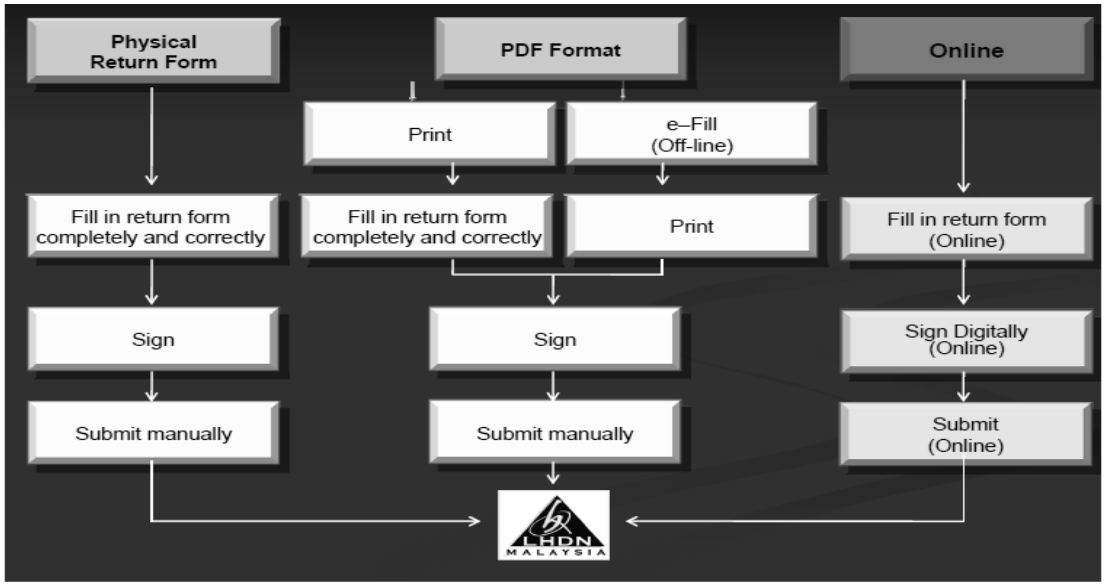

Figure 1.3: Tax Filing Submission Methodology (Adopted from Hasmah, 2009)

According to Hasmah (2009), the main mission of IRBM is to provide taxation services with quality and integrity towards promoting voluntary compliance by the taxpayers. Apart from main mission, there were double objectives of implementing e-Filing system by IRBM. Firstly, to become a more effective agency in the operational and processing tasks involving tax filing returns and secondly to serve the taxpayers better by overcoming the difficulties of paper based system (Ambali, 2009). According to Hasmah (2009) further, the manual filing of tax method provides disadvantages for both the taxpayer and also to IRBM. Among the disadvantages pointed out by her are (refer Table 1.1 below):

Table 1.1
*Disadvantages of Manual Filing*

| Taxpayer | IRBM |
|---|---|
| • Filing paper return can be tedious and time consuming | • Manual data entry |
| • Computation errors made by tax payers | • Higher Operational and Administrative Cost |
| • Postal or hand delivery to IRBM | • Large storage space required to keep the returns |
| • Missing mail | • Manpower to handle and process |

Alternatively, e-Filing serves measurable benefits to the both taxpayers and the revenue body. E-Filing can be beneficial in terms of (refer table 1.2):

Table 1.2
*Advantages of E-Filing*

| Taxpayers | IRBM |
|---|---|
| 1) "Convenience" which is easy and available 24 hours and 7 days a week, accessible anywhere via internet and user friendly (Azmi & Kamarulzaman, 2010; Ilias, Suki & Yasao, 2008) | 1) Cost effectiveness whereby it reduces printing cost on return forms, imaging, storage (Ibrahim & Pope, 2011; Hasmah, 2009); processing cost (Ramayah, Ramoo & Ibrahim, 2008) and operational cost (Azmi & Kamarulzaman, 2010) due to the submission of tax returns in a paperless environment. |
| 2) Saves time as the tax returns are sent electronically to IRBM (Azmi & Bee, 2010; Ilias et al., 2008) | 2) Reductions in processing time of return forms (Ibrahim & Pope, 2011) and eventually speed up the tax refund or repayment (Hasmah, 2009). |
| 3)Accurate tax calculation as it is done automatically by the system (Zakaria, Hussin, Zakaria, Noordin, Sawal, Saad & Kamil, 2009; Ilias et al, 2008) | 3) Increased Productivity as e-Filing minimizes the IRBM staff's workload particularly in peak season (Azmi & Kamarulzaman, 2010; Hasmah, 2009) |

