INTENTION TO USE M-GOVERNMENT SERVICES AMONG CONSUMERS IN PUTRAJAYA

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Abstract

The primary aim of this study is to identify the relationship between selected factors and the intention to use m-government services among consumers. The study employs the Pearson correlation analysis to test the Technology Acceptance Model (TAM) by incorporating the factors of perceived usefulness, perceived ease of use and perceived trustworthiness. The research is based upon a self-administrated questionnaire survey of 200 consumers in Putrajaya.. The outcome revealed a significant and positive relationship between perceived usefulness, perceived ease of use and perceived trustworthiness with the intention to use m-government services. The findings of this study should enable m-government service providers to better understand the factors that can attract the consumers' intention to use m-government services. This can be done by enhancing the ease of use and usefulness of the services.

Keywords: M-government services; Intention to use; Consumers

Abstrak

Tujuan utama kajian ini adalah untuk mengenal pasti hubungan antara faktor-faktor terpilih dengan niat untuk menggunakan perkhidmatan m-kerajaan dalam kalangan pengguna. Kajian ini menggunakan analisa korelasi Pearson untuk menguji Model Penerimaan Teknologi (TAM) dengan menggabungkan faktor-faktor tanggapan kebergunaan, tanggapan kemudahgunaan dan tanggapan kepercayaan. Pengumpulan data adalah melalui borang soal selidik yang dikawal selia sendiri melibatkan seramai 200 orang responden di Putrajaya. Hasil kajian menunjukkan terdapat hubungan yang positif dan signifikan antara tanggapan kebergunaan, tanggapan kemudahgunaan dan tanggapan kepercayaan dengan niat untuk menggunakan perkhidmatan m-kerajaan. Penemuan kajian ini membolehkan pembekal perkhidmatan m-kerajaan memahami dengan lebih baik faktor-faktor yang boleh menarik minat pengguna untuk menggunakan perkhidmatan m-kerajaan. Ini boleh dilakukan dengan meningkatkan kebergunaan dan kemudahgunaan dalam perkhidmatan yang disediakan.

Katakunci: Perkhidmatan m-kerajaan; Pengguna; Niat untuk menggunakan

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Introduction

M-government or mobile government services is one of the government's initiatives for consumers to provide quick and easy access to its services at anytime and anywhere (Farshid & Kushchu, 2004). Consumers will be able to file a complaint, check information, access information or get an advisory service from listed government agencies that provide m-government services. M-government service development can be greatly benefited from the recent advancements of the network infrastructure and mobile computing techniques (Al-Hujran, 2012). According to the Malaysian Communications and Multimedia Commission (2018), the percentage of Internet users at national level increased from 76.9 percent in 2016 to 87.4 percent in 2018 while smartphone remained as the most common device used to access Internet with 93.1 percent users used smartphone to go online. The high percentage of Internet users is an opportunity for the government to promote the m-government services for the consumers.

In the recent years, many developed countries around the world are offering m-government services to enhance interactions with the public, taking advantage of an advanced, stable, and well-developed wireless infrastructure that has been installed by governmental and private mobile operators (Al-Hujran, 2012). In Malaysia, m-government services are known as myGov Mobile. Through myGov Mobile, there are three different types of m-government services that the government has developed i.e. Short Message Service (mySMS), Unstructured Supplementary Service Data (myUSSD) and also a mobile payment (myPay) (myGovMobile, n.d.).

MySMS (15888) provides consumers with appropriate information depending on consumers' requests via SMS. Examples of this service are to check summons (Kuala Lumpur City Hall, n.d.) and examination results (Ministry of Education, 2019). MyUSSD is a service offered by the government which is to enhance the government services through an alternative channel, via the USSD technology (myGovMobile, n.d.). According to the myGovMobile portal (n.d.), internet connection is not required to access myUSSD. So, by just dialling the short code of ***158#** and press CALL, one can start using myUSSD services (myGovMobile, n.d.). The application will respond with a menu, offering a list of services by the said agency. For example, checking on application status of MyKAD or "semakan MyKAD" offered by National Registration Department (National Registration Department, n.d.) and checking education loan repayment status or "JPA pinjaman" offered by the Public Service Department (Public Service Department, n.d.).

