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ELECTRONIC GOVERNMENT SERVICE ACCEPTANCE: THE E-GOV-SAM ASPECT OF THE E-REVENUE SYSTEM

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Abstract

Electronic services are important in government to citizen electronic commerce; however, little is known about electronic government service acceptance model (E-GOV-SAM model). This research aims to develop the determinants of E-GOV-SAM model in the context of e-revenue. The empirical survey results from personal income tax payers show that electronic government service quality has positive impact on building trust and intention to use e-government service. Results indicate that risks adversely affect trust and intention to adopt e-government service. Adoption influence has no impact on building trust but does have an impact on the intention to use.

Keywords: E-government service quality, risk, influence, efficacy, e-revenue, Thailand

Introduction

One of the success cases of e-government service is the Internet tax payment system - so called e-revenue - implemented by the Revenue Department. This system contributes to the enhancement of Internet-based tax payment service usage in Thailand. The major factor that influences users to adopt electronic service is the quality of the system. Electronic service quality has been examined in various models in recent years - for example, E-S-QUAL [10], SITEQUAL [21]. The service quality dimensions of these studies were conceptualized differently and found little unity due to the differing contexts of the studies. Thus, these results provide a fragmented view, and service quality in electronic service remains a relatively new issue requiring more in-depth studies to refine the theory. From the service chain perspective, current studies of electronic service quality do not address all the processes through the service chain. The service chain of electronic services consists of many processes starting from service design, service delivery through the web channel, customer support, and technology support through the whole process of electronic service.

However, the tremendous growth in e-service acceptance, it is often in conflict with perceived risks of adopting the e-revenue system. Some customers have shown unwillingness to complete the service

via the Internet channel, primarily due to risk concerns [3,9]. Trust is one of the major factors related to risk that has an impact on technology acceptance. As a new form of government service, e-government service involves more risk than traditional service. The importance of trust for e-government service providers has to be considered.

Moreover, this research examines these issues in the framework of a modified form of the theory of planned behavior, a widely accepted theory for explaining individual acceptance of new technology by looking at adoption influences, such as subjective norm [1]. Further, usage readiness is one important determinant influencing new technology adoption. This research adapts the determinants of behavioral control, such as self efficacy and facilitating resources, as one construct of e-government service acceptance.

This research develops the electronic government service acceptance model - E-GOV-SAM model in the context of the Internet tax payment system, or e-revenue for personal income tax filing.

Literature review

Parasuraman et al. [10] developed the SERVQUAL model to measure service quality reliability, responsiveness, assurance, empathy, and tangibles. In the context of online commerce, service quality dimensions are different from the traditional service quality for which SERVQUAL was originally developed. Online service quality via the internet channel consists of additional issues besides human interaction, such as human and technology interaction, design and interface of the web page.

With increasing interest in online service quality, current studies of online service quality are wide-ranging, but offer little definitive guidance regarding electronic service quality via the web channel. For example, Yoo and Donthu [20] proposed SITEQUAL with four dimensions: ease of use, aesthetic design, processing speed, and security. Recently, Parasuraman et al. [10] developed measures of online service quality in the context of consumer shopping and the purchase process. They found two categories of online service quality: e-core service and e-recovery service quality. E-core service includes the following four dimensions: efficiency, fulfillment, system availability, and privacy. E-

recovery service has three dimensions: responsiveness, compensation, and contact.

These dimensions of online service quality were developed from a variety of different contexts and research methodologies, and show little commonality of online service quality dimensions. They cannot necessarily be applied to the very different context of electronic government service quality. This study focuses on electronic government service in the context of personal income tax filing and payment, or e-revenue. This is a different sort of service than those such as online retailing, often for products such as books or music, with the associated supply chain in the background. Further, most studies examine e-services in which users are customers, who have a choice about whether they even want to patronize specific companies. Taxes are different – users may choose to pay tax by traditional channels or by e-channels, but they cannot choose not to interact with the government.

To develop the appropriate service quality dimensions for electronic government service, in-depth interviews were conducted with 30 income tax payers [16]. The results showed that electronic government service requires better perceived service quality than many other online services. The interviewees mentioned that the service design and service policy of the e-revenue systems are important, e.g., the service design needs fewer steps to complete the tax filing and payment, must cover all types of tax payment, and should provide motivation to users to adopt. The web design, which presents the service delivery channel, is also important, and must allow users to find relevant information, to link to related data, and should be aesthetic, and easy to use. In addition, technology support which enables the service design and web page to work effectively and handle any online transaction problems are critical factors for electronic service quality. Nevertheless, effective handling of customer problems through electronic service also requires more traditional customer support.

