

Government to Citizen: Advocacy of Government On-line Systems and Their Acceptance among Citizens

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ABSTRACT

Government on-line systems under the e-service project were launched in 2000. The ongoing objectives are to improve internal government office efficiency as service delivery to its citizens. Since its launch ten years ago, the use of this service by the citizens has been relatively low, especially on the transaction side. Mostly, citizens use e-services merely to check their Road Transport Department (JPJ) and Royal Police Malaysia (PDRM) traffic summonses, to take their driving tests, to check their electrical and telephone bills and to check compound and tax issues with the Kuala Lumpur City Hall (DBKL). Citizens' use of the e-service, mainly to do routine checking more than to conduct transactions, could subsequently influence further expansion of e-service. These issues lead to form the objectives of the study: firstly, to examine the factors that influence the use of government's e-service, and secondly, to measure the strength of influence among the variables. The results reveal that the crucial factors that influence the intentions and behavior of citizens in accepting government's e-services are "attitude" and perceived "behavioral control," while subjective "norm" is not as evident.

Keywords: e-government; e-service; theory of planned behavior; advocacy; social change; technology acceptance

Introduction

The Malaysian government, particularly through its Modernization and Manpower Planning Unit (MAMPU), has introduced several innovations in the public sector's delivery system. Every renewal, improvement and modernization effort that is undertaken is aimed at providing a high quality public service in accordance with current needs and the ongoing modernization of contemporary society. Among the innovations is the electronic service delivery system which is replacing the counter system. This innovation has been in place for ten years with electronic transaction services available since 2000.

Within a decade of implementing this innovation, electronic government services should have been widely used by the citizens. The widespread and continuous use of this service

will be the yardstick to measure the effectiveness of e-government policies and whether e-service is used by the society to get efficient service, or is left unused leading to waste. Whenever innovative service is used through e-government, a lot of time, effort and cost can be saved either from the users and the government. Time can be saved when an application process can be shortened from several days to several hours. Energy is also saved when all transactions can be done at the same time and same place without having to go to the counter. Personnel costs can be reduced when the staff in charge of the counter can be diverted to more useful tasks. Consumers, on the other hand, can save on petrol costs, tolls and charges for car parks in order to go to government counters. All these can be of benefit, provided e-government is used consistently. Before looking further into the acceptance of this innovation among the people, especially those in the Klang Valley, it is appropriate to look first at what the government has done to encourage people to make use of on-line service delivery systems. Initiatives have been taken by the government, along with private sectors and NGOs, to bridge digital divide, in order to benefit all citizens through on-line delivery systems and other information and communication technology initiatives (Salman, 2010).

Advocacy of On-line Delivery System

Advocacy of on-line delivery system and factors of public acceptance of this system will be identified based on the Ajzen's (1991) theory of planned behavior. According to Ajzen, individuals are aware of the implications of their actions before they decide to engage or not to engage in them. Thus, each action by individuals has a reason and is under control of their conscious will. The main goal of this theory is to predict and understand individual behavior. For that, it is necessary to determine what shapes a particular behavior. This is because individual behavior is under the control of the will, therefore intention is seen as a major factor in the implementation of a behavior.

Ajzen (1991) introduced three main variables as determinants of intention leading to actual behavior of a person. They are attitude, subjective norms and behavioral control.

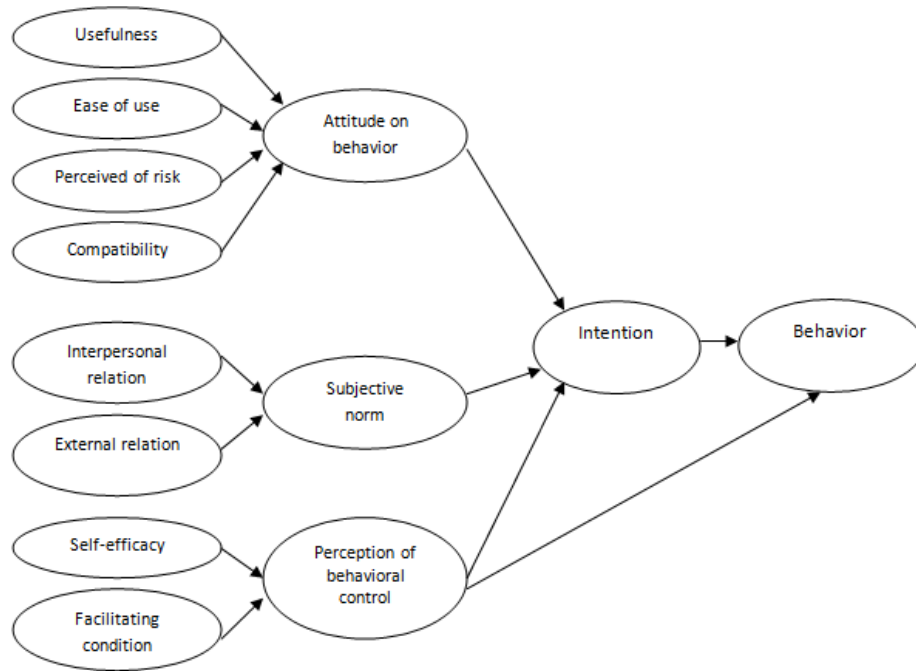
Attitude consists of either positive or negative feelings about performing a particular action. It is a person's assessment of a of whether the contemplated action is either good or bad or whether the person would like to perform the action or not.