Table 1.2 *(continued)*

| | |
|---|---|
| 4) Reducing the audit cycle and avoiding data transfer errors (Ibrahim & Pope, 2011) | 4) Improve efficiency of tax assessment method by increasing tax collection and reducing computation errors (Azmi & Bee, 2010) |
| 5) Secured as the usage of Public Key Infrastructure to access the system and the digital signatures usage in transferring the data (Zakaria et al., 2009; Ilias et al., 2008). | |

The submission via e-Filing has shown a tremendous increase since its launching in 2006 particularly for individual taxpayers. The number of submissions grew from 186,271 (2006) to 873,095 (2007) (Annual Report IRBM, 2007) to 1,171,105 (2008) to 1,466,507 (2009) (Annual Report IRBM, 2009) to 1,666,134 (Annual Report IRBM, 2010). This shows that 33% of the total registered individual taxpayers (5,040,782) have filed their income taxes via e-Filing in 2010 (Annual Report IRBM, 2010). The number of submissions increased further to 1, 914,110 (2011) and 2,268,258 (2012) (Jali, M. A. (IRBM), email communication, May 3, 2013).

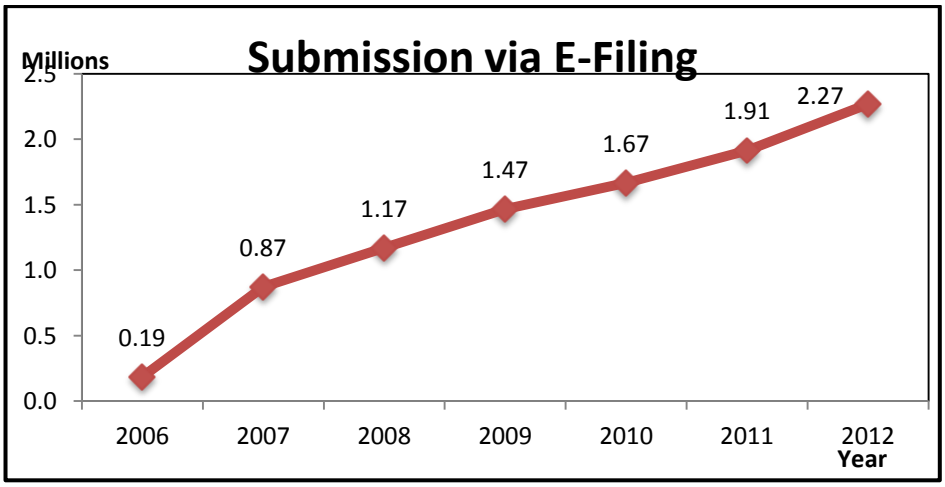


Figure 1.4: *Submission via E-Filing* (Adapted from Annual Report IRBM and Jali, M. A.)

## 1.3 Research Problem

### 1.3.1 Background to the Problem

Malaysia's ranking for e-government development index has improved from the ranking of 43 (2005) to ranking of 34 (2008) to ranking of 32 (2010) (UNPAN, 2010). However in 2012, its ranking dropped to 40 but with an improved index of 0.6703 compared to 2010. In South East Asia Category, Malaysia has maintained its 2nd ranking since 2008, 2010 (UNPAN, 2010) and 2012 but with improved indexes (UNPAN, 2012). In terms of e-Participation Index, there has been a tremendous improvement for Malaysia where its ranking improved from its placing of 41 (2008) to placing of 12 (2010) (UNPAN, 2010) and a slight drop to 14 in 2012 (UNPAN, 2012). In reality, all these rankings actually shows the initiatives and technology developments made by the Malaysian Government to make sure that the e-government services reach the citizens. These initiatives truly resemble the "supply side" of the e-government development delivery (Gauld, Goldfinch & Horsburgh, 2010). What about the "demand side"? To what extend the citizens are going to use or continually use these particular services? remains as an important question to be answered because countries can be high in e-government rankings which focus more on technology developments but a system is still considered a failed system if the intended recipients do not use or continually use them (Gauld et al., 2010). In fact, any innovations whether in a form of equipment, idea or system, must fit the need and the ability of human beings to use and adopt it (Abdullah, Salman, Razak, Noor & Malek, 2011). Governments cannot justify large investments in e-government and will not get any benefit from this investments unless the gap between what is supplied and what is utilized is bridged (Al-adawi, Yousafzai, Pallister, 2005). In fact, World Bank (2008) has indicated that a high percentage of e-government portal

