

CHAPTER 2: LITERATURE REVIEW

2.1 Electronic Payment in Malaysia

The term electronic payment is a collective phrase for the many different kinds of electronic payment methods available (also meaning online payment), and the processing of transactions and their application within online merchants and ecommerce websites. It is essential for all online businesses to be able to accept and process electronic payments in a fast and secure way. Electronic payment is becoming a commonly used payment method in a wide variety of transactions. Many people believe that the electronic payment option offers more convenience, safety, and efficiency over paper-based methods. Electronic payment may be used in such transactions as, among others, banking, utility bill payment, tax payment, and consumer purchases.

Electronic payment or e-payment is any digital financial payment transaction involving currency transfer between two or more parties. In a simple context, an e-payment transaction may be defined as one in which monetary value is transferred electronically or digitally between two entities as compensation for the receipt of goods and services. An entity refers to a bank, business, and individuals. However it is obvious that any payment that is not transacted by paper based instruments is considered an e-payment transaction.

The Malaysian Electronic Payment System, commonly known as MEPS, is the only interbank network service provider in Malaysia that supports domestic,

development, Islamic and foreign banks. Since its inception in 1997, MEPS has been an integral part in the Malaysian financial landscape through its provision of interbank e-payment services for consumers. Malaysian Electronic Payment System (1997) Sdn Bhd is a payment consortium owned equally by 12 local banks/financial institutions. Its subsidiary companies are MEPS Currency Management Sdn Bhd (MCM) and FPX Gateway Sdn Bhd (FPX).

Their objective is to provide an efficient, cost effective and robust payment infrastructure. The achievement of greater efficiency in the payment system serves not only the interest of the financial industry but also the general public vis-à-vis the cost of doing business, thereby improving the competitiveness of the economy. Today, MEPS has also spread its wings across the borders, creating seamless cross border payment channels. We have established partnerships with switching networks in Indonesia, Singapore, Thailand and China for the provision of bilateral financial payment and credit transfer services. MEPS is committed to providing positive payment experiences for the business partners, merchants and consumers.

MEPS provide various services in its network to all participating banks. For example, Shared Nationwide ATM Network provides the switch which enable bank customers to conveniently access their funds anywhere from any of the participating banks' ATMs. Shared Regional ATM Network, a cross-border ATM link with Indonesia, Singapore, Thailand and China that offers participating

banks' customers the convenience of making cash withdrawals via ATM in the said countries and vice versa. E-debit enables the purchase amount to be immediately deducted from the savings or current account direct into the retailer's or merchant's bank account. Mobile Prepaid Top-Up via ATM offers more convenience for mobile phone subscribers to top-up through MEPS' ATMs.

Interbank ATM Fund Transfer (IBFT), allows bank customers to transfer funds from one account to another account in another bank. The beneficiary will receive the funds immediately and instantaneously, as the transfer is online and in real-time. Interbank GIRO (IBG) makes interbank funds transfer more convenient to bank customers via an electronic channel. It enables payments to be made without the need to raise physical supporting vouchers or documents such as cheques, bank drafts, etc. It is an interbank fund transfer system that facilitates payments and collections via the exchange of digitized transactions between banks.

Financial Processing Exchange (FPX) opens new doors for e-Commerce, in particular business to business (B2B) and business to commerce (B2C) payments. FPX is an alternative payment channel for customers to make payment at e-market places such as websites and online stores as well as for corporations to collect bulk payment from their customers. It leverages on the Internet banking services of participating banks and provides fast, secure, reliable, real-time online payment processing. FPX provides complete end-to-end

business transactions, resourceful payment records, simplified reconciliation and reduced risks as fund movements are between established financial institutions.

E-payment is very important for e-Government. This system have make it possible for government to send citizens information of payment via net, and payment also done by the used of these electronic payment. E-payment has a very important role to play in e-Government. However citizens can do such payment by means of using Internet banking system to pay bills. Companies and others business institutions can now do their payment transaction to governments through the used of the Internet. Moreover businesses and various institutions can pay their council taxes through this system.

Bank Negara Malaysia has entered into active partnership with the Government in facilitating the further deployment of e-payments in the economy. This included obtaining the support of the Government to expedite the widespread deployment of high-speed and reliable broadband Internet services which would spur further growth in Internet banking services and innovations that leveraged on Internet technology. The announcement of tax incentives relating to broadband services and the formation of the Cabinet Committee on Broadband in 2007 will provide the impetus to achieve the two inter-related objectives of increasing broadband penetration and the use of the Internet for banking and payment related activities.

