DETERMINANTS OF PERCEIVED EASE OF USE OF e-FILING

By

VIVEKA RAMOO

Research report submitted in partial fulfillment of the requirements for the degree of Master of Business Administration

JUNE 2006

ACKNOWLEDGEMENT

Lord, I thank you for blessing me with the best supportive parents, husband and children anyone could ask for. I thank each and every one of you. My heartfelt gratitude and appreciation to my supervisor Associate Professor T.Ramayah for his kind support and advice thru the completion of this theses.

TABLE OF CONTENTS

			Page
ACKNOWLEDGEMENT			ii
TABLE OF CONTENTS			iii
LIST OF TABLES			vi
LIST OF FIGURES			vii
ABSTRAK			viii
ABSTARACT			ix
Chapter1:	INTRODUCTION		1
	1.1	Introduction: Overview of Internet tax-filling	1
	1.2	e-filing in Malaysia	3
	1.3	Research Problem	5
	1.4	Research Objectives	7
	1.5	Research Questions	7
	1.6	Significance of Study	8
	1.7	Definition of key terms	9
	1.8	Organization of the Report	10
Chapter 2:	LITERATURE REVIEW		11
	2.1	Introduction	
	2.2	Overview of the literature	11
	2.3	Technology Acceptance Model	12
	2.4	Theoretical Framework and Model Development	19
		2.4.1 Compute Self-Efficacy (CEFF)	21
		2.4.2 Facilitating conditions (FCON)	22
		2.4.3 Computer Anxiety (CANX)	23
		2.4.4 Perceived Risk (PRSK)	24
		2.4.5 Subjective Norm (SNOM)	25
		2.4.6 Personal Innovativeness (P1NN)	27
		2.4.7 Voluntariness (VOL)	27
		2.4.8 Perceived Ease of Use (PEU)	28

Chapter 3*:* **RESEARCH METHODOLOGY** 30
3.1 Introduction 30
3.2 Research Design and Procedure 30
3.2.1 Type of Study 30
3.2.2 Nature of Study 30
3.2.3 Unit of Analysis 30
3.2.4 Research Site 31
3.3 Population, Sample size and Sampling Technique 31
3.4 Scales and Measurement 31
3.4.1 Independent variable 32
3.4.1.1 Computer Self-Efficacy 32
3.4.1.2 Facilitating conditions 32
3.4.1.3 Computer Anxiety 33
3.4.1.4 Subjective Norm 33
3.4.1.5 Perceived Risk 33
3.4.1.6 Personal Innovativeness 33
3.4.2 Dependent Variable 34
3.4.2.1 Perceived Ease of Use 34
3.4.3 Moderating Variable 34
3.4.3.1 Voluntariness 34
3.5 Questionnaire Design 34
3.6 Data Collection Method 35
3.7 Statistical Data Analyses 35
3.7.1 Goodness and Correctness of Data Entry 35
3.7.2 Factor Analysis 36
3.7.3 Validity and Reliability 37
3.7.4 Descriptive Analysis 38
3.7.5 Regression Analysis 38
3.7.6 Hierarchical Regression 39

Chapter 4: **ANALYSIS AND RESULT** 40
4.1 Introduction
4.2 Samples and Profiles 40
4.3 Goodness of Measure 43
4.3.1 Factor Analysis 44
4.3.2 Reliability of Measurement 45
4.3.3 Descriptive Analysis 46
4.4 Hypotheses Testing 47
4.4.1 Correlation Analysis 47
4.4.2 Multiple Regression 1 47
4.4.3 Multiple Regression 2 51
4.4.4 Hierarchical Regression 52
4.5 Summary of Results 55

Chapter 5: DISCUSSION AND CONCLUSION

5.1	Introduction	57
5.2	Recapitulation of the Study	57
5.3	Discussions and Major Findings	60
5.4	Implications	60
	5.4.1 Managerial Implications	61
5.5	Limitations	62
5.6	Future Research	63
5.7	Conclusion	63

REFERENCES 65

APPENDIX A: QUESTIONNAIRE 71

APPENDIX B: FREQUENCY TABLES 78

APPENDIX C: INTERNET USAGE & TAX PAYING PROFILE 79

APPENDIX D: FACTOR ANALYSIS 81

APPENDIX E: RELIABILITY ANALYSIS 84

APPENDIX F: CORRELATIONAL ANALYSIS 92

APPENDIX G: MULTIPLE REGRESSION 1 93

APPENDIX H: MULTIPLE REGRESSION 2 96

APPENDIX I : HIERARCHIAL REGRESSION 99

LIST OF TABLES

Table	Description	
Table 1.1	ICT situations in six developing countries	4
Table 1.2	Malaysia Employment Statistics	5
Table 1.3	Predicted Population in Malaysia 2010	5
Table 2.1	Summary of literatures on PEU	15
Table 3.1	Questionnaire source and validity	35
Table 4.1	Profile of the Respondents	41
Table 4.2	Internet usage, internet facilities and tax paying method	42
Table 4.3	Result of factor analysis	44
Table 4.4	Summary of Reliability Analysis	46
Table 4.5	Overall Descriptive Statistics of the Study variables	47
Table 4.6	Pearson's Correlation Coefficients of the Study Variables	48
Table 4.7	Result of multiple regression 1	50
Table 4.8	Result of multiple regression 2	51
Table 49	Hierarchical Regression	54
Table 4.10	Summary of Hypotheses testing	55