efforts in developing countries are failing at an alarming rate (Venkatesh, Skyes & Venkatraman, 2013). Thus the underlying problem now is not the problem of design but utilization. The key to successful e-government is the implementation of systems that are utilized and meet users' needs (Carter, Shaupp, Hobbs & Campbell, 2011a). Therefore, it is important to understand the continuance usage intention from a citizen's perspective.

The e-Filing system in Malaysia which was introduced in 2006 by IRBM is receiving much attention and there has been an upward trend in the adoption of the system among taxpayers in the first five years (Annual Report, 2010). The income tax submission in 2011 and 2012 also shows a further increase in e-Filing submission to 1, 914,110 (2011) and 2,268,258 (2012) (Jali, M. A. (IRBM), email communication, May 3, 2013). Among the factors that could have contributed to this initial acceptance are convenience, faster refund and cheaper cost. However, according to Bhattacherjee (2001a), while initial acceptance of information system (IS) is very important toward realizing IS success but its eventual success depend on its continued use rather than first-time use. Prior studies have verified that continuance usage intention is vital in today's environment because the longer a business firm can keep a customer; the greater the life-time revenue from that customer and at the same time the cost of serving the customer declines (Mittal & Lassar, 1998). Besides that the high level of user continuance usage intention is also a reflection that the program or the product is well designed and implemented (Lin, Chen & Fang, 2011) and it ensures the continued existence of many customer based electronic commerce firms (Bhattacherjee, 2001a). Mittal and Lassar (1998) also stressed that the cost of recruiting a new customer is five times more than the cost of retaining an existing customer given the cost involved to entice new customers,

setting up new accounts, planning business procedures to new clients and inefficient dealing during the customers learning progress. Moreover, although initial acceptance is important in recognizing the success of an information system (Bhattacherjee, 2001a) but continued usage is even more significant in ensuring the long-term viability of technology innovations (Premkumar & Bhattacherjee, 2008). Furthermore, Devaraj and Kohli (2003) argued that the long term usage of a technology will enhance the financial and quality performance of an organization. Similarly, Zmud (1982) verified that for an innovation to be successful, the organizational members must accept and utilize the technology. Thus, it is important for businesses to accentuate on continuance usage intention as the key for long term growth.

### 1.3.2 Problem Statement

In this vein, investigating the continuance usage intention of e-government particularly in e-Filing system is deemed to be important because as more citizens use e-Filing services, the more operation and management costs are reduced (Wangpipatwong, Chutimaskul & Papasratorn, 2008). In Malaysia, IRBM has saved millions of ringgit annually by reducing cost of printing, imaging, postal and storage through their e-Filing system. In 2009, a total cost of RM9, 162,845.92 has been saved via the e-Filing submission of tax (Hasmah, 2009). The number has gradually increased since its introduction in 2006 (RM1, 302,590.40), 2007 (RM4, 876,564.64) and 2008 (RM8, 187,144.96) (Hasmah, 2009). Apart from that, Bhatnagar (2009) reveals that governments are spending millions of dollars to build online service delivery portals in terms of hardware, software, training and maintenance and communication infrastructure. For example, in building the online tax system in

Thailand, the government invested 55.8 million dollars, whereas in building the e-Lanka in Sri Lanka, the project cost 53 million dollars. In Malaysia, millions of ringgit has been invested in developing the e-Filing system (Aziz & Idris, 2012; Azmi & Kamarulzaman, 2010) especially to upgrade the agency's computer hardware and software (Bernama, 2005).