As part of the Government's ongoing efforts to improve its delivery of public services, my Government portal was launched in December 2005 (BNM, 2007). The portal which enables the public to have direct access to a comprehensive range of online services was enhanced to offer online payment services in April 2007 (BNM, 2007). This includes the acceptance of credit cards as well as payments made from banking accounts via the Financial Process Exchange (FPX) system. The online payment facility is currently offered by the Companies Commission of Malaysia for payments associated with electronic lodgement of company and business statutory documents, and by the National Higher Education Fund Corporation for the repayment of education loans. The Inland Revenue Board Malaysia has also offered FPX as an online payment mode to the public to complement its e-filing services.

Significant efficiency gains for the Government and payment recipients are expected to be derived from the adoption of these e-payment systems, including enhanced operational efficiency and productivity through the reduction or redeployment of resources, and cost savings from less cash handling and speedier payments and receipts. Efforts undertaken included incorporating Bankcard as a payment option in the credit card terminals. The number of payment terminals accepting Bankcard increased from around 21,600 as at end-2006 to over 34,000 terminals as at end-2007 (BNM, 2007). By the end of 2008, the number of terminals is expected to increase further to 50,000. With the

infrastructure in place for the wider acceptance of the Bankcard, focus was shifted towards raising awareness of the Bankcard.

Advertisements were placed in the media and more coverage on the Bankcard was provided on the websites of issuing banking institutions. Bankcard offers an attractive value proposition to the merchants. Businesses and shops that receive cash payments have to incur high costs such as security and insurance to address the risk. Significant efficiency gains for the Government and payment recipients are expected to be derived from the adoption of e-payment systems. These efforts have resulted in the increased use of e-payments in place of cash and cheques. The volume of Government payments via electronic channels has increased ninefold from 699,463 transactions in 2004 to 7,033,891 transactions in 2007, while the value of transactions increased almost threefold from RM16.7 billion in 2004 to RM64.9 billion in 2007 (BNM, 2007)

The infrastructure to enable e-Payment to the Government has been in place since 1 July 2008. As of 31 December 2008, 89 Government agencies have started accepting online payments for a total of 148 services (PEMUDAH, 2010) For who are not e-ready, payments can still be made the conventional/traditional way over the counter at post offices, respective agencies, banks and kiosks placed at selected places such as shopping malls. Among the numerous e-payment services available are driver's licence and road tax renewals, and settlement of summonses at Road Transport Department branches. Payment

through e-services is also accepted at 111 approved sites for the booking of theory tests, issuance and renewal of learner driving licences, and renewal of competent driving licences (PEMUDAH, 2010). Other departments and ministries that have extended their online services include The Royal Malaysian Police (PDRM) for traffic summonses, the Immigration Department, Land and Mines Department, Inland Revenue Board (IRB), Ministry of Education, Ministry of Finance and Public Service Department. Settlement of the Assessment Tax through e-payment is also accepted for most of the local councils throughout the country.

2.2 Malaysian Tax System: Self Assessment System

Malaysian tax system is administered under by organization of the tax department and number of officials. The first organization is the Inland Revenue Board of Malaysia (IRBM). IRBM is under the jurisdiction of the Ministry of Finance. IRBM is responsible for the administration of direct taxes under the Income Tax Act 1967, Petroleum (Income Tax) Act 1967, Real Property Gains Tax Act 1976, Promotion of Investment Act 1986, Stamp Act 1949 and Labuan Offshore Business Activity Tax Act 1990. Meanwhile, The Royal Customs and Excise Department is responsible for the administration of the indirect taxes.

Under the Income Tax Act, 1967, a transaction must fall within the ambit of "scope of charge"(Section 3) in order to be liable to income tax. Section 3 sets out 2 circumstances where income tax liability would arise, namely:

- i) The transaction must be "income" in nature and such income is accrued in or derived from Malaysia; or
- ii) The transaction must be "income" in nature and it is received in Malaysia from outside Malaysia (foreign source income)

Income tax has become the main means of transferring privately owned resources to public use. Taxes are collected through force, not on voluntary basis in the form of money (Zulkornain, 1994). It is a sum of money collected from the income of a person or company by the government for the purpose of developing a country's economy. In Malaysia, government collected taxes can be categorized into two: direct taxes, and indirect taxes (Kasipillai, 2003). Direct taxes are corporate tax, individual income tax, petroleum tax, real property gains tax and stamp duty. Indirect taxes include import and export duties, sales and service tax, excise duties, property taxes, entertainment tax and road tax. There are no payroll, turnover or state taxes in Malaysia.