MyPay or mobile payment service is a tool developed by the Malaysian government to facilitate electronic payment services made through mobile apps (MyGovernment portal, n.d.). This service helps to increase the efficiency of public service delivery where the public can just make online payments in a convenient and effective way

without going to the physical counter. There are a few agencies that offer myPay mobile app services such as the Federal Territory Zakat Collection Centre (myZakat), Melaka Historical City Council (myMBMB), Subang Jaya Municipal Council (myMPSJ), Kuala Lumpur City Hall (myDBKL), National Institute of Occupational Safety & Health (myNIOSH) and also National Higher Education Fund Corporation (myPTPTN) (MyGovernment portal, n.d.).

According to the statistics on MAMPU online portal (2018), there were ten listed agencies that recorded the lowest up to the highest usage from July 2008 until 14 December 2018. The statistics showed that the Road Transport Department (JPJ) has the lowest usage of services with only 1,488,853 number of users, followed by mySMS (1,770,130 users), Malaysian Examination Syndicate with 2,429,764 of users, Ministry of Education with 2,990,446 of users, Malaysian Examination Council with 3,481,084 of users, National Registration Department with 3,548,940 of users, Election Commission of Malaysia with 6,794,528 of users, National Service Training Program with 7,481,300 of users and the highest usage of the services was Traffic Police Contingent with 17,574,630 number of users. The statistics show that although the mobile phone has a higher penetration rate but there was still lower amount of usage in m-government services by consumers. Since there is still a low penetration rate of usage despite convenience offered by this service, it is interesting to gauge the opinion of the public on their intention to engage in M-government services. Hence, the overarching objective of this paper is to investigate the relationship between factors influencing the intention to use m-government services among consumers.

Literature Review

Over the years, government agencies have been offering services to its citizens using manual systems that were characterized by inefficiency, time-consuming and often prune to errors (Mansoor & Rohan, 2010). Government service level rarely met the set standards, thus lowering the confidence of consumer towards government services (Mansoor & Rohan, 2010). Consumers used to travel for long distances in order to access the service centres. Thus, mobile technologies developments created a new avenue of m-government, which brings government services closer to the people. The mobile government services enable the sharing of services with ease and improve the sharing of information among agencies through online services 24 hours a day (Antoviski & Gusev, 2004).

Consumers' intention to adopt certain technologies such as m-government can be measured using the Technology Acceptance Model (TAM). TAM presented how users come to accept and use new technology (Davis, 1989). The theory suggests that the consumers' intention to use technology is determined by his or her perceived usefulness and perceived ease of use. Mahad (2015) stated that TAM model towards

intention to use m-government services will be of practical use to decision makers because it will enable them to better understand the challenges they face in the implementation of m-government.

Perceived usefulness means that a person believes that using a particular system or technology will improve his or her action (Venkatesh & Davis, 2000). In m-government services, this action refers to the usefulness of consumers' interaction with the mobile services of the intended organization and the benefits they achieve through this interaction. Consumers' approach towards intention to use m-government services will increase if people perceive the service to be easy to use (Gajendra *et al*., 2012). Perceived usefulness will influence their intention to accept and adopt a system (Bhatti, 2007; Kim *et al*., 2007). Horton *et al*. (2001) believe that perceived usefulness positively influences the intention to use m-government services. Byun and Finnie (2011) identified perceived usefulness and perceived ease of use of m-government services as the most important measures of consumers' intention to use m-government services. A number of studies also have shown that perceived usefulness is the primary predictor of mobile service usage (Davis, 1989; Davis *et al*., 1989; Gefen *et al*., 2003; Venkatesh *et al*., 2003).