Moreover, the possibility of discontinuance may occur if the system does not meet the users need even after its successful prior adoption (Limayem, Hirt & Cheung, 2003), which may incur undesirable cost or a waste of effort in developing the technology (Hong, Thong & Tam, 2006). Thus it is confidently believed that the heavy investments invested in the development of e-government online services will be a waste of effort if people do not use the services continuously for long term. This is essential in the case of e-Filing system in Malaysia because filing of income tax online is a voluntary usage, means that the taxpayers still have an option to submit their tax manually. According to IRBM, as at April 30, 2010, it has received 677,885 income tax return forms manually from individual tax payers (Shari, 2010). In fact recent reports confirmed that the number of forms submitted manually have increased by 11.92% (Rahim, 2011). Indeed, mandating e-Filing system will not be a possible option due to the inequality of Malaysian citizens in terms of digital divide, income level and age factor. The traditional e-Filing method will be still needed to maintain social ties, human contact and for personalization (Ling, Obid & Meera, 2005).

Therefore, in ensuring that the heavy investments invested in developing the e-Filing online portals will not be wasteful, identifying the factors that will motivate the continuance usage intention is crucial. Accordingly, based on the official IRBM Annual Report (2010), 33% from the total registered individual taxpayers have filed

their income tax using e-Filing, whereas 67% of the taxpayers are still submitting manually. As such, it is highly fundamental to determine the factors that could influence these 33% taxpayers to continually use the e-Filing system.

In encouraging continuance usage intention of the e-Filing system the main important factor to be focused is the individuals' belief and evaluation as proposed by Theory of Reason Action (TRA). Individuals' belief has been identified as an important determinant of a persons' attitude towards a behavior (Davis, Bagoozi & Warshaw, 1989). Even, Theory of Planned Behavior (Ajzen, 1991) also proposed that behavior is a function of belief relevant to that particular behavior. Belief is defined as the subjective probability that performing the particular behavior will result in a particular consequence (Davis et al., 1989). Previous researchers have identified various kinds of belief affecting the individuals behavior including trust (Gefen, 2000; Pavlou, 2003), personality (Devaraj, Easley & Crant, 2008; Lin & Ong, 2010) and optimism bias (Morrongiello & Rennie, 1998; Lapsley & Hill, 2010).

Trust has been identified as a crucial enabling factor in almost all types of social interactions (He, Fang & Wei, 2009). In fact, trust becomes increasingly important in web based environments where the trustee and the trustor are not physically present (Chan, Thong, Venkatesh, Brown, Hu & Tam, 2010). The role of trust in e-government services is even more important and crucial because citizens using e-government websites are unable to find alternative websites serving the same purpose. In the absence of sufficient trust in the e-government websites, users may be motivated to revert to the traditional way of interacting with the government (Teo, Srivastava & Jiang, 2008). Considerable evidence has also shown that lack of trust is the main reason that obstructs citizens in adopting and using e-government services

especially those that involve sharing of personal information on the internet (Alhussain & Drew, 2010; Hussein et al., 2010; Germanakos, Christodoulou & Samaras, 2007; Weerakkody & Choudrie, 2005; Navarra & Cornford, 2003). Chidambaram (2008) had pointed out that one of the loop holes of e-Filing system in Malaysia which leads to user dissatisfaction is the trust and system functionality issues where someone's private and confidential information can be accessed by others in the system accidentally. Correspondingly, an empirical research conducted at the local government in UK finds that in order to increase the local e-government adoption rate, there is a strong need to build trust in the public. Nevertheless, the study reveals although the local authorities have taken initiative in encouraging public trust but a negative experience encountered by a citizen online has actually influenced the public not to use the government's website for fears of the same identity fraud. This has actually led to distrust in the local e-government services and therefore a low adoption rate (Brooks & Ofosu, 2010). In the case of e-Filing system in Malaysia, approximately 1,666,134 million taxpayers have chosen to file their tax online (Annual Report IRBM, 2010), as such a systematic and vigilant management of the trust factor is very critical in order to avoid the same experience encountered by the UK local government.