Malaysia practices the self assessment system (SAS) in the computation, disclosure and payment of taxes which came into effect from 2001 for companies and 2004 for individuals, partnerships, businesses and cooperatives. Under the SAS, taxpayers assess their own tax liability and pay taxes based on disclosed

figures as they are earned. Taxes are paid in the financial period in which profits are earned. The responsibility of correctly assessing a person's tax liability is transferred from the Inland Revenue Board (IRB) to the taxpayer. The main objective of SAS is to inculcate a practice of voluntary compliance by taxpayers and at the same time, reduce the workload of the IRB to enable them to focus on tax audits and increase collection revenue.

SAS is the manner in which taxpayers work out and pay their own income tax. It is not a new tax but a system whereby taxpayers are given the responsibility to compute their own tax liability. It is a total process change from the previous official assessment system (OAS). Under the OAS, taxpayers are required to declare their income in the tax return form, submit the tax return form to the IRB and the IRB will then raise the assessment. The notice of assessment is sent to taxpayers and based on the tax raised in the notice of assessment, payment must be made accordingly.

Meanwhile, under the SAS, taxpayers are still required to complete and submit tax return form by the required dates. However, no notice of assessment will be sent to the taxpayers. Instead taxpayers will have to compute their own tax and make payment of the full amount at the time also required to estimate the tax to be paid for the current year and make monthly payments during the year based on the estimate. Taxpayers are allowed to make monthly payments to IRB directly or pay through their panel banks. In the case of an employee, the

Schedular Tax Deduction Scheme will continue to apply whereby tax will be deducted from the monthly salary and remitted to the IRB by the employer.

SAS is introduced for the benefits of both the taxpayers and IRB itself. For taxpayers, self assessment will allow them to better manage their own tax affairs. To do this they have to keep proper records, fill their tax returns correctly, compute their tax liability and finally submit their tax return form with the final payment of tax (if any). For the IRB, the change to the Self Assessment System is aimed at modernizing and streamlining the tax administration, increasing the level of income tax compliance and producing a more efficient system and faster collection of taxes.

By using the system, taxpayers have to maintain a good record keeping system which will help in verifying any claims made should the IRB require them to be produced. Other than that, taxpayers have to determine their correct tax liability and make payments promptly. That does not mean that the IRB would not examine the return forms at all. A certain percentage of the return forms will be audited. It is very likely that IRB will audit those returns with a high probability of under declaration of taxable income or tax payable and those that are inherently of high risks to revenue. This is called tax/field audit. It is how the IRB monitors taxpayers' compliance with the law since the responsibility of correctly assessing the tax liability is now transferred from the IRB to the taxpayers.

2.3 Tax payments in Malaysia

As per the Income tax Act 1967, an individual is said to have committed an offence with regards to tax payment if, they fail to submit a completed tax return within the due date, or they provide incorrect information on matters affecting their liability, or they fail to comply with notice asking for certain information, or they fail to give notice of their chargeability to tax within the stipulated period. In such cases, any taxpayer who is found guilty of committing an offence shall be liable to a penalty varying from RM 200 to RM 10,000, or an imprisonment for a maximum period of six months, or both, depending upon the type of offence committed.

However, taxpayers should not be worried about hassle of making payment. The system of Standard tax deduction was introduced in 1995, where, employers deduct the tax amount from their employees' salary, and remit it to the IRB office by 10th of the succeeding month. The employer is also liable to provide a complete statement giving the full details of remuneration paid, tax deducted for the whole year to each employee, not later than 30 days of completion of the calendar year.

With the advent of technology, the Malaysian government has also facilitated payment of income tax electronically (e-payment of income tax). Malaysia's online financial services portal helps the taxpayers to remit their taxes

electronically. The e-payment option of this site helps the taxpayers to pay their tax directly to the IRB. Thus, we find that income tax structure in Malaysia is quite similar to that in India. It is also simple, well designed, and easily understandable.

There are three IRBM Tax Collections Centers, located at collections branches in Kuala Lumpur, Kuching in Sarawak and Kota Kinabalu in Sabah. These payment counters accept tax payments in cash, cheque, bank draft, postal order, or money order. Tax payments can also be made by post to these branches. The IRBM continuously takes steps to improve the effectiveness of services at all its payment counters. These include increasing the number of counters and consultation rooms, extending service hours during peak periods and increasing the facilities available for taxpayers at the waiting area. To facilitate tax payment, few panel banks were appointed as collection agents for tax payments.