Citizens' acceptance of e-government service adoption depends on not only service quality but also the perceived risk in making their personal income tax payment via the Internet channel. Perceived risk has been an interesting research topic in many fields. In the marketing literature, risk arises from unanticipated and uncertain consequences resulting from using a product or a service, generally causing an unpleasant feeling. In the electronic commerce environment, studies indicate that perceived risk is a main barrier towards adoption [3], and most of the risks are similar to the more general case, slightly adapted to fit the e-context. Featherman and Pavlou [3] found five indicators of electronic service risk: psychological, financial, privacy, performance, and time risk.

Specific to electronic service systems, the two prominent risks having a significant impact on electronic government service adoption are security and reliability of the system [5,11,13,14,15]. This technology performance issue is the customer's perceived risk related to how well the system can perform efficiently [3,12]. In addition, Internet customers also perceive financial risk due to credit card fraud. In relation to this issue, the in-depth interview results indicate that Thai citizens are particularly concerned about the audit and financial risk of using the e-revenue system. The reason is that after a tax payment via the Internet they may be audited and requested for additional financial documents proving the transaction. The Thai government tries to motivate citizens to utilize e-revenue by applying the policy of faster tax refund to income tax payers using the Internet-based system. Many taxpayers do not adopt the electronic service because they have to keep all the income documents for five years in case the Revenue Department requests further audits in the future. They feel uncertainty about the risk of a fair audit and about legal support for their claims when filing tax via the Internet. In addition, e-revenue adoption is linked to privacy risk. This is the possibility that the authorities collect data about taxpayers and may use or disclose it inappropriately.

The qualitative research on e-government adoption did not reveal any worry about incurring social dangers or time-loss risks. This implies that taxpayers normally do not lose time by using the e-revenue website and do not show any behavior that is not accepted by other users. Thus, adoption of e-government services can be inhibited by the following risk issues: performance risk, fair financial audit risk, and privacy risk. If the perceived risk elements can be solved and reduced, citizens may be more likely to adopt an Internet tax payment system. In addition, trust in Internet technology is one of the most important barrier issues that customers reported in prior research [9,13].

Trust has been conceptualized in a variety of definitions. Previous research has viewed trust as general belief that another party can be trusted or a willingness to rely on an exchange partner in whom one has confidence [14]. In addition, many researchers view trust as the specific beliefs dealing with the ability, benevolence, and integrity of another party. Mcknight and Chervany [16] defined four types of trust: disposition to trust, institution-based trust, trusting belief, and trusting intention.

In electronic commerce, the three main attributes that create trust in the service provider are benevolence, integrity and ability of the service provider [18]. Benevolence relates to the perception of the trusting party that the trusted party desires to do good things rather than maximize profit. Integrity

is the trusting party belief that the trusted party will be honest and make an acceptable set of policies. For example, customers do not want their information to be used in an inappropriate manner or misused by others over the Internet. This can be an element of integrity trust. Finally, ability consists of the skills and competencies of the trustees to do what needs to be done successfully, which enables consumer trust in the service providers. The customer's trust is a confident belief in the service provider [14], hence, this research adopts these three trust characteristics to measure trust in electronic government service providers.

Ajzen [1] indicated that the subjective norm has an impact on changing one's behavior. The subjective norm means the individual's perceptions of the social pressures to perform a certain behavior, such as information technology usage [19]. Social pressure creates a normative influence that occurs when one conforms to the expectation of others. Studies that investigated information technology acceptance found that interpersonal influence, such as friends, family, and organization played a major role in adoption [19]. In addition, technology image is one determinant that influences adoption aspects such as preference for self service, and preference to use new technology. Self reliance is one factor that e-revenue tax payers mentioned during the qualitative work. E-revenue tax payers stated that they use e-government services because they want to try and self-volunteer. This is similar to a study by Moore and Benbasat [7], which found that adopters perceive the adoption decision to be non-mandated

Computer self-efficacy means a belief in one's capability to use the computer and is an important factor deciding to use a new technology [2]. In this context, the ability to use the e-revenue system via the Internet channel and knowledge about personal income tax to use the e-government service are the two major internal self-efficacy determinants. The external constraint is related to the availability of computers or Internet resources to facilitate electronic service usage. In other words, access to computers and Internet is an important issue of resource facilitation for citizens to adopt e-government service [19].