Alternatively, Srivastava and Teo (2009) in understanding the success of e-government in Singapore have used the theoretical lens of "citizen trust". Their findings reveal that the success of e-government in Singapore, which was ranked first in the world for its e-government by Waseda University (2009), are mainly due to its systematic and efficient attention in addressing the dimensions of "citizen trust"; citizen trust of the government and citizen trust in the technology. Similarly, Reffat (2003) in highlighting the success of integrated e-government services in Australia

disclosed that among the most pertinent challenges for developing successful e-government services is trust. Trust is viewed as an important component of e-government projects, whereby without trust, citizens may avoid or shun the use of online services (Reffat, 2003) and without citizen trust also the ambitious objective of governments around the world of being developed and deliver high quality and integrated e-government services will not be achieved (Colesca, 2009). However, espite its crucial role, trust is surprisingly not has been widely studied in the literature on continuance usage intention towards the e-government services especially in the context of e-Filing system in Malaysia.

Past researches in examining the continuance usage intention have acknowledged various factors that affect technology adoption and its continuance usage such as usefulness, ease of use, self efficacy, quality, loyalty, voluntariness and subjective norm in either e-commerce or e-government environment. However, studies still find that although respondents were generally supportive of e-government but the majorities were reluctant to use some of the e-government services online (Gauld et al., 2010) which causes a major setback in the service provided. For example in Malaysia, the acceptance rate of e-Bayaran system which provides alternative payment channel for tax payers to pay their income tax online is only 9.08% in 2007 which is much lower compared to payment through Public Bank (70.97%) and CIMB (19.95%). This indicates that the e-Bayaran system is not accepted by the tax payers (Annuar & Othman, 2010). In truth researchers found that although Malaysians trust e-government but they are not using much of e-government services (Farouk & Khalid, 2005).

On the other hand, according to Internet World Statistics (2011), there has been tremendous growth of internet users worldwide. In the context of Malaysia, in

2011 internet users are expected to increase to 61.7% of the total population of 28.7 million and it is expected to increase further to 65.7% in 2012 (The Economist, 2010). Indeed, Malaysia is ranked as one of the top ten countries in the Asian region with the highest number of internet users (Internet World Statistics, 2011). According to a survey done by Malaysian Communication and Multimedia Commission (MCMC) in 2010 reveals that the main purpose of internet usage in Malaysia is for getting information (91.9%) followed by communication by text (88.7%), social networking (81.5%), education (68.1%), downloading (67.5%), leisure (60.2%), government services (52.9%), financial activities (47.0%), internet telephony (23.8%), maintain homepage (19%), selling goods (13%) and others (2.4%). This shows that users have actually become more like consumers in making decisions on their preferences to use, not to use or continually use a particular system (Lin & Ong, 2010).

Thus, this highlights the need to pay attention on the personality traits of each user's in examining their usage and continuance usage of a particular system or technology (Lin & Ong, 2010). Personality reflects the exceptional features of human beings, the characteristics that defined our essence and reflected in all our thoughts and actions (Devaraj et al., 2008). Personality has been found to be related to a broad spectrum of human activities and behavior including romantic relationship (Shaver & Brennan, 1992), psychopathic (Lilienfeld & Andrews, 1996), job performance (Salgado, 1997), career success (Seibert, Kraimer & Crant, 2001), job satisfaction (Judge, Heller & Mount, 2002), sex differences (Schmitt, Realo, Voracek & Allik, 2008), knowledge sharing (Matzler, Renzl, Muller, Herting & Mooradian, 2008), game addiction (Kim, Namkoong, Ku & Kim, 2008b), leisure satisfaction (Lu & Kao, 2009), academic motivation and achievement (Komarraju, Karau & Schmeck,

2009) and drug addiction (Ersche, Turton, Pradhan, Bullmore & Robbins, 2010), substance use (smoking, drinking, and drug) (Turiano, Whiteman, Hampson, Roberts & Mroczek, 2012), ostracism (McDonald & Donnellan, 2012). Eventually, as the usage of internet has shown a tremendous increase world-wide and particularly in Malaysia, it is reasonable to investigate its usage in terms of personality perspectives. Since the level of internet usage is voluntary rather than mandated, so it is more likely to reflect personal motives, needs, values, preferences and other personality attributes (Landers & Lounsbury, 2006). Moreover, Myers and Miller (1996) had predicted that there is a possibility that future technology adoption decision will be more concerned on human nature compared to usefulness factors.