LIST OF FIGURES

Figure	Description	
Figure 2.1	Technology Acceptance Model	13
Figure 2.2	Theoretical framework	20
Figure 4.1	Result of multiple regression 1	50
Figure 4.2	Result of multiple regression 2	52
Figure 4.3	Hierarchical Regression	53
Figure 4.4	Moderating effect of voluntariness on PINN	55

ABSTRAK

Kerajaan sedang mencari faedah daripada teknologi maklumat dengan memperkenalkan e-kerajaan di mana melibatkan pelbagai perkhidmatan kerajaan untuk memberi faedah kepada rakyat. E-Filing diperkenalkan di Malaysia pada tahun 2006. Ia merupakan satu contoh perkhidmatan e-kerajaan. Faktor pengunaan dan sikap dibuang dari model TAM. Ramai penyelidik telah menunjukkan faktor "senang diguna" adalah penting dalam penggunaan sesebuah system teknologi maklumat baru. Teori yang digunakan dalam penyelidikan ini adalah teori TAM. Data dikumpulkan daripada 100 orang berdasarkan soal jawab struktur.Pemboleh ubah keupayaan kegunaan komputer mempunyai pengaruh yang kuat dalam faktor tangapan senang diguna.(Beta = 0.500). Pembolehubah lain yang mempengaruhi faktor tangapan senang diguna adalah ketakutan menguna komputer, kondisi kemudahan, norma subkektif and individu inovatif. Kerelaan mengguna sesuatu teknologi di dapati moderat teori TAM dalam sesetengah penyelidikan. Keputusan hirarki regresi menunjukkan kuasa penterjemahan model ini bertambah dari 45.8% kepada 50.9% apabila faktor kerelaan menguna dimasukan sebagai pemoderat dalam analisis statistik. Faktor individu inovatif terutamanya di dapati mempengaruhi tangapan senang diguna .Memahami faktor-faktor ini boleh meluaskan pengetahuan untuk perancangan dan penguatkuasaan e-filing di Malaysia.

ABSTRACT

Governments are seeking to benefit from information technology by introducing e-Gov, whereby incorporating various government services online for the benefits of the citizen. e-Filing introduced in Malaysia in 2006, is one of the example of e-government services. This is an exploratory study to model the determinants of ease of use of e-Filing. Many researchers have shown that ease of use is an important driver to intention to use and actual usage of a particular technology. Usage and attitude was omitted as many researchers have already shown the direct effect of ease of use and perceived usefulness on actual usage. Data was collected from 100 respondents using a structured questionnaire. The findings show that computer self-efficacy has the strongest influence on perceived ease of use (Beta=0.500). Other variables found to influence ease of use includes computer anxiety, facilitating conditions, subjective norm, and personal innovativeness. Voluntariness to use a system has been found to moderate TAM relationships in past research. The hierarchical regression results show that explanatory power of the model increases from 45.8% to 50.9% when voluntariness moderates the relationship. Personal innovativeness influence on ease of use will be stronger when voluntariness is high. Understanding these factors can extend the knowledge which can lead to better planning and implementation of e-Filing in Malaysia.

Chapter 1

INTRODUCTION

1.1 Introduction: Internet tax-filing

Over recent years, government use of the internet as a platform to provide services to citizens has grown significantly. One of the major priorities already identified by many officials in charge of introducing electronic government is tax. Governments around the world have quickly realized that electronic filing of tax, if properly used, provide a way to greatly simplify the revenue collection process.

Considerable savings can be derived from propagating internet tax filing system or e-filing as it is known in Malaysia. Forrester Research (2001),has identified that savings fall in the following three categories.

(a). Automated data entry yields great savings. Government clerks need not reenter tax information once entered by taxpayer and sent electronically to the relevant government database. As a result, the productivity of data entry and checking doubles to 10 tax files a day-reducing labor expenses for data handling personnel by 80 percent.

(b). Fewer errors lighten verification and correction burden. Intelligent data entry and the elimination of data re-entry, combine to bring the error rate to 5 percent in countries like Ireland.

(c). Electronic data exchange reduces printing and mailing costs. Tax departments may spend considerable amount of money to subcontract printing and mailing of tax forms.

Based on Forrester (2001) research, proper use of electronic tax systems could lead revenue authorities saving up to 70 percent of current cost in collecting taxes. Internet tax-filing software development; has been adopted by many EU countries in the last 5 years.

(a) Belgium: In February 2002 Inter VAT service was introduced to allow companies to declare VAT online.

(b) France : Since July 15, 2001, business in France with annual turnover of Euros 15 million have been mandated by law to file their corporate tax electronically

(c) Ireland: Ireland mandated the e-filing of VAT and contributions since second quarter 2001.

(d) Spain : Over 420,000 individuals now file online in the country and the process is mandatory for all companies with an annual turnover of more than Euro 6 million.

The annual (Global e-Government Study, 2005) of Brown University in the United States, ranked the following countries- Taiwan, Singapore, United States, Hong Kong and China as the top 5 countries in the world with most sophisticated e-Government websites. Governments have utilized and benefited from information technology in many ways. Core research to understand and influence citizen's acceptance of e-government services such as internet tax-filing or e-filing as it is known in Malaysia is critical given the investment in such technology and the potential of cost saving for the government.

