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THE EFFECT OF SOCIAL INFLUENCE ON MOBILE GOVERNMT ADOPTION IN MALAYSIA

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ABSTRACT

This study applies the Technology Acceptance Model (TAM) to examine factors such as perceived usefulness (PU) and perceived ease of use (PEOU) on citizen willingness to use mobile government services. This study also enhances TAM model with an additional construct of social influence (SI), Data are collected from Malaysia citizens a total of 750 questionnaires were distributed using purposive sampling method. 551 questionnaires are usable and included in the study with a response rate of 73%. SPSS has been used for data analysis. A structural model was proposed and tested, examining the important factors as well as social influence on the use of mobile government services by Malaysians. The results indicated the appropriateness of fundamental elements of TAM in the Malaysian mobile government context and the importance of SI in users' decision to accept the technology, and it is confirmed that perceived usefulness, Social Influence and perceived ease of use have a strong influence over the behavioural intention to use and actual use of mobile government.

Keywords: *M- Government; TAM Model; Acceptance; Social influence*

1. INTRODUCTION

M-Government stands for use of the mobile wireless communication technology within the government administration and in its delivery of services and information to citizens and business[1]. By connecting a wireless part to a wired end part, the m-Government creates and guarantees mobility and portability for the public, business, and the government. Furthermore, convenience in accessing information, real time access to information, and personalization of information access are guaranteed to maximize benefits of using information and in turn create further advanced e-Government services [2] .

The m-Government implementation is still in its very early stages; Transition from e-Government to m-Government requires researching their integration process. It also calls for investigation of all the factors that affect the transition process. Such pressures differ between nations and include the nation's technological and information infrastructure, mobile device penetration, user acceptance, public and social pressures, and security and privacy [2-5] .

According to Carroll [6] success of the m-Government requires active engagement of both the government and its citizens since providing services by the government is only one side of the m-Government equation. Another, and more challenging aspect, is achieving acceptance and widespread persistent use of the m-Government by citizens. The acceptance of m-Government services can be achieved with a proper design and implementation. Services should be delivered in ways with which the public is already familiar and/ or in which users are actively engaged. In addition, the mobile phone is a perfect device for rapid and brief interaction. Hence, content should be short, targeted and relevant to specific users. Another significant parameter that should be taken into account while designing m-Government services is security. Applications that require security must make minimal demands on the user.

The mobile and wireless communications are expected to play a central role in all aspects of the lives of Malaysian citizens. The technology will substantially expand on the current concept of "anywhere, at anytime" to a new paradigm:

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"Transform administrative process and service delivery through the use of information communication technology and multimedia to improve the quality of Malaysians' life by making the services available anywhere at any time and facilitate access to government content and information in a more efficient and convenient way" [8]. This statement entails that the starting point of the design of future systems and services be; Consideration of a person's basic needs and interests. The basic needs and interests involve comfort and welfare of one's personal, family, professional and private life. The technology should be all about improving the quality of life in terms of creating wealth; improving education; improving job skills; enhancing health, security and safety; and stipulating appropriate entertainment at the right time with appropriate content in a secure and reliable way [7].

There is a growing body of academic research which examined adoption of technology among users but very few focused on social behaviors of citizens to adopt mobile government services. A number of theoretical models are available that attempt to explain the relationship of user's attitudes and beliefs for technology use. These models include the theory of reasoned action (TRA), the theory of planned behavior (TPB), and the technology acceptance model (TAM). Among these, TAM is considered to be the most widely accepted model because of its parsimony and the wealth of recent empirical support but it lacks to address the social factors in technology adoption process. TAM posits that perceived usefulness (PU) and perceived ease of use (PEOU) of Information Technology (IT) are major determinants of its usage. Due to complex nature of technology adoption process, there is a need to observe more determinants of IT usage grounded on the principle of social influence (SI). The objective of this paper is to measure the effect of SI in citizen's acceptance mobile government services in the context of Malaysia.

A. Objectives of the study

The objectives of this study are:

- To assess citizen acceptance and use of their mobile device for get service from e-government services.
- To identify the essential factors that help in enhanced use of Mobile government services.
- To assess the social influence on acceptance and use Mobile government services in Malaysia.

2. THE M-GOVERNMENT INITIATIVE IN MALAYSIA

In 2007, the government of Malaysia launched a new initiative under the electronic government (e-Government) program known as eKL. It is an effort of integrating services delivery across agencies in an effective and efficient manner for the benefit of citizens and businesses within the Klang Valley area and its vicinity.

The eKL initiative focused on the "One government, many agencies" principle to establish a digitally connected Klang Valley whereby services of all government agencies are linked. This joint-up approach enables the sharing of resources and information among government agencies and thus facilitates the provision of end-to-end interactive online services 24 hours a day and 365 days a year (24/365) via multiple services channels. One of these channels is the mobile device. The short messaging system (SMS) mobile technology enables citizens on the move to stay connected to government news and services. It is a new channel for citizens to access government services. Within this context, the MySMS initiative was launched. It aims at standardizing the use of a single number, 15888, for accessing government news and services like renewal of driving licenses and summon(s) to a payment. By 2010, there will be 158 additional SMS services of 50 agencies including payment services offered by mySMS [8].