Thus it is more meaningful and crucial to understand first the effect of personal traits towards the usage or continuance usage intention of e-Filing system compared to any other variables. Research on personality traits are popular in Malaysia currently, however, only fewer studies have been explored so far on the relationship between personality traits and internet usage and none in the context of e-government or e-Filing system.

In addition to trust and personality, optimism bias may also play an important role towards continuance usage intention (Schaupp, Carter & McBride, 2010a). Optimism bias suggests that "although people identify situations as risky; they do not think they are as susceptible to the risks as the average person. Many people believe that their knowledge and abilities minimize their vulnerability to risk (Carter, Schaupp & Evans, 2008). Optimism bias has been explored in various fields earlier such as traffic psychology (Rothengatter, 2002), drink-driving (Fernandes, Job & Hatfield, 2004), skin cancer (Branstrom, Kristjansson & Ullen, 2005), risky behavior (Moen & Rundmo, 2005), road accidents (Dalziel & Job, 1997), insurance market

(Bracha & Brown, 2007), cancer screening (Ackerson & Preston, 2009) and adulthood (Lapsley & Hill, 2010).

In the technology adoption field, several researchers found that despite the existence of perceived risk many people still utilize the e-government services (McLeod, Pipin & Catania, 2009; Belanger & Carter, 2008). In Malaysia, earlier studies (Azmi & Bee, 2010; Ambali, 2009; Zakaria et al., 2009; Ramayah et al., 2008b; Ling et al., 2005; Lai, Obid & Meera, 2004) on e-Filing system found a significant relationship between perceived risk and intention to use e-Filing system which means that the higher the perceived risk, the lower the intention to adopt the e-Filing system. However, the current situation shows that the number of tax payers adopting e-Filing system is gradually increasing year by year regardless of the existence of perceived risk. Thus optimism bias may have an effect on this phenomena, as regarded by Ambali (2009) based on his study that although electronic tax filing is gaining popularity among tax payers but most people use the system to try to get the "feel" of submitting tax electronically with poor navigability and sense of uncertainty about the functionality, security and concern for their sensitive information, which may lead the users to "give up" the idea in despair.

Further, survey by Nielson company found that although online security is top concern among the online shoppers in Malaysia but Malaysians spent RM1.8 billion shopping via the Internet in 2010 (Ho, 2011) and it has grown by another 12% in 2011 (Worldwide Online Shopping Survey, 2012). So, the question that needs to be raised "are Malaysians optimistically bias on the risk of online transactions"? This is something that should be tackled carefully in order to avoid any vulnerability of taxpayers' information online and to avoid tax payers from "giving up" in submitting their online tax filing in the case of any security breach (Ambali, 2009).

The role of optimism bias has been explored in the pre adoption environment of e-Filing research previously but a mixed result was found. Carter et al. (2008), Schaupp, Carter and Hobbs (2009), Schaupp et al. (2010a) and Schaupp and Carter (2010) found that optimism bias has a positive impact on e-Filing usage intention however a study by Schaupp, Carter and Hobbs (2010b) disagrees with previous findings and found that optimism bias has no significant relationship towards electronic tax filing adoption. Therefore, in addressing the fundamental role of optimism bias in e-services adoption there is a strong need to study the effect of this variable on long term usage of e-Filing system in Malaysia.

In addition, a thorough review of the relevant literature on technology adoption shows that the majority of the research conducted in Malaysia has focused on the pre-adoption environment (intention to adopt a technology) (Aziz & Idris, 2012; Lim, Yap & Lee, 2011; Azmi & Bee, 2010; Azmi & Kamarulzaman, 2010; Hussein et al., 2010; Anuar & Othman, 2010; Ramayah, Roiubah, Gopi & Rangel, 2009; Illias Razak, Yasao, 2009; Zakaria et al., 2009; Illias et al., 2008; Loo, Yeow & Chong., 2009; Lean et al., 2009; Poon, 2008; Gopi & Ramayah, 2007; Md Nor & Pearson, 2007; Amin, 2007; Lallmahamood, 2007; Ramayah, 2006; Ramayah, Jantan, Noor, Ling & Razak, 2003) while lacking in research on post adoption environment (continuance usage intention after initial adoption).

Thus, there is an important need to study the individual's belief and evaluation in terms of trust, personality and optimism bias in predicting citizen's continuance usage intention in engendering the success of e-Filing system in Malaysia.