1.2 e-Filing in Malaysia

In the Asia-Pacific region, Malaysia and Japan were the 2 countries with lowest number of users making transactions using government online with just 12% and 13% respectively. Singapore leads the region with 53% although Australia has seen the most significant increase in online government service usage from 31% to 46%. (The Star, Nov 12, 2002)

Starting in 2006, Malaysian citizens are able to choose from two methods tax-filing : manual and internet based or e-filing. This is the first year the Inland Revenue Board (IRB) Malaysia introduced the use of online tax return filing. The sun newspaper, 19 April 2006 explained the steps to file tax return online

Getting a digital certificate

Go to the nearest branch to obtain a PIN number. The PIN number is a 16 digit number sealed like a usual bank's credit card PIN number.

(1) Log on to https://e.hasil.org.my/
(2) Back up your digital certificate and password online by clicking the link "penyelengaraan sijil digital"(digital certificate maintenance)
(3) View or remove the certificate from the computer, open an Internet Explorer windows and go to "Tools>Internet Options>Content>Certificates.

According to The Star May 1 2006, 120,000 taxpayers have filed their returns electronically. IRB chief executive officer Tan Sri Zainal Abidin Abdul Rashid said the IRB wants to play a proactive role by encouraging taxpayers to adopt e-Filing, which is

easier and faster. This is inline with the Government's Information Technology policy. He added that the IRB would begin a nationwide campaign at the end of this year to encourage people to file their tax return electronically.

In terms of ICT infrastructure to support e-government propagation or specifically e-filing implementation, Malaysia has one of the best ICT infrastructures among developing countries in the region. In a recent study by (Haris, 2003) as cited by (Christian, Karen, Fian & Rachael, 2003) compared the ICT situation in six developing countries, based on World Bank data for 2000. Table 1.1 illustrates the availability of two important technologies, telephone lines and personal computer penetration, for several developing countries, as well as the number of Internet users. The data from this study shows that countries in the lower end of the spectrum, such as Bangladesh will have immense difficulty with e-government penetration; countries such as China, Thailand or Malaysia will be in a much better position.

Table 1.1

ICT situations in six developing countries (Source World bank 2000)

	India	Bangladesh	Thailand	Malaysia	China	Philippines
Fixed lines and mobile phones (per 1,000 people)	**35.5**		**142.6**	**412.3**	**177.6**	**124.4**
Personal computers (per 1,000 people)	**4.5**	**1.5**	**24.3**	**103.1**	**15.9**	**19.3**
Internet Users	**5 million**	**100,000**	**2.3million**	**3.7million**	**22.5million**	**2.0million**

1.3 Research Problem

The data from table 1.2 indicates that the IRB department has to handle approximately 10 million employed citizens' tax returns yearly. The Star May 1, 2006 states that 120,000 tax returns done thru e-Filing in 2006, represents about 1.2% of the population of the tax payers. The number of tax- payers is expected to steadily rise. The predicted number of the population that is expected to be within the age group of 25-55 year of age in 2010 is expected to rise to 12 million based on the data from Table 1.3. Unofficial sources have put the cost saving of processing each tax return form at RM10.00. This leads to a potential cost saving of close to RM100 million in 2010.

Table 1.2

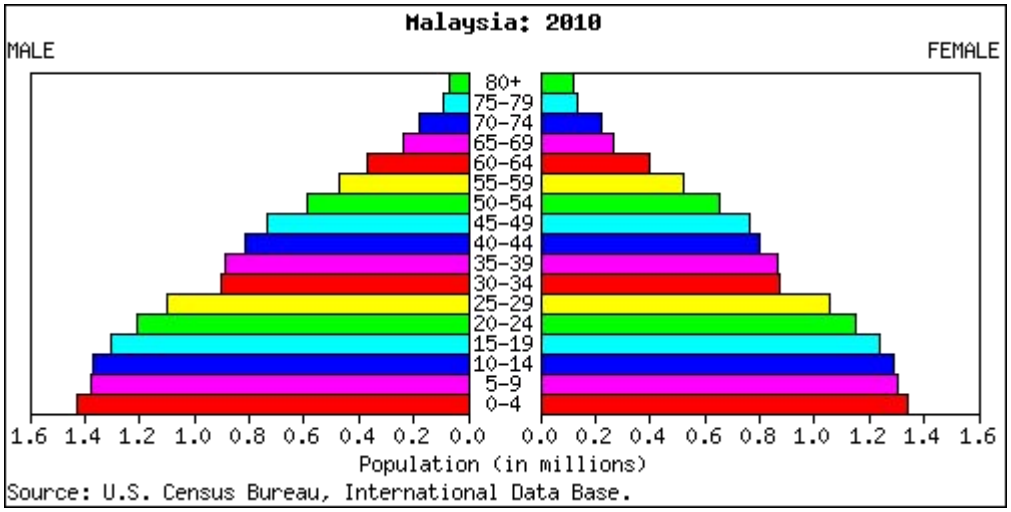
Malaysia Employment Statistics

Employment	*2005 1st quarter*	*2005 2nd quarter*	*2005 3rd quarter*	*2005 4th quarter*
Total Labour Force ('000)	10,307.3	10,541.7	10,498.6	10,398.3
Employed ('000)	9,943.8	10,215.6	10,101.0	9,998.1

Source : www.dosm.gov.my

Table 1.3

Predicted Population in Malaysia 2010



The benefits of cost savings that can be realized from e-Filing in the long run would be beneficial to government in view of the increase number of youths that will join Malaysian workforce in the next 5 years. This information can be clearly seen from the projected population in 2010 in Table 1.3.

The problem therefore is to understand why **intention to use** e-filing is still low in Malaysia. There is dire need to understand how to **increase usage** of e-filing among tax-payers in Malaysia.