Taxpayers with sources of income other than employment are required to pay in bimonthly installments. Under this scheme, an installment payment notice (Form CP500) will be issued to the taxpayer specifying an installment payment schedule from March to January of the following year. If the installment for a given month is not paid within 30 days from the due date, the amount payable will be increased by 10% of the unpaid amount. The taxpayer can amend the installment amount by submitting an installment amendment application form (Form CP502) no later than 30 June of that year

The monthly installment for companies, trust bodies, unit trusts and cooperatives are based on the estimated tax submitted through the relevant form (Form CP204). Under this scheme, the taxpayer is required to make payment from the second month of the business's basis period to the first month of the following accounting period. Failure to abide by the payment schedule will result in a tax increase of 10%. Taxpayers are also allowed to amend the tax estimate in the sixth or ninth month, or both, of the basis period. The IRBM will issue an installment payment order (Form CP205) to taxpayers who fail to submit their tax estimates within the stipulated period.

Visits to premises are a proactive effort by the IRBM to collect tax arrears. There are a few approaches that were carried out. For example, tax arrears reminder letters or notices of demand are delivered and discussions are held with the taxpayer on the payment schedule; the taxpayer is advised on how to make payment via the approved payment methods; explanation is given to the taxpayer on the impact and action that shall be taken against them for any subsequent failure to settle tax arrears; and summonses are delivered to taxpayers who default on their tax payments after notices of tax arrears demands have been issued. If no feedback is received, or if the taxpayer fails to comply with the payment schedule that was agreed upon, a civil suit will be made. Should the notices and summonses fail to be served, the taxpayer will be traced by checking the information in the IRBM Data Warehouse as well as other appropriate sources of information.

To collect tax arrears, the IRBM enforces a ban from leaving the country on taxpayers who are believed to be planning to leave Malaysia without paying their tax arrears. The ban is enforceable under section 104 of the ITA 1967 and section 22 of the RPGTA 1976. Those section highlight that, outstanding and payable taxes are debts due to the Government that are recoverable through civil suits. As such, civil suits are brought against taxpayers who fail to settle their income tax or RPGT within the stipulated period. A civil suit is initiated by filing a summons and a statement of claim either at the Magistrate's Court, the Sessions Court or the High Court, depending on the amount claimed. Claims not exceeding RM25,000 are filed at the Magistrate's Court, claims up to RM250,000 are filed at the Sessions Court, and claims of more than RM250,000 are filed at the High Court. Civil suits are conducted in court until a judgement is obtained against the taxpayer.

2.4 Acceptance of e-payment

E-payment is a new channel to pay taxes via electronic medium such as the internet. Although it is convenient, easy, flexible and available anytime, the innovation might cause some problems to taxpayers. At present, there is very limited literature that focused on the adoption of e-payment system, particularly in Malaysia context. Most of the literature related to tax e-filing adoption, to assess the adoption intention of the e-filing system and to observe the e-filing adoption among taxpayers.

Mr. Mohammad Sait Ahmad, Director of the Department of Tax Operation, Inland Revenue Board of Malaysia (IRBM) made his keynote speech entitled “The Experience of Malaysian Tax Authority in E-filing and E-payment” in Tax Administration Seminar VI: Taxpayer Services Focusing on E-filing and Payment, which was held in Hanoi, Viet Nam from 23 to 25 June 2009. Malaysian tax administration has introduced a system whereby tax payable amounts are estimated by using the e-filing system. E-payment can be done via Financial Process Exchange (FPX) or bank’s Internet banking platform. The FPX system allows several banks (five banks currently) to pay for one customer’s account, thereby improving convenience. To use FPX, taxpayers need to register as Internet banking user with FPX bank members. This system operates 24 hours per day. If taxpayers wish to make a payment through Internet banking platform, they can do it at the designated banks. Currently, there are seven designated banks, within which only one bank is a foreign bank (i.e., Citibank).

There are many benefits of the e-filing system. Similarity to e-filing, e-payment also benefits not only taxpayers, but also tax authorities. Taxpayers no longer need to present at payment counters to pay their taxes. They can do it at home because it is safe, fast, convenient and easy to do online. This explains for a dramatic change in number of taxpayers used e-filing and e-payment in Malaysia. For example, while in 2005, there were only twenty-eight taxpayers using the e-filing, this figure jumped to about 1.4 million by May 2009. Thanks to

the increase in the number of taxpayers using e-filing, tax authorities can save almost RM9.2 million for the cost of printing forms.

Ahmad (2009) also stressed challenges to the Malaysian e-filing and e-payment system. The first challenge is constraint related to the information and communication technology (ICT). Because ICT is advanced frequently, it always comes up with high cost which is a big burden to developing countries. Meanwhile, customer's demand about services is increasing, leading to a pressure on tax authorities' technology. It is required to provide even and stable coverage to all taxpayers. Second, another challenge comes from cooperation and partnership with third parties such as banks to provide better services and to reach out for more users.