Subjective norms are the perception by someone that most people have about whether they should or should not perform a particular action because of how that action might be perceived by others. This involves issues of social pressure which may come from interpersonal relationships with others such as parents, a spouse, friends or neighbours or externally, through the mass media, NGOs or government agencies.

Behavioral control is the individual perception on whether it is easy or difficult to perform a particular behavior, and depends on self-efficacy and the environment which may or may not encourage taking a particular action. If this control factor is missing, then the behavior is unlikely even though the person may have the inclination and the intention to do so. The theory of planned behavior is, then, "decomposed" by Taylor &

Todd (1995) and becomes a model of a decomposed theory of planned behavior. Each factor in the theory of planned behavior is decomposed into several sub factors. For this reason, the decomposed theory of planned behavior is the main catalyst (scaffold) for the theory of planned behavior. However, the discussion in this paper is only focused on the theory of planned behavior. In the decomposed the theory of planned behavior, the sub factors that influence attitude are usefulness, ease of use, perceived of risk and compatibility. Meanwhile, the factors that influence subjective norms are interpersonal influence and external influence, and factors that influence behavioral control are self-efficacy and facilitating conditions. Relationships among these factors are shown in Figure 1.

Figure 1: Relationships of Variables in a Model of
Decomposed Theory of Planned Behavior



Source: Adapted from Taylor, S. & P. A. Todd. (1995). "Understanding Information Technology Usage: A Test of Competing Models." *Information Systems Research*, 6(2): 144-176.

All these programs were disseminated through subjective norms via interpersonal and external influences. These include mass media and one to one communication. When the facilities and knowledge has been developed and awareness has been created, it is easier for the government to form a positive attitude among citizens to accept innovation. But

the question is, how far these innovation was truly accepted and used by the citizens? Research shows that the acceptance of innovation in Klang Valley who has excellence IT infrastructure, still not benefited by the citizens in using on-line delivery system (Khairul & Fazlina, 2005; Azizan et.al, 2005). This scenario might be worst in rural area where internet facilities are still limited.

E-Service as a Government On-line Delivery System

E-service is an internet-based activity aimed at providing government services electronically. The definition of e-services provided by MAMPU (1997, 2007), the federal agency responsible for the performance of flagship application of e-government) refers more to the level of transaction between the government and the people (G2C). Thus e-service, according to MAMPU, only covers transaction services. Among them are services related to traffic matters (such as checking and payment of JPJ and PDRM summonses, scheduling and taking JPJ computerized theory tests), utilities (electricity and telephone bill checking and payment (TNB and Telekom), tax and compounds (checking and payment of taxes and compounds of DBKL) and insolvency (individual and companies bankruptcy revisions).

All these services can be accessed through various electronic channels such as kiosks, interactive voice response, mobile phones, Internet services through web TV and personal computers. Other services such as electronic labor exchange, e-syariah, e-land, e-judiciary and public service portal are not included in the e-service project but in various other flagships under e-government, though they have the characteristics of G2C. This is because all of these services do not involve financial transactions such as online or any matters involving JPJ, PDRM, DBKL, and national utility companies. In terms of statistics, a total of 2.3 million transactions were conducted through e-service project since it was launched until the year 2006 (MAMPU, 2007). Statistical distributions by type of service under the e-service until 31 December 2006 are displayed in Table 1.

Table 1: e-Service Transactions by Type of Services

Type of Services	Number of Transactions (until 31 December 2006)
Checking of JPJ* summons	454,750
Taking the computerized theory test	822,889
Issuance of licenses to LDL*	234,884
PDRM summons payment transactions	16,290
Checking of bankruptcy	631,389
Checking of liquidation	67,842
Checking of DBKL* compound	86,329
Checking of DBKL* taxes	3,593
TOTAL	2,317,966

Sources: MAMPU 2007

*JPJ – Jabatan Pengangkutan Jalan (Road Transport Department)

*LDL – Learner Drivers' License

*DBKL – Dewan Bandaraya Kuala Lumpur (Kuala Lumpur City Hall)

Acceptance of Government On-line System (e-Service)

Table 2 states the number of transactions in terms of review and payment of PDRM summons. If we look at the statistics, the use of the manual method was found to be much higher among the people than the use of electronic method. Usage statistics in Table 3 shows the same result. There are two levels of use: checking and payment. On average, the respondents use e-service to check more than to pay. If seen in the actual transaction activity such as paying summons, renewing driving license, paying for vehicle licenses, paying compound and taxes, paying premises and billboard licenses and paying utility bills, the statistics are not encouraging. The people's use of e-service transactions people is low. Therefore, we must ask: What is it that actually influences this low level of use?