The following feedbacks on Malaysia e-Filing system were captured by Star, May 1 2006. Many said they were uncomfortable with e-Filing as they were unfamiliar with electronic transactions and some said they were not computer savvy. Even those who favored the convenience and ease of e-Filing were concerned about the security and privacy of filing their tax returns. Predicting how users will respond to e-Filing and why

people resist using computers will help improve the nature of the e-filing system in Malaysia.

Governments cannot realize any return on their investments in information systems (IS) like e- Filing, unless the systems are actually used by their intended users. Despite their sizable cost, IS have been found underutilized or sometimes abandoned because of the lack of user acceptance (Gillooly, 1998; King, 1994; McCarroll, 1998). Understanding why individuals accept or reject an IS has proven to be a challenging issue. The proliferation of e-government worldwide raises the problem of how governments can increase their citizen's adoption of e-tax or e-Filing.

e-Filing may be useful but many people may not want to use it because they perceive it to be complex or not easy to use in the initial stage of introduction. This is the reason why the present study delves into understanding the determinants of perceived ease of use. In addition information systems that users perceive easier to use and less complex will increase the likelihood of its adoption and usage (Teo et al.,1999).

Perceived ease of use is defined as the degree to which a person believes that using a particular system would be free of effort (Davis, 1989). Incorporating social, cognitive and psychological constructs into user acceptance and TAM research will help explain the mechanisms in play in predicting intention to use behavior when using e-Filing.

The motivating factor that makes the subject of e-filing interesting is the potential benefit that can be reaped if e-filing is successfully propagated. The government would have an opportunity to save up to RM100million in cost related processing of tax forms.

1.4 Research Objectives

(1) The primary purpose of this research is to understand the determinants of perceived ease of use among tax payers using e-Filing in Malaysia.

(2) The other research objective is to understand the role of voluntariness as a moderator of this new method of tax filing.

(3) This study will also seek to understand the role of ease of use on intention.

1.5 Research Questions

In seeking to achieve the above objectives, this study attempts to answer the following research questions:

(1) What are the key determinants of perceived ease of use?

(2) Does voluntariness moderate the relationship between perceived ease of use and behavior intention?

(3) Does ease of use influence intention to use.

1.6 Significance of the study

The present study intends to understand the determinants of user acceptance of e-Filing, using voluntariness as a moderator to the relationship. Understanding the determinants for Perceived Ease of Use will provide added leverage to enhance acceptance of e-Filing in the future.

This study will help to give insight on the social, cognitive and physiological components that will develop an understanding on how to encourage Malaysian tax-payers to adopt e-Filing in the shortest time. The results from this study can be used by officials in charge of e-Filing to either improve the system or utilize the information to find ways to attract new users to utilize e-Filing.

In the medical profession, the correct medicine must be administered to cure the disease. In the same sense, the present study will be significant as it provides a quantitative analysis to justify what needs to be administered to improve the acceptance to use e-Filing. Every effort that the government may embark on to educate tax-payers nationwide will be very costly. There could be various aspects that may be the cause for lack of acceptance; example lack of training, lack of computers etc. Therefore, understanding the key factors that increase usage of e-filing among tax payers' will result in accurate recommendations for campaigns and provisions by the government.

1.7 Definition of key terms

Computer self-efficacy – individual's judgement of their capabilities to use computers in diverse situation (Thatche & Perrewe, 2002)

Computer anxiety – individual's apprehension, or even fear, when he/she is faced with the possibility of using computers (Simonson et al., 1987)

Voluntariness – "the degree to which use of innovations is perceived as being voluntary, or of free will" (Moore & Benbasat, 1991)

Subjective norm – Individual's perception of the likelihood that the potential referent group or individuals approve or disapprove of performing the given behavior (Fishbein & Ajzen, 1975;Ajzen, 1991)

Perceived risk – Perception of an individual of the adverse effect, consequences and the uncertainty that may occur by engaging in the particular behavior or activity (Dowling & Staelin, 1994)

Facilitating conditions – Facilitating conditions (Triandis , 1977) dichotomized as an external component (Kidwell & Jewel, 2003), refers to the objective conditions in the

environment of the individual which makes the behavior easy or difficult to perform (Triandis,1977).

Personal Innovativeness – defined as the willingness of an individual to try out any new information. (Agarwal & Prasad, 1998)

Perceived ease of use – defined as the degree to which a person believes that using a particular system would be free of effort.(Davis, 1989)

Behavioral intention - the extent to which an individual intends to perform a specific behavior. (Davis et al.,1989).

Voluntariness – extent to which adopters perceive the adoption to be non-mandatory (Moore & Benbasat, 1991; Venkatesh & Davis, 2000)

1.8 Organization of the Report

This research proposal is organized into five chapters. Chapter 1 gives the background of the study. The purposes and research objectives have been put forth to guide the direction of the study. Chapter 2 reviews related literatures by previous researchers. Based on these literatures the theoretical framework and hypotheses are developed. Chapter 3 discusses the research methodology used in this research. Chapter 4 presents the result of the statistical analysis. Chapter 5 summarizes research findings, implications of the findings and limitation of the study. The concluding chapter also provides some suggestions for further studies.

Chapter 2

LITERATURE REVIEW

2.1 Introduction

This chapter focuses on discussing the theories, the expansion of the theories to the present theoretical framework used in this research and the justification for the present model.