Third, building and sustaining public awareness is challenging. It takes time and cost to train and to educate tax agents and taxpayers about the efficiency and usefulness of the e-filing and e-payment system. It is difficult to provide more personalized support services to customers as well as to assist and guide them in using new services. Customers should catch up with updated knowledge and skill about the latest technologies. Forth, building trust and confidence for the e-filing and e-payment system is another challenge. Tax authorities may face a number of difficulties in facilitating and assisting taxpayers to use new services. It is also not easy to convince taxpayers about the easier and cheaper method to

fulfill their tax obligations without paying any extra burden or cost. Changing this mind set of taxpayers and the public including tax agent is not an easy task.

Finally, security of the system is another crucial issue. There are many challenges related to the security of the systems, such as; legal status of online transactions, integrity and security of information; enforcement of ICT policies and systems; and cyber laws, including security, network integrity and reliability issues. Ahmad (2009) also suggested some possible improvements, such as; convert all forms to e-filing; ensure the greater system stability; integrate with other agencies; integrated with private software providers; track complaints and compliments; and (vi) have a regular dialogue with professional bodies.

Ahmad (2009) concluded his presentation with the emphasis that the e-filing and e-payment system plays an important role in strengthening a better service delivery. They improve the effectiveness and efficiency of revenue collection in terms of administration. The e-filing and e-payment system also benefits taxpayers by reducing costs, money and time as well as increasing the accuracy of refunds. It is the right direction towards organizational excellence.

Currently, Malaysian taxpayers have few choices to pay their tax liability using e-payment which is an electronic application for income tax payment through appointed bank, either using the Financial Process Exchange (FPX) by logging on to the IRBM' website at <http://epayment.hasil.gov.my> or through their panel

banks' webpage such as CIMB Bank, Public Bank, Maybank, RHB Bank, EON Bank, Alliance Bank and Citibank. Banks that involve with FPX are Bank Islam Malaysia Berhad, CIMB Bank Berhad, Hong Leong Bank Berhad, Maybank Berhad and Public Bank Berhad.

Since the introduction of e-payment in year 2006, it has growth tremendously every year in terms of number of transaction and total amount of tax collection from taxpayers. In 2006, there is only one transaction which means one taxpayer using it with amount paid of RM1,000. This is maybe due to the first year of implementation and it was not make known to public yet. The following year, no of transaction has shoot up 156,600% and 101,148.39% in amount. A number of taxpayers has been introduced and used e-payment after a year. While in 2008, more and more taxpayers are exposed to this kind of payment method since it has increase no of transaction by 801.66% and amount of tax collected by 733.73%. Previous year, more increment shows in no of transaction and amount of tax payment which increase by 37.81% and 61.43%. If we look at the total amount of tax collected for the past four years, there is gradual increment from the first year e-payment being introduced. More than 50% increase in year 2007, 100% in year 2008 and 150% in year 2009. Then it shows that more and more taxpayers are accepting the new method and willing to pay their tax liability electronically. Detail of statistic is as in Table 2.1 and 2.2 below.

IRBM is actually moving forward in negotiating with more commercial bank, locally and internationally in order to give more options to taxpayers for their comfort in paying tax and reduce their burden in order to fulfill their responsibility towards the government. Collaboration with AmBank Malaysia Berhad and Affin Bank Malaysia Berhad has been discussed, also with OCBC and HSBC Bank. Besides that, IRBM also has been discussing with MAMPU to collaborate the e-payment through their webpage. The collaboration is still under research and development in order to satisfy both parties on the process and procedures so that taxpayers could gain the most benefits from it.

Table 2.1 Statistics of Number of Transaction of Tax Collection in Malaysia

Payment Method	2006	2007	2008	2009
	No of Transaction	No of Transaction	No of Transaction	No of Transaction
E-banking (Banks)	9,919	17,884	71,517	133,003
% increase		80.30%	299.89%	85.97%
E-payment (FPX)	1	1,567	14,129	19,471
% increase		156600.00%	801.66%	37.81%
Total	9,920	19,452	85,649	152,475
% increase		96.09%	340.31%	78.02%

Source: Revenue Collection Department, Inland Revenue Board of Malaysia

Table 2.2 Statistics of Amount of Tax Collection from Taxpayers in Malaysia

Payment Method	2006	2007	2008	2009
	Amount	Amount	Amount	Amount
E-banking (Banks)	66,292,179	99,215,247	201,371,447	548,982,234
% increase		49.66%	102.96%	172.62%
E-payment (FPX)	1,000	1,012,484	8,441,397	13,626,587
% increase		101148.39%	733.73%	61.43%
Total	66,293,179	100,227,732	209,812,844	562,608,823
% increase		51.19%	109.34%	168.15%