Perceived ease of use denotes that a person believes using the particular system or technology is not complicated (Venkatesh *et al.,* 2003). This variable is used to measure the extent to which a person assumes that using the new information system will be free of effort (Venkatesh & Bala, 2008). Perceived ease of use is an effective variable in consumers' intention to use m-government services (Al-Busaidi, 2012). Based on the previous studies on factors influencing the adoption of m-government services shows that perceived ease of use has a significant effect on usage intention (Davis, 1989; Venkatesh *et al*., 2003; Venkatesh & Davis, 2000).

In addition to perceived usefulness and perceived ease of use, the literature has highlighted other important variables to be integrated into TAM. One of them is perceived trustworthiness. Belanger *et al*. (2002) defined perceived trustworthiness as 'the perception of confidence in the electronic marketer's reliability and integrity'. Since m-government is based on mobile services which is an open network, security is an important factor in the functions of m-government services. Consumers must have self-assurance in both the government and the related technologies. Despite various technical advancements such as message encoding and digital signatures and certificates, customers are still concerned about the security of their transactions while using mobile services. Information provided in a m-government website may be abused by hackers (Behjati *et al*., 2012). Trust in m-government services plays a vital role in helping consumers overcome risks which in turn has a significant impact on use intentions. Previous studies identified the lack of trust as a major barrier to intention to use m-government services (Carter & Weerakkody, 2008).

Methodology

This is a quantitative study as it is measurable and quantifiable by using numerical data for the purpose of data analysis gathered through questionnaire survey (Zikmund, Babin, Carr, & Griffin, 2010). The questionnaire was adopted and adapted based on established past studies such as Davis, (1989); DeLone & McLone, (1992); Wang & Liao, (2008); Al-Kamayseh *et al*., (2006); Lee & Rao, (2005). The questionnaire have five sections; Part A consists of respondents' socio-demographic background, Part B consists of questions designed for perceived usefulness, Part C consists of questions designed for perceived ease of use, Part D consists of questions with regard to perceived trustworthiness and Part E consists of questions designed for intention to use m-government services. The items were formulated as Likert scale statements anchored by a five-point scale, ranging from 1 ''strongly disagree" to 5 ''strongly agree". Likert scale are used to assess perceptions and they have the advantage of yielding continuous data that lends itself to many statistical analyses (Rashid, 2014). The completed questionnaire was pre-tested among 30 consumers which has resulted in a Cronbach alpha value that exceeded .700 which passed the recommended value by Nunnally (1978).

The research was conducted at government agencies in Putrajaya. Putrajaya is the federal administrative of Malaysia that accommodate a majority of the ministries and government agencies. Five government agencies were randomly selected for this study. They are the Ministry of Domestic Trade and Consumer Affairs (KPDNHEP), National Registration Department (JPN), Royal Malaysia Police (PDRM), National Higher Education Fund Corporation (PTPTN) and Road Transport Department (JPJ). These agencies were selected based on the myGov Mobile Annual Report (2013) from Malaysian Administrative Modernisation and Management Planning Unit (MAMPU) website. The report contained various services offered by the government and the number of consumers using the respective services.

The target respondents of this study were consumers in Putrajaya. Putrajaya has a high average growth rate with the current population of 103,000 (Department of Statistics, 2019). The targeted sample of this study was calculated using online Raosoft sample size calculator. According to Raosoft (2014), a confidence level 90 percent, margin of error 5 percent and a response of 50 percent yields a sample size of 200. The minimum number of participants required was 150. However, where time and resources allow, a study should take as big a sample as possible since this would ensure reliability of the results (Rashid, 2014). Hence, this study targeted a sample size of 200. Therefore, 200 self-administered questionnaires were distributed to the consumers with different ethnicity at each of five selected agencies that use and provide the m-government services.

Results and Discussion

Respondents' background

Table 1 depicts the socio-demographic data of the respondents studied. The demographic distribution of the respondents shows that majority of the respondents were female (59.5%), Malay (42.0%) and aged between 30-39 years (41.0%). In addition, a majority of respondents are university graduates with Bachelor and Masters degrees (72.0%). Moreover, most of the respondents have experience of using m-government services less than one-year (42.5%) while only 11.5 percent of the respondents have never used m-government services.