Trust is important in electronic service adoption [14]. Electronic service quality is an important antecedent of user adoption. Oliver and Shapiro [8] suggested that service quality is a more specific judgment that can lead to a broad evaluation of the service provider. So and Sculli [17] found that quality in conducting e-business can build trust. On the basis of these findings, the following hypothesis is considered in e-government service context.

H1: The higher the level of e-government service quality, the higher the level of trust in the e-government service provider.

Perceived risk in conducting electronic business has the major role in reducing trust [17]. The next hypothesis for this study is:

H2: The higher the perception of risk, the lower level of trust in the e-government service provider.

In electronic commerce contexts, the influence from media and interpersonal relationships are key determinants considered by the users in accepting service providers and forming intention to use.

H3: The stronger the adoption influence, the higher the level of trust in e-government service provider.

In the context of electronic service (e.g. Internet banking, Internet securities trading, customer trust has an impact on enhancing attitude [18]. Trust is another belief that has positive impact on attitude toward e-government service usage.

H4: The higher the level of trust, the more favorable the attitude toward e-government service usage.

Intention to use can be derived from many factors such as electronic service quality, adoption influence, usage readiness [2,18]. Conversely, perceived risk has negative impact on intention to use. Positive attitude is expected to increase intention to the adoption of electronic commerce [9]. The following hypotheses are:

H5: The higher the level of e-government service quality, the greater the intention to use e-government service.

H6: The higher the level of perceived risk of e-government service, the less the intention to use e-government service.

H7: The stronger the adoption influence, the greater the intention to use e-government service.

H8: The higher the level of usage readiness, the greater the intention to use e-government service.

H9: The more favorable the attitude toward e-government service usage, the greater the intention to use e-government service.

Methodology

The survey questionnaire items are measured by a Likert scale ranging from 1 to 5 (1 = "strongly disagree", 5 = "strongly agree"). Survey respondents were selected by judgment sampling to cover a range of professions, income, and age. In addition to judgment sampling, the snowball sample method was applied in order to increase sample size and extend the range of professions. A total of 1,018 completed survey questionnaires were received.

Results

The results of confirmatory and path analysis in Figure 1 shows the structural parameter estimates and hypotheses testing results. Hypotheses 1, 2, and 3 examined the impact of electronic service quality, perceived risk, and influence on trust in e-government service providers. The results show that e-government service equality has strong positive

direct impact on enhancing trust ($\beta = .755$). The analytical results show that electronic government service can be explained by four determinants: service design quality, website design, technical support, and customer support quality, which affect trust in electronic service government provider, providing support for H₁ (Figure 1).

The risk factor has direct negative impact on trust in electronic government service providers ($\beta = -.197$), thus H₂ is supported.

The results also suggest that the path from privacy risk ($\beta = 0.854$) to trust as well as the path from fair financial audit risk ($\beta = 0.857$) to trust, are highly significant. These findings suggest that both privacy risk and fair financial audit risk are the significant antecedents of reducing trust in electronic government service providers in the context of e-revenue system. Table IV shows that influence has no impact on trust ($\beta = .574$) and H₃ is rejected. Trust has a positive direct impact on creating attitude toward e-government service usage, H₄ is accepted. H₅-H₉ relate to the impact of e-service quality, risk, influence, usage readiness, and attitude on intention to use. E-government service quality has positive impact on intention to use ($\beta = .288$), therefore, H₅ is supported. Additionally, perceived risk has negative effect on intention to use ($\beta = -.130$), so H₆ is supported. Influence has positive impact on intention to use ($\beta = .199$), thus H₇ is supported. Figure 1 shows the second order of three factors of influences: social influence, image, and self-reliance. Usage readiness has direct impact on intention to use ($\beta = .171$), which supports H₈. Resource readiness is a stronger determinant of usage readiness than knowledge readiness. Finally, attitude toward e-government service usage has a strong impact on intention to use, so H₉ is accepted.