Source: Revenue Collection Department, Inland Revenue Board of Malaysia

The Star, Dec 24th 2009 highlight that IRBM is confident of achieving its gross tax collection of RM86bil this year after having received 98.8% of the amount as at Dec 21st 2009. The Deputy Finance Minister Datuk Dr Awang Adek Hussin, stated that the gross figure collected by IRB so far this year was RM85.1bil. He said the gross tax figure receivable would drop by about RM2.7bil compared with last year due to the economic downturn but, the amount is not much different from the previous year (up to Dec 21) despite the country facing economic uncertainties. The usage of e-filing in year 2008 was 1,189,992 cases and in 2009 is 1,331,809 cases. This shows that awareness and confidence of taxpayers is increasing after a year. It might increase in current year since more and more promotion being introduced to public.

2.5 Literature Review

Study on Electronic Payment Systems for the Committee on Economic and Monetary Affairs and Industrial Policy of the European Parliament, 1999 has highlighted that there is wide consensus among experts on the effects of several factors to the deployment of ecommerce which are not directly related to the security of electronic payment systems. The most important includes cultural, generational, linguistic and computer literacy barriers, as well as growth factors related to the penetration of internet infrastructure, to telecommunication costs, to the added value of on-line business solutions, to standardization and finally to legal issues, in particular regarding consumer protection.

This shows that there are various factors that lead to acceptance of electronic payment system. Few researchers has prove that acceptance of electronic payment was driven by the usefulness, ease of use and compatibility of the system itself. Ramayah, Norazah and Amlus (2005) have conducted a study on determinants of intention to use an online bill payment system among MBA students in the University of Science Malaysia. Perceived usefulness (PU) and perceived ease of use (PEOU) and have emerged as key determinants in influencing the intention to use the online bill payment system.

Pikkarainen, Karjaluoto and Pahnla (2004) have done a study on consumer acceptance of online banking in Finland which indicates that perceived usefulness (PU) was found to be the most influential factor explaining the use of online banking services. This finding refers to the fact that consumers use online banking for the benefits it provides in comparison to other banking delivery channels which is in line with other TAM studies (e.g. Davis, 1989; Davis et al., 1989), which found that perceived ease of use (PEOU) has less impact on technology acceptance than PU.

Carter and Belanger (2004), have also done a study on citizen adoption of electronic government initiatives in Virginia which integrates constructs from Davis' (1989) technology acceptance model and Rogers' (1995) diffusion of innovation theory, which have been used to evaluate consumer adoption of e-commerce, into a concise model of citizen adoption of e-government. They found that perceived usefulness (PU), relative advantage and compatibility (CMP) are significant indicators of citizens' intention to use state government services online.

Al-Somali, Gholami and Clegg (2008) have also conducted a study on internet banking acceptance in the context of developing countries like Saudi Arabia. The relationship of customer's demographic characteristics (such as age, gender and income) was not confirmed but significant influences have been found relating to level of education. Moreover, perceived ease of use (PEOU) and perceived

usefulness (PU) were confirmed as critical and highly significant factors to encourage customers to accept and adopt such a technology. Low awareness of Internet banking is a critical factor in causing customers not to adopt or use Internet banking and Saudi commercial banks willing to increase Internet banking utilization should emphasize the benefits and advantages afforded by internet banking (reliability, convenience, unrestricted by traditional time and space) to increase perceived usefulness of this additional services.

Meanwhile, there were also researches that have proven risk to be the major factor that affect acceptance of electronic payment system. For example, Featherman and Pavlou (2002) have conducted a study on predicting e-services adoption. Perceived risk (PR) was found to exert a strong inhibiting influence on TAM's criterion variables. Performance-related risk facets (time risk, privacy risk, financial risk) proved to be the most salient concerns. Evidence for a risk facet hierarchy was provided as the potential loss of time and a poorly performing e-service emerged as the most salient risk facets with financial, privacy and psychological risk concerns explaining the variance in a combined performance/time risk variable.

Sahut (2008) has also conducted a study on the adoption and diffusion of electronic wallets in France. He concluded that the key factors of success of this payment method are security, anonymity of transactions, the cost of transactions, as well as the plurality of functions (payment, travel card, e-key for building

access, etc.). These key factors, already known to banks from their experience with bank cards, have often been neglected and explain why many e-wallets have encountered problems developing.