3. TECHNOLOGY ACCEPTANCE MODEL

TAM was proposed by Davis (1989) and it introduced two important concepts – perceived usefulness (PU) and perceived ease of use (PEOU). The PU refers to "the degree to which an individual believes that using a particular system would enhance his/her job performance". The PEOU refers to "the degree to which an individual believes that using a particular system would be free of physical and mental efforts". In TAM, an individual's belief determines the attitude towards using the system and, in turn, the attitude help develop the intention to use. TAM is an adaptation of the Theory of Reasoned Action (TRA) which

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was developed by [9]. Comparatively, TRA is more generic whereas TAM is more specific. TAM was chosen in this study for two main reasons. First, TAM is based on its predictive power which makes it easy to apply in different information system devices [10-14]. Second, TAM helps to better understand the relationship between six important constructs of the study, notably, perceived usefulness, perceived ease of use, social influence, behavioral intention and actual use.

Many researchers have investigated and agreed that 'perceived usefulness' and 'perceived ease of use' are valid constructs in understanding an individual's intention to adopt Information System (IS) [10, 12, 15] .However, depending on the specific technology context, additional constructs are required to better reflect the application of emerging technologies[16].

The original TAM has been criticised by several authors for disregarding the impact of 'social influence' on adoption and diffusion of technological innovations [17-19] investigated the effect of social influences (SI) and found that the latter plays a vital role in determining the acceptance and usage behaviour of new adopters of technological innovations. In the UTAUT model, SI was recognised as being one of the four determinants of BI to use. SI may be divided into external and interpersonal. The first includes mass media reports, expert opinions, and other non-personal information, while the other includes word-of-mouth from friends, colleagues, and superiors. This study makes reference to 'SI as interpersonal influence. We define SI in our research as the "degree to which an individual believed that others thought they should use mobile government services".

BI is defined as "the strength of the prospective user's intention to make or to support the adoption of e-Government innovation". BI to accept a new technology is an important indicator of the ultimate adoption decision and is hypothesised to be determined by attitude towards adopting the technology. It is being predicted that behavioural intention will have a positive influence on usage behaviour. A user's stated preference to use the M-Government service will be closely related to the fact that they actually use the system; this assumption only applies when the behaviour is under a person's volitional control [9, 20]. Therefore it is claimed that user's intention to use the system will be closely related to their usage behaviour if the use of the technology depends on their free will. Also, much previous research [17, 21-25] found that BI and usage intention have a significant relationship (see figure 1).

4. RESEARCH METHODOLOGY

In this research, the sampling technique used is known as purposive sampling. In purposive sampling, the researchers sample with a purpose in mind. The researchers have one specific predefined group wanted [26]. For instance, the randomly selected respondent must fit in the age group and preferably are familiar with mobile services. Purposive sampling is appropriate because it involves the choice of subjects who are in the best position to provide the information required [27]. Although it may restrict the generalisation of the findings, it is the only viable sampling method to obtain information from a specific group of people [29]. Survey is conducted in Selangor state in Malaysia. The questionnaire was developed in English and Malaya, The questionnaire was tested and validated by the students in National University Malaysia (UKM).

A. Subjects

A total of 566 citizens responded to the questionnaire survey and 15 were rejected due to incomplete data. The data from 551 respondents were analyzed using SPSS.

The size of the sample on TAM studies is depending on the type of research in our case this study is exploration study. [28] Identified TAM studies from 25 up to 2.500 respondents. In this study the sample size it sufficient to explore the citizen perspective.

The demographic distribution shows that 45.2 percent of the respondents were male and the remaining 54.8 percent were female. With respect to age, most of the respondents (67.4 percent) were between 18 to 34 years. This age group has potential to become users of mobile government because of its familiarity with the latest mobile technologies[29-31]. With regards to educational attainment, 3.4 percent had primary and 16.7 had secondary education, 36.1 percent were diploma

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holders, 40.7 percent had degrees and above (Table 1).

B. Measurement

The questionnaire was adapted from earlier studies [10-12, 14, 17, 32]. One of the advantages in using the TAM was that it had a well-validated measurement inventory [12,15] .While the measures of perceived usefulness were adapted from the study of[17] ,those of perceived ease of use were adapted from the two studies of [11, 17] .and the measures of social influence were adapted from [33-35] .

5. FINDINGS

A. Reliability Testing and correlation

Cronbach's alpha (Alpha = .885) exceeding the recommended value of 0.50 [36, 37]. These values show good internal consistency among scales used for the study.

B. Validity of the Measurement Model

Perceived usefulness was found to have a significant effect on behavioral intention; these outcomes are consistent with previous studies of [12, 25, 38, 39]. Hence, when mobile government is shown to be useful, Malaysian citizens intention to adopt it will be greater than otherwise.

The result also shows a direct relationship between perceived ease of use and behavioral intention. These outcomes are consistent with previous studies [10, 12, 13, 15, 40]. Thus, the greater the perceived ease of use, the more likely that mobile government will be adopted by Malaysian citizens.