2.2 Overview of the literature

Various literatures from scholars in Malaysia and abroad were reviewed on the subject of Technology Acceptance among users and PEU in particular. One of the observations in reviewing the literature is that a large number of work studying user acceptance or behavior intention in using IS was based on convenience sampling (students). Samples size of the population was represented by the students of the university. This method of sampling would be convenient; however difference in explanatory power between laboratory experiments and field study would be a potential setback. Sun and Zhang (2004) and Gopi (2006) has reviewed past literature in detail and found that studies using laboratory experiments have relatively higher explanatory power than field studies. One suggested reason is the relatively uncontrolled environment of the field setting (Lucas & Spitler, 1999). Sun and Zhang (2004) made an assumption that employees face more complex and differing factors in real contexts than students do, the difference also calls for additional factors that may explain more variance in user acceptance. The present study is a field study and therefore extra care was taken to review literatures and adopting constructs from past literatures that was also conducted the study in a field setting.

This study serves to understand the determinants of perceived ease of use and eventually to relate this information to suggest better methods to encourage acceptance of e-Filing based on the findings. Older literatures on user acceptance were reviewed to understand the scholarly thinking and models that were developed to study user acceptance. The more recent literatures were reviewed a basis to construct the theoretical model and to understand recent research findings on perceived ease of use.

2.3 Technology Acceptance Model

The basic theory that forms the basis of the research is the Technology acceptance model developed by (Davis,1989). In order to be able to explain user acceptance and use, it is important to understand the antecedents of the key TAM constructs, perceive ease of use and usefulness. Technology Acceptance Model (TAM) is tailored for IS contexts, and was designed to predict information technology acceptance and usage on the job (Venkatesh, Morris, Davis & Davis, 2003). TAM, introduced by (Davis, 1986) specifies two particular beliefs- perceived usefulness and perceived ease of us. **Perceived Usefulness (PU)** is defined by (Davis, 1989) as the degree to which a person believes that using a particular technology will enhance his performance. **Perceived Ease of Use (PEU)** is defined by (Davis, 1989) as the degree to which a person believes that using a particular system would be free of effort. **Behavioral intention (BI)** is defined as the extent to which an individual intends to perform a specific behavior. (Davis et al.,1989). The TAM model developed by (Davis, 1989), is shown in Figure 2.1.

Usage was removed from the TAM model for this study as many past researches has already shown the direct effect of ease of use and perceived usefulness on intention and actual usage.

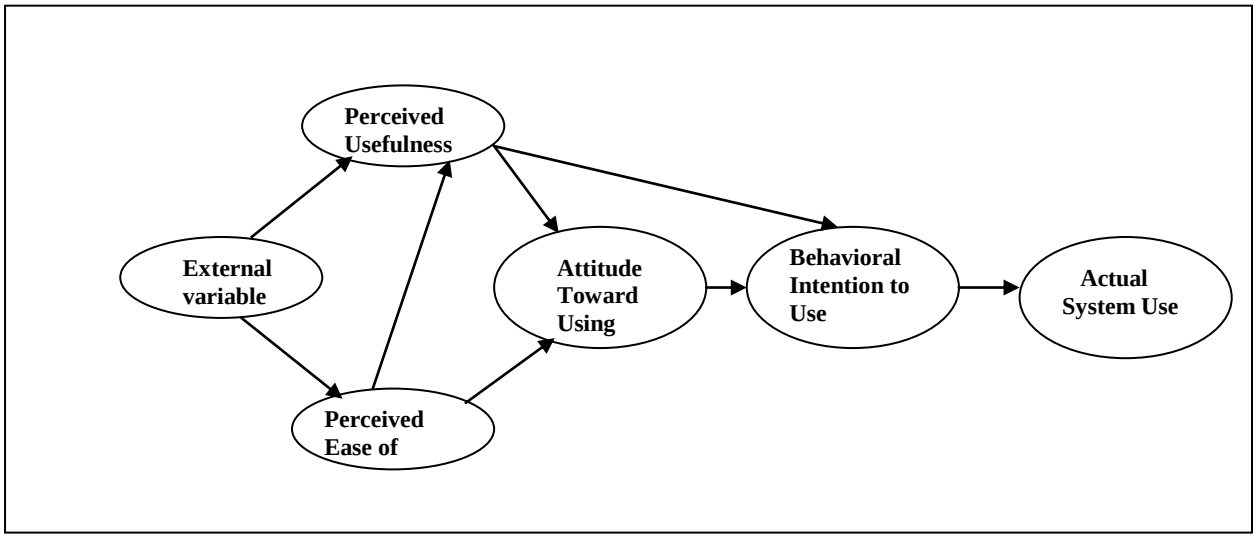


Figure 2.1 Technology Acceptance Model
Source: Davis et al., 1989

Some of the literatures that has already proven direct effect of intention and usage includes (Chau & Hu, 2001; Chen et al., 2002; Moon & Kim, 2001; Mathieson et al. 2001; Venkatesh et al., 2003; Ramayah & Tham, 2005; Gopi, 2006).Their findings showed clear repeated direct relationship between intention and usage. This further justifies why usage can be omitted from the TAM model for this study. Attitude was also removed from the TAM model to understand the influence of PEU on behavior intention. Attitude was removed from the TAM model after Venkatesh (2003) found that attitude did not mediate the relationship between PEU, PU and BI.