Morten, Niels and Mie (2004) have also conducted a study on usable security and e-banking: ease of use vis-à-vis security in Denmark which conclude that attaining both security and ease of use in e-banking systems is difficult because security is not a system feature that can be provided automatically while users focus on their primary goal of accomplishing their business with their bank. Users are only able to complete installation of the e-banking systems by painstakingly following instructions, accepting defaults, and refraining from any real understanding of the involved security issues. However, the high penetration of e-banking systems in Denmark suggests that many people are prepared to trust e-banking systems in the absence of compelling, publicly known evidence about security breaches leading to financial loss by e-banking customers.

Graham (2003) has conducted a study on the evolution of electronic payments in US. He concluded that, electronic payment security has missed out on a lot of technical innovation improvements seen in other industries. But as levels of fraud continue to increase, so too will the cost to the consumer. If this problem is not addressed, credit cards and electronic payments may become an unviable option for consumers. One of the major strengths of the current system is its overall generic nature, allowing businesses to accept all major cards, whilst utilizing the

one piece of technology. However, any major improvements in credit card security are most likely going to result in an increased competitive advantage for the company which introduces it.

However, there is not much study that has proven that subjective norm and perceived behavioral control actually has major impact towards acceptance of electronic services so far. Therefore, that has initiated a study to use the said factors to also being included in. It is a matter of finding the impact of norm, efficacy and facilitating condition of public towards the acceptance of e-payment system.

2.6 Research Model

The determinants of the research model are based on the Technology Acceptance Model (TAM). Davis' (1989) technology acceptance model (TAM) is widely used to study user acceptance of technology. Several studies have also used TAM to evaluate user adoption of electronic commerce (Carter & Belanger, 2004). TAM is based on the Theory of Reasoned Action (TRA) which states beliefs influence intentions and intentions influence one's actions. TRA suggests that attitude toward a behavior and subjective norm are the predictors of behavioral intention that will eventually lead to the actual actions. According to TAM, perceived usefulness (PU) and perceived ease of use (PEOU) influence

one's attitude toward system usage, which influences one's behavioral intention to use a system, which, in turn, determines actual system usage.

Davis defines PU as “the degree to which a person believes that using a particular system would enhance his or her job performance”, while PEOU as “the degree to which a person believes that using a particular system would be free of effort.” PEOU is predicted to influence perceived usefulness, since the easier a system is to use, the more useful it can be. These constructs reflect users' subjective assessments of a system, which may or may not be representative of objective reality. System acceptance will suffer if users' do not perceive a system as useful and easy to use. Refer Figure 1 below.

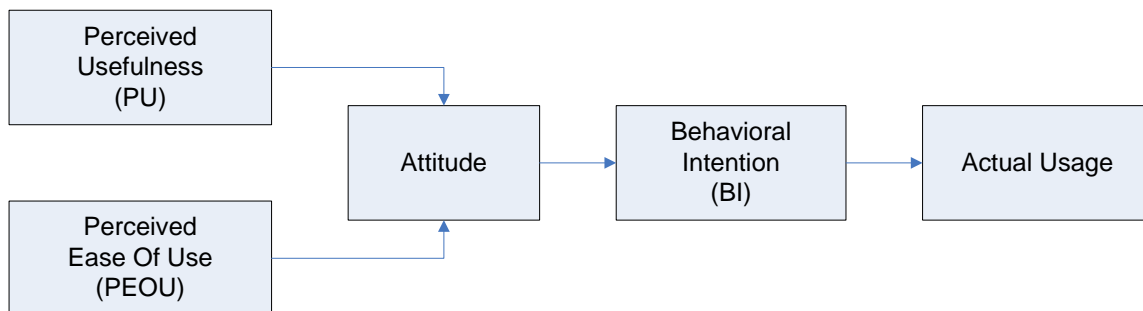


Figure 1: Davis' (1989), Technology Acceptance Model (TAM)

TAM replaces many of TRA's attitude measures with the two technology acceptance measures – ease of use, and usefulness. TRA and TAM, both of which have strong behavioral elements, assume that when someone forms an

intention to act, that they will be free to act without constraints, environmental or organizational limits, or unconscious habits which will limit the freedom to act (Bagozzi et al., 1992). The theory of reasoned action (TRA) (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975) has proven that the utilization of a particular system is determined by the behavior intention of the users. Adoption behavior is also influenced by the attitude and subjective norm of the users (Malhotra & Galletta, 1999). Refer Figure 2 below.