'Social Influence' was found to have a significant effect on behavioral intention to use mobile government services also SI have significant effect on PU and PEOU mobile government services that mean SI have significant effect in users' decision to accept the technology. The original TAM was criticised for ignoring 'social influence' in the adoption and diffusion of technological innovations [17, 18]. The construct was used in many other studies [19, 41] [35] (among which the UTAUT) where its influence on adoption was supported. In the present study, it can be determined that the importance of what others believe and think of this m-Government service is of special interest (see figure 2).

Overall, the results indicated the appropriateness of fundamental elements of TAM in the Malaysian mobile government context and the importance of SI in users' decision to accept the technology . Consequently, hypotheses for H1, H2, H3, H4, H5, H6 and H7are supported (see table 2), and it is confirmed that perceived usefulness, Social Influence and perceived ease of use have a strong influence over the behavioural intention to use and actual use of mobile government.

6. CONCLUSION AND FUTURE STUDY

Most of the respondents in this study are youngsters (aged between 18 and 34) also they have high level of education. The study can be replicated in other age groups and different education level, particularly the middle-age users. They may have difference of opinion. It can also be replicated in other countries using the same model and instrument to identify factors that encourage and discourage the adoption of mobile government in those countries.

Thus, the present study aims to obtain insights into the factors that can influence the adoption of mobile government services among citizens in Malaysia. It is hoped that the results of this study will extend current knowledge on technology acceptance in mobile government, in particular. Furthermore, the study may provide deeper insights into what is needed in order for Malaysian citizens to accept this emerging technology and, thus, allow for improvement in government strategies to attract potential users of mobile government.

The results indicated the appropriateness of fundamental elements of TAM in the Malaysian mobile government context and the importance of SI in users' decision to accept the technology, and it is confirmed that perceived usefulness, Social Influence and perceived ease of use have a strong influence over the behavioural intention to use and actual use of mobile government.

One of the limitations of this study is sample and its responses may not be a representation of the beliefs and intention of Malaysians towards using mobile government. Future research can improve on this limitation by increasing the sample size and performing future research across different cities in Malaysia.

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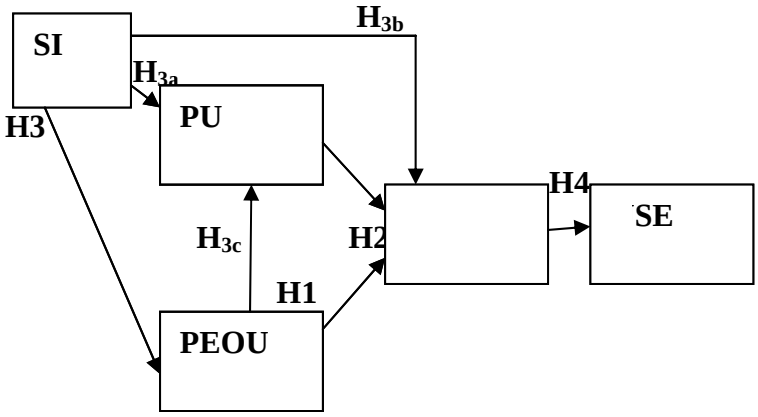

Figure 1: Extend TAM Model (Dived, 1989)

TABLE 1: DEMOGRAPHICS DATA

Attributes	Demographic Distribution	
	Frequency	Percentile
Gender		
Male	249	45.2
Female	302	54.8
Age		
under 18	51	9.3
18-24	223	40.5
25-34	148	26.9
35-49	101	18.3
50-65	28	5.1
Education level		
Primary school	19	3.4
secondary school	92	16.7
Diploma	199	36.1
Degree and above	224	40.7
Other	17	3.1

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TABLE 2: HYPOTHESES TESTING

Dependent	Independent	Standardized Coefficients Beta	t	Sig.
USE	BI	.201	4.801	.000
BI	SI	.193	4.624	.000
	PEOU	.319	7.478	.000
	PU	.085	2.049	.041
PU	PEOU	.223	5.221	.000
	SI	.090	2.095	.037
PEOU	SI	.269	6.539	.000

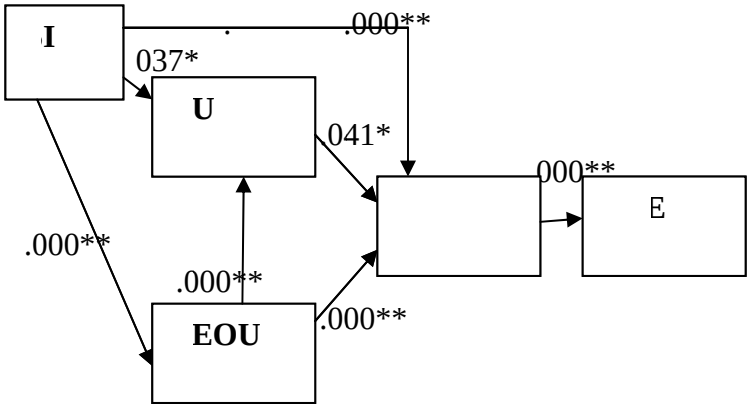

FIGURE 2: MODEL RESULT