The Technology Acceptance Model (TAM), introduced by (Davis, 1989), is an adaptation of Theory of Reasoned Action (TRA) especially for modeling user acceptance of information systems. Fishbein & Ajzen's (1975) Theory of Reasoned Action is an especially widely validated intention model that has been proven successful in predicting and explaining behavior across a wide variety of domains. TAM adapted the TRA

model's belief-attitude-intention-behavior relationship to model user acceptance of IT. (Ramayah, 2006)

The parsimony of TAM combined with its predictive power makes it easy to apply to different situations. However, while parsimony is TAM's strength, it is also the model's key limitation. TAM is predictive but its generality does not provide sufficient understanding from the standpoint of providing system designers with information necessary to create user acceptance for new systems (Mathieson,1991).

Ramayah (2006a) and (Venkatesh, 2000) have added depth to TAM model by understanding the determinants of perceived ease of use in their study. The study by (Venkatesh, 2000) explained up to 60% of the variance in system specific perceived ease of use. The study by (Ramayah, 2006a) on determinants of perceived ease of use of e-Library also explained up 65% of the total variance. These studies have some of the highest explanatory power among TAM research conducted in recent years. Table 2.1 below looks at the past work of researchers in Malaysia and abroad in understanding perceived ease of use in various contexts and scope of research. These literatures also study the relationship between perceived ease of use and behavior intention.

Table 2.1

Summary of literatures on Perceived Ease of Use

Author(s)	Research setting	Study sample(s)	Instruments /model	Key Findings on PEU
Fu, Farn and Chao (2006)	Taiwan	Individuals	TAM	Existing **e-Tax** payer may not consider PEU or SN of particular importance. A manual tax payers' decision to adopt e-tax method is influenced by PEU and social pressures. For manual tax payers, the effect of PEU, SN, SE on BI were significant. PU was the strongest determinant and explained most of the variance in BI.
Ramayah (2006a)	Malaysia	Students	TAM	This study on the subject of ease of use of USMs' digital library showed that interactive characteristic ranked the highest in the order of influence on ease of use, followed by organizational context and individual differences. Total variance explained was 64.8%
Ndubisi, Gupta & Ndubisi (2005)	Malaysia	Malaysian entrepreneur	TAM	Perceived ease of use has no direct relationship with usage .It only has an indirect relationship via perceived usefulness. Innovativeness moderates the relationship between ease of use and usefulness; perseverance and flexibility moderate the impact of perceived usefulness on usage. Perceived usefulness has a strong influence on entrepreneurs' system usage.

Table 2.1 (Continued)

Author(s)	Research setting	Study sample(s)	Instruments /model	Key Findings on PEU
Venkatesh (2000)	USA	Employees of three organization	TAM	Determinants of system-specific perceived ease of use as individuals evolve from early stages of experience to later stages of experience.T1-initial after training T2- one month after training, T3 three month after training. Usage context of system was voluntary. Internal and external control, FCON, CEFF, Motivation, CANX serve as anchors that users employ in forming PEU of new system. With experience general beliefs regarding computer, perceived enjoyment and objective usability were important in perceiving ease of use of a system. Perceived ease of use influence behavior intention.
Ramayah (2006b)	Malaysia	Students	TAM	Interface characteristic were found to be strong predictors of perceived ease of use. Terminology clarity was found to be the most influential factor. Screen design found to be significant predictor to perceived ease of use. Navigational clarity was only weakly correlated to perceived ease of use. PEU was also found to be positively related to intention to use the online.

Table 2.1 (Continued)

Author(s)	Research setting	Study sample(s)	Instruments /model	Key Findings on PEU
Gopi(2006)	Malaysia	Individuals trading in Bursa Saham Malaysia	Compared DTPB, ITPB,TAM and IDTPB	Attitude, SN, perceived behavioral control, descriptive norm and PU has a direct significant positive relationship toward using internet stock trading. PU is the most significant factor in determining the attitude towards using Internet stock trading compared to PEU. Significant positive relationship of PEU towards perceived usefulness. Integrated DTPB model was concluded as the better model as it had an explanatory power of 58.9%.
Lu,Yu,Liu & Yao (2003)	USA	Students	TAM	Study of technology acceptance for wireless internet. Intention to use wireless internet depends on both perceived near term and long term usefulness. Attitude towards using is jointly determined by perceived near term and long tern usefulness and PEU. Perceived near-term usefulness is also influenced by ease of use.
Jantan, Ramayah, Dahlan & Wah (2001)	Malaysia	SMI	TAM	PEU and perceived enjoyment have positive direct influence on system acceptance. PU was also found to have intervening effect on PEU and system acceptance. Management support was found to be a determinant and have positive direct influence on both PEU and PU. External Computing support has positive direct influence on PEU only.

Table 2.1 (Continued)

Author(s)	Research setting	Study sample(s)	Instruments /model	Key Findings on PEU
Vennila (2006)	Malaysia	College students	Social Cognitive theory/TAM	CANX has a negative effect on PEU. Personal Innovativeness is positively correlated to PEU. Computer playfulness has a direct relationship with PEU. Computer self efficacy does not moderate the relationship between CANX, PINN , Computer Playfulness and PEU.

With limited cognitive capacity a user has, the demand of dealing with non-routine task can be high and would leave less capacity to deal with challenges faced with using a new system. Thus, high perceived ease of use would be very important for the user to accept a new system Sun and Zhang (2004). In view, of e-filing being a new system introduced by Lembaga Hasil Dalam Negara, this study focused on the

determinants of PEU. The key constructs chosen as the determinants of perceived ease of use will be discussed and justified in the theoretical model.