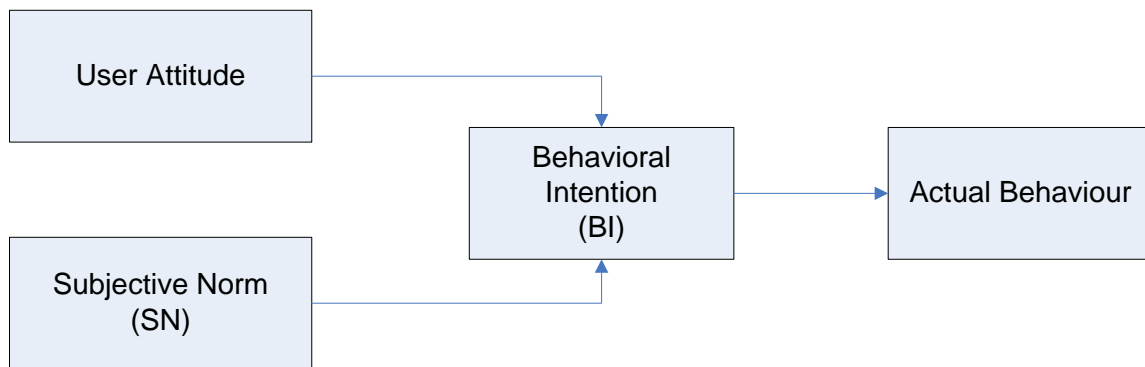


Figure 2: Aizen and Fishbein (1980), Theory of Reasoned Action (TRA)

The Theory of Planned Behavior (TPB) is a theory about the link between attitudes and behavior (Ajzen, 1985). The theory was developed from the Theory of Reasoned Action (TRA), which was proposed by Ajzen and Fishbein (1980) which was grounded in various theories of attitude. According to the TRA, if people evaluated the suggested behavior as positive (attitude), and if they think their significant others wanted them to perform the behavior (subjective norm),

this results in a higher intention (motivation) and they are more likely to do so. A high correlation of attitudes and subjective norms to behavioral intention, and subsequently to behavior has been confirmed in many studies.

A counter argument against the high relationship between behavioral intention and actual behavior has also been proposed as results of some studies do not show that behavioral intention always leads to actual behavior because of circumstantial limitations. Namely, since behavioral intention cannot be the exclusive determinant of behavior where an individual's control over the behavior is incomplete, the Theory of Planned Behavior (TPB) is introduced by adding a new component, perceived behavioral control (PBC to cover volitional behaviors for predicting behavioral intention and actual behavior. PBC is consist of few components; Self-efficacy (SE), Resource Facilitating Conditions (RFC) and Technology Facilitating Condition (TFC). Refer Figure 3 below.

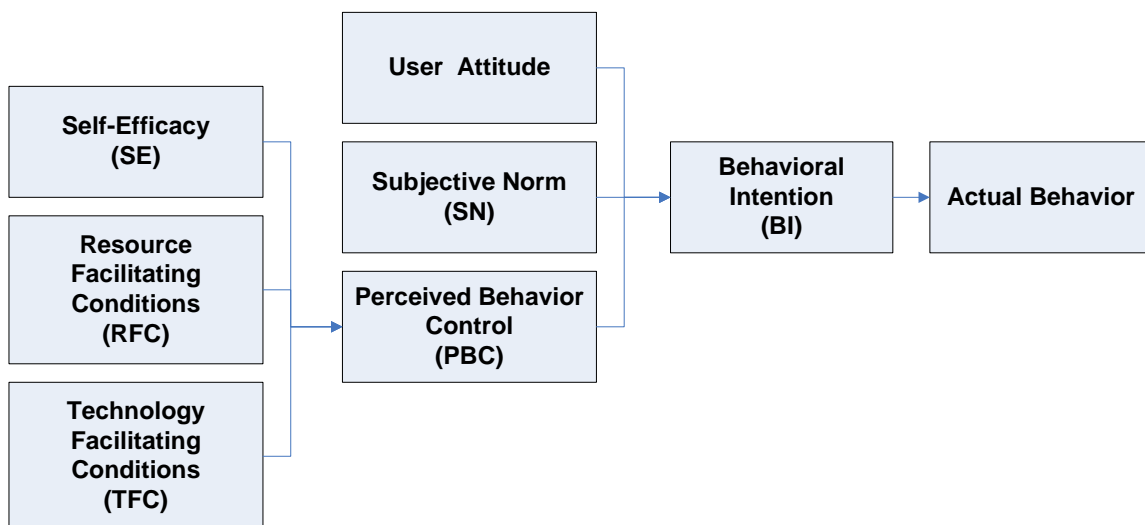


Figure 3: Ajzen (1985) Theory of Planned Behavior (TPB)