## 1.4 Research Objectives

Given the substantial amount of cost savings achieved and the rapid increase in the usage of e-Filing system, the Malaysian government needs to focus on the ways to enhance the continuous usage of this system. The prime objective of the study is to examine the role of trust in the system, personality and optimism bias on the continuance usage intention of the e-Filing system. Thus, the objectives of this study are:

1) Examine the effect of confirmation and perceived usefulness on satisfaction towards e-Filing continuance usage intention
2) Examine the effect of confirmation and perceived ease of use towards perceived usefulness
3) Examine the effect of perceived usefulness, perceived ease of use and satisfaction on attitude towards e-Filing continuance usage intention
4) Examine the effect of perceived usefulness, satisfaction, attitude, perceived risk and optimism bias on the e-Filing continuance usage intention
5) Examine the effect of trust dimensions (correctness, availability, security, failure, accountability, response time and system support) on attitude towards e-Filing continuance usage intention.
6) Examine the mediation effect of attitude between the trust in the system and e-Filing continuance usage intention
7) Examine the effect of trust dimensions (correctness, availability, security, failure, accountability, response time and system support) on perceived risk towards e-Filing continuance usage intention

8) Examine the moderating effect of conscientiousness and extraversion towards the relationship between perceived usefulness and e-Filing continuance usage intention
9) Examine the effect of openness, neuroticism and agreeableness on perceived usefulness towards e-Filing continuance usage intention
10) Examine the effect of neuroticism and agreeableness on confirmation towards e-Filing continuance usage intention

## 1.5 Research Questions

In order to achieve the above objectives, the following research questions were posed for this study:

1) What is the relationship between confirmation and perceived usefulness on satisfaction?
2) What is the relationship between confirmation and perceived ease of use on perceived usefulness?
3) What is the relationship between perceived usefulness, perceived ease of use and satisfaction on attitude?
4) What is the relationship between perceived usefulness, satisfaction, attitude, perceived risk and optimism bias on e-Filing continuance usage intention?
5) What are the significant dimensions of trust in the system towards attitude? Do correctness, availability, security, failure, accountability, response time and system support influences attitude towards e-Filing continuance usage intention?
6) Does attitude mediate the relationship between trust in the system and e-Filing continuance usage intention?

7) What are the significant dimensions of trust in the system towards perceived risk? Do correctness, availability, security, failure, accountability, response time and system support influences perceived risk towards e-Filing continuance usage intention?
8) Do personality traits of conscientiousness and extraversion moderate the relationship between perceived usefulness and e-Filing continuance usage intention?
9) What is the relationship between personality traits of openness, neuroticism and agreeableness on perceived usefulness?
10) What is the relationship between personality traits of neuroticism and agreeableness on confirmation?

## 1.6 Definition of Key Term

### a. Information Communication Technologies (ICT)

ICT are a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information (Blurton, 1999)

### b. Continuance Usage Intention

Continuance usage intention is defined as one's intention to continue using or long term usage intention of a technology (Bhattacherjee, 2001a). In the case of e-Filing system, it is defined as the taxpayers' intention to continue using the e-Filing system to file their tax online.

**c. User Satisfaction**

User satisfaction is defined as the degree to which users have a good feeling toward an information system (Kappelman & McLean, 1991). Therefore, in the case of e-Filing system, user satisfaction is defined as the users' overall feeling towards the e-Filing system.

**d. e-Government**

E-government or electronic government refers to the "process of connecting citizens digitally to their government in order that they might access information and services offered by government agencies" (Lau, Aboulhoson, Lin & Atkin, 2008)

**e. e-Filing System**

e-Filing system which is launched in 2006 in Malaysia "allows taxpayers to submit their income tax details online and is considered as an alternative to the usual manual paper submission" (Ambali, 2009). "With the e-Filing system, taxpayers and tax practitioners can file income tax returns electronically via the enabling technologies, rather than through mail or physically visiting the tax office" (Ling et al., 2005)

**f. Manual filing of income tax**

Manual Tax Filing is the traditional submission method "either by hand or typewriter. Taxpayers usually perform complex calculations using mental arithmetic or calculator, and then the return is delivered to the tax agency through the postal service or in person. After receiving a return, the