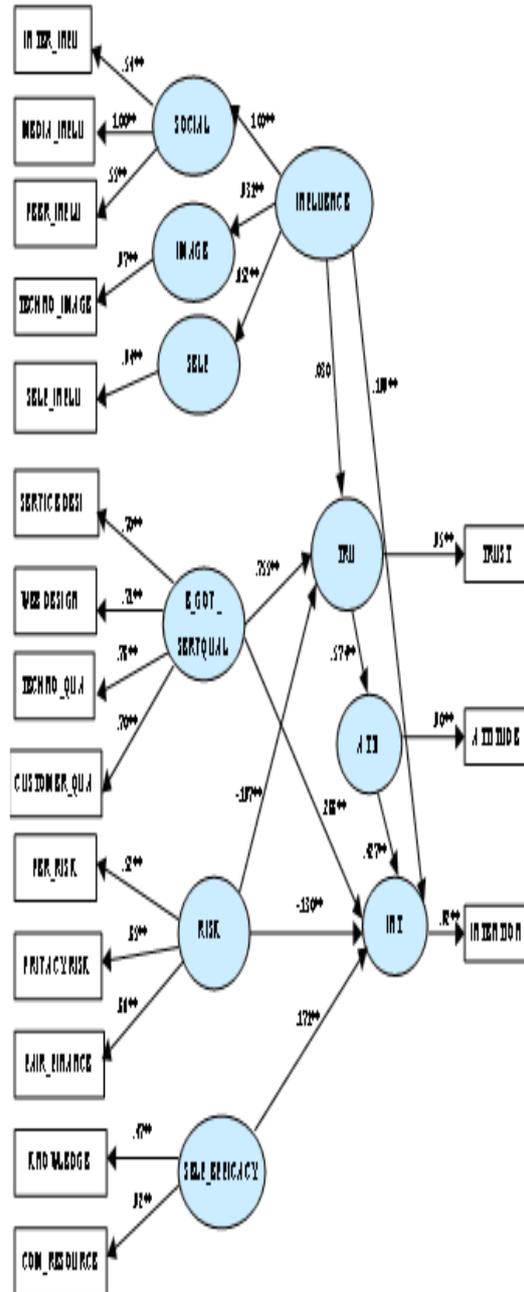
Conclusion

The model presented in this paper provides a comprehensive framework of E-GOV_SAM model and its components. The determinants of e-government service quality are presented in order of importance: technical support, website design, service design, and customer support quality.

Electronic service companies can use this model to assess the whole processes of e-government service quality and allocate their resources to crucial service quality attributes identified by this study. Particularly, these four electronic service qualities constitute a necessity for enhancing electronic service users' acceptance, since these factors have strong associations with trust in electronic service providers and intention to use e-government service.

In addition, perceived risk is an important inhibitor to e-government service acceptance. According to the data, users or potential users recognize three components of perceived risks:

privacy risk, performance risk and fair financial audit risk. The "privacy risk" factor comprised personal data may be used for other purposes, worry about privacy of information, worry about keeping all income documents for 5 years. Performance risk consists of inability to save the transaction, remaining unsure that the transaction has been



$\chi^2 = 31.137$ $df = 27$ $p = .264$ $GFI = .997$ $AGFI = .979$
 $RMR = .013$

Figure 1: E-GOV-SAM aspect of the e-revenue system

submitted successfully, and worry about data being hacked. Fair financial audit risk is related to the risk

of paying additional tax, being audited, and lacking fair legal support when using e-revenue.

To overcome the performance risk of e-service systems, the government agencies must establish high system reliability and capability. In the case of personal income tax payment, too many times the system cannot be accessed during peak periods. It is important to upgrade the system's capacity and security infrastructure, especially for the website. Further, influence has an impact on intention to use e-government service but not as strong as e-government service quality. Social and image influences have the stronger powers in determining this influence than does the self-reliance dimension, although self-reliance is itself fairly strong. Media influence, one component of social influence, may be critical in generating awareness in the early stage of e-government service. Usage readiness shows the least positive impact on intention to use. This research suggests that E-government service providers need to drive better e-government service quality and reduce risk to retain future acceptance of current user and non-user citizens. E-government service providers need to be more market driven in their innovation to respond to perceived citizen needs and wants, rather than technology driven to just implement new technology service delivery to their citizens.

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