2.4 Theoretical Framework and Model Development

The theoretical framework for this study was developed based upon careful analysis of the work of (Fu, Fan & Chao, 2006) and (Venkatesh, 2000). Fu, Fan and Chao (2006) study on acceptance of electronic tax filing in Taiwan cannot be adapted completely to the Malaysian context. There are 2 main reasons for this:

(1). Taiwan had introduced e-Tax in 1998, therefore the implementation is not at the infancy stage like in Malaysia. About 40% of tax payers' in Taiwan are already using e-Tax.

(2). Taiwan is rated as the top and forefront leader in the implementation of e-government in the world according to (Global e-Government Study, 2005) of Brown University. Therefore, Taiwan's experience in e-Gov and e-Tax in particular is much more advanced than in Malaysia.

Based on the fact that e-filing in Malaysia is still in the infancy stage the following theoretical model (figure 2.2) was developed to study acceptance of e-filing in Malaysia. The model focuses on the determinants of ease of use in using e-filing. Computer self efficacy, Facilitating conditions, Computer Anxiety, Perceived Risk, Subjective Norm and Personal Innovativeness are the key determinants of perceived ease of analyzed in this study. Voluntariness has been chosen to moderate the relationship between the determinants and perceived ease of use.

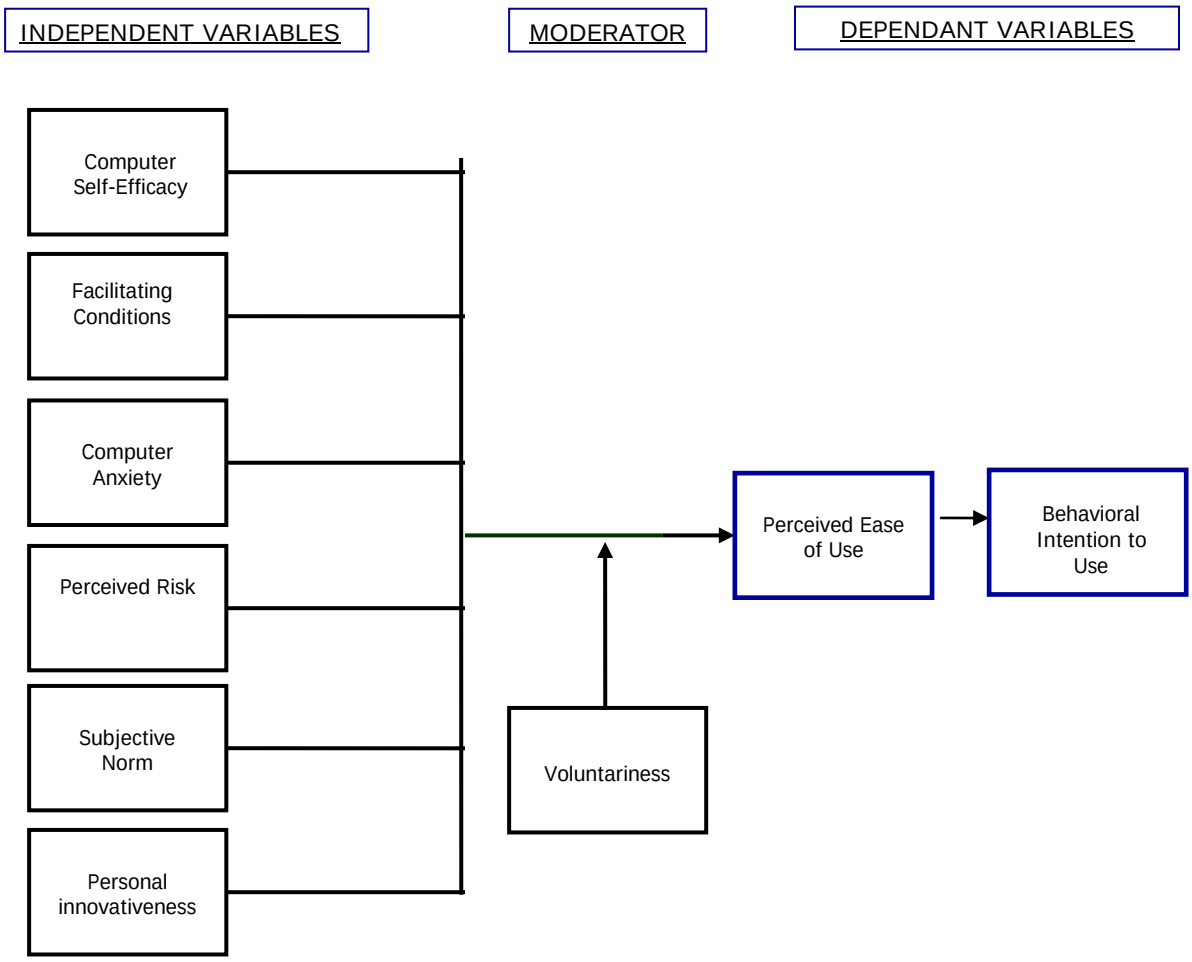


*Figure 2.2.*Theoretical framework

2.4.1 Computer Self-Efficacy (CEFF)

One of the most powerful theories of human behavior is the social cognitive theory (SCT). Social cognitive theory (Bandura, 1986) states that self efficacy as a direct determinant of individual's behavior. Compeau and Higgins (1995b) applied and extended SCT to the context of computer utilization (as cited in Venkatesh, Morris, Davis & Davis 2000). Compeau and Higgins (1995b) model studied computer use, however the

model and underlying theory allows it to be used extensively information technology research.