Table 2: The Number of Checking and Payment Transactions of PDRM* Summons (Counter and e-Service)

Years	e-Service		Counters
	Checking (bill)	Payment (bill)	Payment (bill)
2002	1,579,932	4,752	4,473,351
2003	1,380,340	13,967	2,276,701
2004	1,725,453	252,350	2,753,862
2005	3,698,071	81,945	3,744,611
2006	3,017,344	16,977	2,582,430
2007	394,072	2,394	622,450
Total	11,795,211	372,385	16,453,405

*PDRM – Polis Diraja Malaysia (Royal Police Malaysia). Sources: Polis Di Raja Malaysia 2007

Methodology

A sample of 232 respondents from the main areas of the Klang Valley (Kajang, Bangi, Puchong, Shah Alam, Sungai Buloh, Selayang and Klang) identified the factors that motivated them to accept e-government innovation. Ajzen’s three factors, namely attitude, subjective norms and behavioral control were hypothesized as influencing intention. Intention and behavioral control also directly affected individual behavior to use government service innovation. Research hypotheses are displayed in Table 3.

Findings

Among the respondents, 95.7 % knew about e-service, but only 60 % of respondents had experience using it. So, the acceptance of e-services in Malaysia especially in the Klang Valley is only at a modest or average level. The factors that influence respondents’ awareness of e-service are the media, especially electronic media, which is 81.9 %, followed by print media, 71.1 %. Table 4 shows the two levels of e-services usage, checking and payment. The majority of respondents use e-services to check JPJ (80.2%) and PDRM (75%) summons. Those who pay the JPJ and PDRM summons were 34.9% and 33.2% respectively. Similarly, in other agencies, matters involving payment or transaction is lower and includes learner driving licenses (18.1%), renewal of driving license (22%), payment of DBKL compound (12.1%) and payment of DBKL taxes (13.4%) .

Table 3: Research Hypothesis

	Hypotheses	Supporting Research
H1	Attitude → Intention	Ajzen (1991, 2001); Taylor & Todd (1995); Liao et.al (1999); Chau & Hu (2001); Hung et.al (2006)
H2	Subjective Norms → Intention	Ajzen (1991, 2001); Taylor & Todd (1995); Liao et.al (1999); Pierre-Gagnon et.al (2003); al-Gahtani et.al (2007)
H3	Behavioral Control → Intention	Mathieson (1991); Taylor & Todd (1995); Liao et.al (1999); Chau & Hu (2001); Lin (2007)
H4	Behavioral Control → Usage Behavior	Ajzen (1991); Taylor & Todd (1995); Tsuen et.al (2006)

*PDRM – Polis Diraja Malaysia (Royal Police Malaysia). Sources: Polis Di Raja Malaysia 2007

Table 4: Scattering of e-Services Usage

Services	Level	Percentage (N=232)
JPJ summons	Checking	80.2
	Payment	34.9
PDRM summons	Checking	75.0
	Payment	33.2
Computerized theoretical test	Checking	32.3
	Payment	25.9
Learner driving license	Taking	18.1
Renewal driving license	Taking	22.0
Electric bills	Checking	39.2
	Payment	53.9
Telephone bills	Checking	41.4
	Payment	47.4
DBKL compounds	Checking	17.2
	Payment	12.1
DBKL taxes	Checking	13.8
	Payment	13.4
Individual bankruptcy	Checking	14.2
Company bankruptcy	Checking	10.8

Table 5 shows that four of the five hypotheses are confirmed, while one is rejected. H2 is rejected showing that subjective norms do not significantly affect the intention to use e-services. This may be because the respondents use e-services voluntarily and have used them more than once, and thereby subjective norms no longer influences them. Subjective norms do not have a relationship with intention when something is done voluntarily, but there is a significant relationship when it is compelled (Hartwick & Barki, 1994; Venkatesh & Davis, 2000). Subjective norms are not always associated with intention even in the mandatory context. The influence of subjective norms on intentions is only important in the early stages of personal experience with technology, and it is not significant in the context of continuous use (Venkatesh & Davis, 2000).

