CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

This chapter will review and analyze the literature on factors affecting the user intention to accept a particular e-service application provided not only by profit oriented organization but also government agencies. The discussion will then explore the similarities between e-service and e-government as well as the differences that justify this research

2.2 E-COMMERCE AND E-SERVICES

E-services represent ways to provide on demand solutions to customers, strengthening customer–service provider relations, creating transactional efficiencies and improving customer satisfaction (Featherman and Pavlou, 2003). Distinguishing the difference between conducting basic e-commerce purchases and adopting e-services is important.

E-service adoption decision is different from the usually one-time e-commerce-based purchase decision. E-services initiate a long-term relationship between the consumer and service provider where consumers receive access to services offered while e-commerce is usually associated with electronic transaction

involving tangible good purchased. It is riskier for the consumers as they contemplate entering into a business relationship with distant, faceless e-service providers without the payout of a tangible product (Featherman and Pavlou, 2003).

Since e-services are technologically oriented, understanding technology acceptance defined as “an individual’s psychological state with regard to his or her voluntary, intended use of a technology” is important. TAM is able to predict of IS acceptance and usage because it was designed to gather evaluative measures of information system (IS) quality and suitability to job requirements. Davis et al. (1989) wrote ‘‘…the goal of TAM is to provide an explanation of the determinants of computer acceptance that is general, capable of explaining user behavior across a broad range of end-user computing technologies and user populations’’. TAM theory stipulates that actual use is dependent on the behavioural intention, which is a result of the attitude toward using. This attitude toward using meanwhile is hypothesized to be dependent on perceived usefulness (PU) or benefit gained and perceived ease of use (PEOU) (Davis et al., 1989).

TAM has been the most established and often used theory in examining factors affecting adoption of e-commerce. Chen et al. (2002) examined the factors that are able to entice consumers from physical store and use a virtual store, in other words it explained the consumers motivation to use an e-commerce application.

TAM and innovation diffusion theory was applied and they found that both these theories are valid in explaining and predicting users' behavior towards e-commerce. Users' intention that is determined by their attitudes towards using virtual store is found to be able to predict consumer acceptance and use the said virtual store. Both the TAM factors PU and PEOU as well as compatibility were found to be the primary determinants of consumer attitudes towards using virtual stores.

Almost all purchasing situations involve risk even though at different levels (Bauer, 1967). Uncertainty and consequences are use to define the perceived risk (PR) (Cunningham, 1967) and it (PR) has powerful effect on consumers' decision making process (Mitcell, 1992). PR is normally associated with feelings of uncertainty regarding possible negative consequences of a transaction such as adopting an e-service application. PR plays a role in electronic service adoption decision when circumstances of the decision create among others feelings of uncertainty (Engel et al., 1986), discomfort and/or anxiety (Dowling and Staelin, 1994), conflict trigged (Bettman, 1973) and concern.

Security features that aim to reduce the risk of an electronic transaction mentioned above such as encryption and authentication are the most valued by consumers (Belanger et al., 2002). Interestingly however, Belanger et al. (2002) also found that convenience, ease of use of the system as well as pleasant web

design interface are more important than the security and privacy features of an electronic commerce system.

Existence of risk also renders trust as an important variable that enable buyer and seller relationships especially in the world where internet is the medium. Trust that is defined as “the perception of confidence in the electronic marketer’s reliability and integrity (Belanger et al., 2002)” and perceived risk (PR) are salient in predicting consumer acceptance of e-commerce given the implicit uncertainty of the e-commerce environment. The connection between the two variables is that trust in electronic application reduces uncertainty tendencies and subsequently related risks associated with the possible opportunistic behavior by the web retailer (Pavlou, 2003). Thus when Web retailers are trustworthy, the risk involved in their interaction will reduce. Moreover, trusted Web retailers are expected to take the necessary steps to reduce risks associated with a risky medium such as the Internet infrastructure.

Extensive use of technology and nonexistence of personal contact in the online environment that lead to the perception of impersonal and distant relationship have made the inclusion of trust and perceived risk valid. Trust, PU and PEOU were found to be the most influential predictor of an e-commerce transaction intention (Pavlou, 2003 and Gefen et al., 2003 and Pavlou and Fygenson, 2006). Pavlou (2003) found that all the predictors above (trust, PU and PEOU) including PR strongly predict intention to transact indirectly and were found to be have

insignificant direct effect on actual transaction behavior. Trust was also found to be built not only through belief that service provider has nothing to gain by cheating and belief in security mechanism built into the system but also the system's ease of use (Gefen et al., 2003).

This in turn brings us to the research that has been done by Featherman and Pavlou (2003) that was being adopted by this current research. Featherman and Pavlou (2003) went a step further by drawing from Perceived Risk Theory and integrated it with TAM theory not on e-commerce but e-service adoption model. This research broke perceived risk down to different facets of risk, *(*1) performance, (2) psychological, (3) privacy, (4) time and (5) social and (6) financial risk. Results indicated that e-services adoption is adversely affected primarily by performance-based risk which was found to be the major inhibitor of e-services adoption. PEOU that previously found to affect e-commerce indirectly was also found to affect e-service adoption intention indirectly through reducing of risk concerns.