Table 1: Demographic Profile of Respondents (n=200)

Variables	Frequency (n)	Percentage (%)
Gender		
Male	81	40.5
Female	119	59.5
Age		
<30	35	17.5
30-39	82	41.0
40-49	63	31.5
50-59	11	5.5
60 >	9	4.5
Ethnicity		
Malay	84	42.0
Chinese	55	27.5
Indian	61	30.5
Qualification		
High School	8	4.0
Diploma	23	11.5
Bachelor	71	35.5
Master	73	36.5
Others	25	12.5
Experience		
Never use m-government services	23	11.5
Less than one year	85	42.5
More than one year/less than three years	37	18.5
Three years or more	55	27.5

Descriptive findings of factors that influence intention to use m-government services

Table 2 lists the descriptive findings on factors that influence the intention to use m-government services among consumers in Putrajaya. Consumers' intention to use m-

government recorded the highest mean score with 4.36. The second highest score was recorded by consumers' perceived ease of use with M=4.25, followed by consumers' perceived usefulness with M=4.15. The lowest mean score was recorded by consumers' perceived trustworthiness, with a mean score of 3.09. The findings show that the respondents have a high intention to use m-government services while the factors being relied the most are ease of use and usefulness of the services.

Table 2: Means score of the variables

Variable	Mean score	SD
Consumers' perceived usefulness	4.15	0.666
Consumers' perceived ease of use	4.25	0.433
Consumers' perceived trustworthiness	3.09	0.454
Consumers' intention to use m-government	4.36	0.630

Relationship between intention to use m-government services and selected factors

The main objective of this study was to inspect if there were any relationship between the intention to use m-government services with selected factors. To achieve this, Pearson Product Moment correlation was employed. The data shown in Table 3 indicates that all the three independent variables, namely, perceived usefulness, perceived ease of use and perceived trustworthiness have significant relationships with intention to use m-government services. Based on the data obtained, it can be seen that perceived usefulness (r=0.716) and perceived trustworthiness (r=0.555) have strong and positive relationships with intention to use m-government services while perceived ease of use has a low and positive relationship with intention to use m-government services.

The results of this study are important to articulate that consumers believe that using the technology in m-government services are useful in achieving better service performance. Previous studies have consistently identified perceived usefulness as a major contributor towards intention of using m-government services (Abbas & Hamdy, 2015; Byun & Finnie, 2011; Bhatti, 2007; Kim *et al*., 2007). One of the reasons consumers use m-government is that they find the system useful to their transactions and saves their time (Al-Rowili *et al.,* 2015). The outcome of this study is also consistent with Al-Rowili *et al.* (2015), with their findings that perceived trustworthiness had a direct positive effect on users' intention to use m-government services in Saudi Arabia. The literature also showed that when trust in the internet and government increases, the intention to use m-government services also increases (Carter & Belanger, 2005). Finally, this study has also determined that perceived ease of use has a positive but low relationship with intention to use m-government services. A study conducted by Luthfihadi and Dhewanto (2013) confirms

that perceived ease of use was not a strong factor for measuring the intention to use new systems. Nevertheless, according to Al-Busaidi (2012), it is still a valuable factor in consumers' intention to use m-government services.

Table 3: Pearson Correlations Analysis Results

Variable	R	p
Perceived usefulness	0.716	0.000
Perceived ease of use	0.343	0.000
Perceived trustworthiness	0.555	0.000

Conclusion

M-government services provide access to a wide range of government information and services via mobile devices. Such services seek to reduce administrative problems by delivering integrated services from a single point. Descriptive analysis of this study shows that consumers in Putrajaya have a high intention to use the m-government services. Further analysis confirms that all three factors, namely perceived usefulness, perceived ease of use and perceived trustworthiness have positive and significant relationships with the intention to use m-government services. The outcome of this study should enable the m-government service providers to better understand the factors that can influence the intention to use m-government services. The service providers need to enhance m-government services based on the ease of use and usefulness of the services. Information and service quality might also be improved, especially for data actuality and protection. Increasing consumers' confidence and trust would, in turn, increase consumers' intention to use m-government services.

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