In a separate research, Yin and Hwang (2003) found that application of specific self efficacy was more powerful than behavioral intention in determining actual use of the system β=0.3 for application specific self efficacy, β=0.19 for behavior intention. This shows that users tend to adopt a system better when their own self-efficacy is higher. Consequently, application-specific self-efficacy is related in the model for this study.

In a more related study on acceptance of electronic tax filing in Taiwan, (Fu, Fan & Chao, 2006) had used self efficacy as a determinant to behavior intention. Their study indicates the self efficacy has a direct relationship to behavior intention to use internet tax filing. According to (Chan & Lu, 2004) individual with high computer self-efficacy are expected to be able to competently use different software packages and computer systems while those with low self efficacy would perceive their capabilities as limited to particular software package or computer systems. Recent literature that showed computer self-efficacy has a positive effect on perceived ease of use and the final decision to use computer (Agarwal, Sambamurty & Stair, 2000; Venkatesh, 2000; Chan & Lu, 2004; Ramayah et al.,2004; Ramayah & Aafaqi, 2004; Ramayah et al., 2005; Hassan, 2006; Gopi, 2006). So the proposed hypotheses are:

H1a. Computer self efficacy will be positively related to ease of use.

2.4.2 Facilitating conditions (FCON)

An environment with proper facilitating conditions will promote the exhibition of the appropriate behavior (Triandis, 1979). Taylor and Todd (1995) suggested that facilitating

conditions be made up of 2 aspects, namely resource facilitating conditions and technological facilitating conditions.

Fu, Fan and Chao (2006) elaborated that the absence of facilitating resources results in barrier to usage which may inhibit usage. Thus, a taxpayer might be unwilling to accept e Tax (as it is known in Taiwan) if little or no computer equipment is available and if technical support is low. Facilitating conditions was tested in a number technology acceptance study. The finding from (Thompson et al., 1994; Venkatesh & Davis, 1996; Taylor &Todd, 1995; Jiang, 2000) empirically supported the facilitating condition effect perceived usefulness and perceived ease of use. Facilitating condition was found to have a direct relationship on infusion and adoption of a number of new information system innovation (Cheung & Chang, 2000; Jones, Sundaraman & Chin, 2002). Yu,Lu & Liu (2005) also found strong causal relationship between wireless trust and facilitating conditions in their study on wireless mobile internet service adoption.

For this study facilitating conditions encompasses government support and resource support such as computers, connectivity to internet and training. This includes government provisions of computer support. Training could lead to increased self-efficacy which ultimately facilitates the diffusion and utilization of technology (Agarwal, Sambamurthy & Stair, 2000).

Therefore, the proposed hypotheses are:

H2a. Facilitating conditions is positively related to perceived ease of use.

2.4.3 Computer Anxiety (CANX)

Computer anxiety like computer efficacy relates to users' general perception about computer use. There are two components of anxiety according to (Morris et al, 1984) -

cognitive and emotional. The cognitive component underlies the negative expectancies and the emotional expectancy leads to negative physiological reactions.

Large amount of literature have highlighted the importance of computer anxiety by showing the influence on key dependant variables. Computer anxiety has been shown to have a significant impact on intention (Elasmar and Carter, 1996) and behavior (Compeau & Higgins, 1995a).

Past research has show that computer anxiety has a negative impact on constructs like perceived ease of use (Venkatesh, 2000), computer use (Igbaria & Parasuraman, 1989), computing skills (Harrison & Rainer,1992) affect towards computer (Compeau & Higgins, 1995) and general and specific computer self efficacy on computer training outcomes(Hassan, 2006)

Venkatesh (2000) also found that computer anxiety was one of the anchors that users employ in forming perceived ease of use of a new system. However looking at a practical point of view, computers have proliferated at home and workplace in Malaysia. There may be a question if the construct of computer anxiety which was so significant in studies over a decade ago is still relevant. However, computer anxiety will still be included in this study as there is no substantial literature to ascertain the level of computer efficacy among Malaysians. Based on the theoretical framework suggested, computer efficacy will be a determinant exerting negative influence on perceived ease of use.

H3a. Computer anxiety will be negatively related to perceived ease of use.

2.4.4 Perceived Risk (PRSK)

A common and widely recognized obstacle to electronic commerce adoption has been the lack of security and privacy over the internet (Bhimani, 1996; Cockburn & Wilson, 1996; Quein & Klein, 1996). According to (Chan & Lu, 2004), this has led many people to view e-commerce and internet application as risky undertakings. Therefore in the context of this study, individuals who regard e-filing as low risk would have a tendency to accept and use e-filing.

Studies have shown significant negative relationship between perceived risk toward attitude (Jarvenpaa & Todd, 1997; Bobbitt & Dabholkar, 2001; Heijden et al., 2003; Liu & Wei, 2003). Studies showing negative relationship between perceived risk and perceived usefulness includes (Lee et al., 2001; Lee & Ho, 2002; Featherman, 2001; Chan & Lu, 2004; Ramayah et al., 2005). However there were no prior literatures studying the inverse relationship between perceived risk and perceived ease of use.

Frambach (1993,1995) contends that the speed of adoption is negatively related to the level of perceived risk. The perceived risk surrounding and innovation might cause a potential adopter to postpone the decision to adopt or reject the innovation. Users of e-filing are influenced by risks they perceive, whether or not such risk actually exists. Their perception of e-filing will affect their speed of adopting the system. Therefore, perceived risk was included as one of the determinants of perceived ease of use in the present study. Thus the hypotheses are as follows

H4a. Perceived risk is negatively related to perceived ease of use.