2.3 E-GOVERNMENT

E-government is defined by (Carter and Belanger, 2005) as "the use of information technology to enable and improve the efficiency with which government services are provided to citizens, employees, businesses and

agencies. Malaysia's e-government initiatives meanwhile strives to offer efficient, high-quality administrative on-line services to citizens and businesses, to streamline government's internal process to improve quality of service, reduce costs and increase productivity, strengthen data security and protect privacy, increase citizen participation in government and create transparency through good documentation, effective communication (Mohd Zahri, 2009).

In terms of e-government framework, Belanger and Hiller (2006) identified five stages of electronic government; from the simplest of e-government form of Information stage to Participation stage. The service availability of this e-government stages ranges from only viewing of government related information to Transaction stage where citizens can interact and conduct transactions to Integration stage, where all aspects of government services are integrated in one single one stop portal.

The e-government Malaysia portal (www.malaysia.gov.my) is the official portal of the Government of Malaysia, which serves as the single gateway for Malaysian Government information and services. This portal is categorized in the *Integration* stage of the framework for e-government proposed by Belanger and Hiller (2006) where not only that the Malaysian government has sites available for actual transactions (*Transaction* stage), the portal also integrates almost all government services available. Defined as "A multimedia networked paperless

administration linking government agencies within Putrajaya with government centres around the country to facilitate a collaborative government environment and efficient service to businesses and citizens (MAMPU 2009)", e-government portal connects 28 Federal Ministries, 219 Federal Departments or Federal Statutory Bodies, 346 State Departments and State Statutory Bodies and 142 Local Government Authorities.

Other than e-government portal, detailed web presence of various ministries and agencies of the government with downloadable options has been added for public convenience including the IRB official website. The government is confident that with the full implementation of e-government, more and more services could be provided online where agencies at federal, state and local authority will collaborate relating to services and present them as one public service portal. Therefore, the services will be accessible to the members of public at any time and from any place without being constrained by agency working hours and distance.

The vision of Malaysia's electronic government focuses on effective and efficient delivery services, enabling the government to become more responsive to its citizens needs. In order to realize this vision, Malaysia's e-government initiatives as one of MSC flagships, recognized seven main projects; Project Monitoring System (SPP II), Human Resource Management Information System (HRMIS),

Generic Office Environment (GOE), Electronic Procurement (eP), Electronic Services (e-Services), Electronic Labour Exchange (ELX) and e-Syariah.

One of the main projects, SPP II is a system that monitors the entire lifecycle of national projects online. HRMIS meanwhile is an integrated, technology-enabled human resource (HR) system for the Malaysian public service, incorporating Global Best Practices in HR. GOE on the other hand enables the networking of government officers (to communicate and share information) with the use of an efficient EG Document Management System and Malaysia's eP, *e-Perolehan acts* as a virtual market place for suppliers and government agencies. Through this electronic medium, suppliers are able to receive tender information and obtain tender documents released by public agencies, introduce their products and services, submit bids and quotations and also complete transactions and receive payments. *e-Perolehan* transaction value grew to RM 2 Billion worth of contract after nearly 10 years in operation. *E- Syariah* serves as a one-stop counter for virtually all matters related to Islamic judiciary and links all *syariah* courts in Malaysia (Mohd Zahri, 2009; Siddiquee, 2007). Despite the benefits of e-government citizens' unwillingness to adopt this innovation can hinder the acceptance and success of e-government initiatives.

The differences between e-commerce and e-services have already been discussed earlier. Differences between e-government and e-commerce

meanwhile have been summarized nicely by Symonds (2000) who wrote, “e-government is not just e-business on a large scale.” Jorgensen and Cable (2002) identify three major aspects that differentiate e-government from the normal practice of e-service: access, structure and accountability. In terms of access, government agencies are responsible for providing access of all of their services including e-government facilities to the entire eligible population. In terms of e-commerce, businesses are not burdened with this responsibility and are allowed to choose their customers. However, both unequal opportunity and access by some citizens to information and communication technology as well as the unequal acquisition of related skills (digital divide) makes this government duty not only challenging but costly.

Surprisingly structure of the government decision making process is far more dispersed than that of a business (Jorgensen & Cable, 2002). Malaysian government for example comprise of a number ministries, federal and state departments, federal and state statutory bodies among others. They not only have to share scarce resources but every ministry, department, agency and board has independent capacity and authority to set priorities and handle their own budget. This may further hinder the implementation of e-government in terms of consistency of the services offered and quality of service delivery. The last aspect is accountability where in a democratic government; public sector agencies face the constraint of “requirement to allocate resources and provide services in the best interest of the public” (Jorgensen & Cable, 2002).