Table 5: Summary of Hypotheses Verification

Hypothesis	Hypotheses Direction	Path Co-efficient	Verification
H1: Attitude → Intention	+	0.71**	Accepted
H2: Subjective Norms → Intention	-	0.02	Rejected
H3: Behavioral Control → Intention	+	0.26**	Accepted
H4: Behavioral Control → Actual Behavior	+	0.67**	Accepted
H5: Intention → Actual Behavior	-	0.38**	Accepted

** Significant at level $p < 0.01$ (two tailed)

→ Shows influence on

Table 5 also indicates the influence of factors described in the theory of planned behavior on acceptance of e-service. Data were analyzed using multiple regression analysis. The results of the analysis reveal that attitude predicts more on the intention to accept e-service, which is 71% as compared to the factor of behavioral control, which is 26%. This shows that attitude plays a major role in influencing the intention of someone to accept something. Attitude is the feeling whereby we either like or do not like a particular innovation. Such a feeling of like or dislike depends on the consumer's perceptions of whether they feel a particular innovation is beneficial and easy of use (Hung & Chang, 2004; Hsu et.al, 2006; Lin, 2007), compatible with lifestyle (Taylor & Todd, 1995; Mathieson, 1991), trustworthiness (Pierre-Gagnon et.al, 2003; Ing & Chen, 2005) and does not pose a risk (Gefen et.al, 2003, Stone & Gronhaug, 1993). When the government and the system designers can put emphasis on attitude, then this could lead to more widespread use in society. Then, the government can reduce the use of staff at the counter and minimize the weaknesses which people tend to have such as lack of punctuality, unfriendly service, and misunderstanding in communication.

Meanwhile, behavioral control factor predicts the intention of use by 26%. Behavioral control is the individual perception of the person's ability to performing an action. It depends, in part, on the resources (computers, internet access) and opportunity (time, ability to use the internet). This means that if someone is showing a positive attitude towards an innovation, but has no control over on resources and opportunities, then this will hinder the individual from accepting or using the innovation. It is therefore no wonder why the behavioral control factor is the main determinant of actual behavior compare to factor of intention. Behavioral control factors predict 67% of the actual use of e-service than intention which is only 38%.

Because of the importance of behavioral control factors on the actual use of e-services, the government should give more attention to this factor, particularly by improving the IT literacy in society and providing sufficient IT infrastructure. To improve people's ability to use e-service or use any form of electronic government services, they should be equipped with the appropriate knowledge and skills. Government policies should focus on IT literacy programs to encourage the people to have control over knowledge and the ability to use IT. Some programs related to IT literacy have been implemented by government programs such as one house-one computer program, the provision of tele-centers in rural areas to provide central computing facilities, teachers, tax relief on the purchase of computers and broadband subscription fees, exposure of school children to ICT and the Internet in teaching and learning. Together, these initiatives make up a policy of encouraging people to familiarize themselves with ICT, and to enhance self-efficacy.

The government also needs to improve ICT facilities and infrastructure capacity, particularly the Internet by reducing the cost of internet subscription and the cost of ICT equipment, safety and privacy of users. In 2010, after ten years of e-service implementation, government policies are seen as committed to the development of ICT. The success of the commitment is reflected in the fact that, according to the Brookings Institution, Malaysia was ranked 11th in 2009, compared to 25th place in 2007 in terms of e-government at the global level (*Malay Mail*). Among the policies that improved the environment for encouraging the use of ICT was the distribution of one million netbook computers to needy students across the country. The government also accelerated the implementation of high-speed broadband (HSBB) projects at a total cost of RM11.3 billion.

The intention factor has predicted the actual use of e-service by 38%. Although the relationship was significant, the direction is negative (see H5 in Table 6). This means the higher the intention to use e-services, the lower the consumption behavior toward the innovation and vice versa. This means that intention does not necessarily provide a positive influence on the actual consumption behavior. This also answers the question of why the use of e-services is still low after ten years of introducing the innovation. The result is parallel to statistical data published by the government agencies and a consortium company which provided this service as well as results from previous research. The awareness of this innovation is high, but the usage is still low. The citizens are aware and admit that this innovation is effective and productive, and they were also have an intention to use the innovation, but it has not resulted in action. This is probably due to the problem of facilitating conditions especially for those who have use for the systems. Such a problem is system-obstructed and slow. However, this issue needs further study to determine why the direction of such correlation is negative.

Conclusion

Empirical studies have been conducted to examine the extent of acceptance or use of innovation services which are offered by the government through the e-service. From the result, although the study regarding the acceptance was done in Klang Valley which has the most extensive and fast-growing Internet coverage area in Malaysia, the use of e-

service is still low. These results are consistent with the statistical data released by the PDRM and the MAMPU concerning the use of these technologies throughout Malaysia. The factors that are identified as determining this rate of usage are attitude, behavioral control and intention. Causality among variables that determine the use of e-services is also observed. The result is that the use of e-service can be explained by attitude, behavior control and intention. However, subjective norms were not significant in explaining the intention or the actual behavior.

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