Belanger and Hiller (2006) on the other hand identified three global constraints that apply to every government decision making process that in turn affect the quality of governments' delivery service generally and the successful implementation of e-government specifically. Those constraints (that did not apply to private organizations) include the law and policy that bound every decision process, availability of technical capabilities to execute their e-government plan and user feasibility; that covers the matter of digital divide.

However, the similarities between e-commerce and e-government are quite apparent. Previous researchers have found that factors from technology acceptance model (PU and PEOU), trust, and risk among others play a role in user acceptance of e-commerce (Chen et al., 2002; Gefen et al., 2003; Pavlou, 2003). It is no surprise then that the same factors also affect adoption of e-government (Carter & Bélanger, 2005; Horst et al., 2006; Teo et al., 2008).

Carter & Bélanger (2005) research which integrated TAM, Diffusion of Innovation and web trusts model again proved that PEOU and trust are significant contributors of an electronic application intention to use, in this case e-government. Perceived usefulness of e-services, risk perception, worry, perceived behavioural control, subjective norm, trust and experience with e-services were the determinants explored by Horst et al., (2006). With the absence of PEOU, this research found that PU of electronic services in general is the main determinant of the intention to use e-government services. Risk

perception, personal experience with e-service and predominantly trust were the determinants of the perceived usefulness of e-government.

Hung et al. (2006) identify the determinants of user acceptance for e-Government services. The critical factors included perceived usefulness, ease of use, perceived risk, trust, compatibility, external influence, interpersonal influence, self-efficacy, and facilitating condition. The results demonstrated that only attitude, subjective norm, and perceived behavior control were explaining e-Government services acceptance.

Government web sites are the representation of the service providers in this distant on-line environment. Recognizing the importance of e-government web sites, Teo et al. (2008) focused on the impact of trust on the success of e-government web sites. Interestingly, trust in government, but not trust in technology, is positively related to trust in government web sites and subsequently lead to the success of those web sites. This again shows the importance of trust as the antecedents that lead to the effective implementation of e-government.

2.4 E-FILING

One of the initiatives of e-government is electronic tax filing system that is often offered by the countries' Inland Revenue agency. A number of literatures in the area of e-government and e-filing were done using Singapore and Taiwan's e-government initiatives as sample. The reason is simple; Singapore and Taiwan ranked second and third among the 198 countries surveyed in the 2008 Global e-Government Study of Brown University, United States. Taiwan even reached top ten ranking in the same survey since 2001.

Factors affecting the adoption of e-Tax-filing system have been examined by Wang (2002) who incorporated perceived credibility variable into the extended TAM model. Computer self-efficacy showed significant effect on behavioral intention through PEOU, PU and the new variable perceived credibility. TAM model has been validated as a model to be used in explaining acceptance of not only of e-commerce but also electronic tax filing system (Chang et al., 2005).

Wariness of the e-filing's security elements and lack of confidence in tax authority's capabilities in handling the system on the other hand are the main inhibitor of tax practitioners not only to adopt e-filing but also promote the system to their clients (Lai et al., 2004).

Fu et al. (2006) meanwhile integrated both TAM and theory of planned behavior (TPB) with perceived risk variable. They went a step further by dividing its population sample according to the method they adopted (manual or electronic filing). Similar to Horst et al. (2006) and Chang et al. (2005), results indicated that taxpayers tend to concentrate on the usefulness of a tax-filing method than other variables. Findings by Fu et al. (2006) found that effects of PEOU, subjective norms, and self-efficacy on behavioral intention were found to be different for manual and electronic tax-filers. The most interesting facet of Fu et al. (2006) findings is that perceived risk does not influence Taiwanese taxpayers' adoption intention of the electronic filing system.

Meanwhile the demographic factors also have an impact on acceptance of e-filing. The level of experience in handling e-filing and education play an important role in influencing the taxpayers' attitude towards adoption of the system (Ilias et al., 2009). Exploring and incorporating those differences into government policy will definitely be effective in enticing new adopters and retaining existing customers.

2.5 THE COMPARISON

The similarities and differences between an electronic service initiative that is provided by a profit oriented organization (e-commerce and e-service) with that of a non-profit organization (e-government) have been listed above. TAM antecedents, (PU and PEOU), trust, perceived risk, subjective norm are among the variables have significant influence on both the acceptance and adoption intention of a particular system.

PU and PEOU are found considerably to be consistent in their effect on adoption intention for e-commerce, e-service and even e-government. However the most glaring findings here are those connected to perceived risk. Pavlou (2003) and Featherman and Pavlou (2003) that predict the consumer acceptance of e-commer and e-service respectively found perceived risk to be a major determinant. However Fu et al. (2006) who was examining the factors affecting adoption intention found perceived risk to be an insignificant factor. This point seemed to further support the need for this research in exploring risk facets effect on e-government adoption intention.