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Behavioural Intention to use E-government Services in Malaysia: Extended TAM Model to Examine the Effect of Perceived Security

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Abstract

Public citizens' intention is an important factor in determining the successful implementation of e-Government services. Therefore, this study aims to examine potential factors that lead to the intention to use e-Government services in Malaysia. The targeted population of the study are public citizen in Malaysia ages 18 years old above. Data was gathered between April 2022 and August 2022. A total of 336 people were participated in the study. However, only 323 numbers of survey were valid to be used. Thus, a minimum sample size of 180 required by the study are achieved. Smart-PLS was used for hypothesis testing. The result confirmed that perceived usefulness and perceived ease of use positively influence intention to use e-Government services. Meanwhile, perceived security negatively significant influence intention to use e-Government services. The findings of this study may help researchers better understand the relationships between behavioural intention aspects that should be taken into account in order to provide a basis for future, in-depth research on this topic and assure the success of e-Government services in Malaysia. It could stimulate additional research into e-Government services, and perhaps this could serve as a source of inspiration for future studies in response to the change toward developing e-Government websites and apps as well as other technology that is in line with IR. 4.0.

***Keywords**: e-Government; TAM Model; Perceived Security; Intention*

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INTRODUCTION

In today's globalized world, information and communication technology (ICT) facilitates daily affairs, especially in government services. E-Government has been recognized as a medium to revive the government business to a much more efficient system to enhance the economy. Since it was introduced by Prime Minister of Malaysia, Tun Dr Mahathir Mohamad (1981-2003) in August 1996 planned under Multimedia Super Corridor (MSC), e-Government has been part of the strategy to deliver information to public citizens more effectively and interactively. There are Seven Flagship applications were identified as the pioneering MSC project such as e-Government, Telehealth, Multi- purposes Card, Smart School, R&D Cluster, Technopreneurs Development and e- Business (Huff, 2002).

The vision is to improve the efficacy and efficiency of the public sector in order to attain service excellence through the use of technology, multimedia, and ICT. The fundamental goal of implementing this e-Government system is to update and improve the efficacy and efficiency of Malaysia's administrative machinery, as well as to serve as a catalyst for MSC development. The implementation of e-Government in Malaysia started with the initiation establishment of MSC (Shafie, 2007). The e-Government flagship basically aims to create a virtually paperless administration with a primary

objective of shifting towards widespread use of electronic and multimedia networks in the government sector.

E-Government is becoming a medium of delivering services to citizens, businesses, or other agencies through digital mediums. Most services are preferred to be conducted through ICT as it is seen as the convenient way to facilitate the affairs of all parties. It enables people to access information and conduct any business related to the government system including submission, financial transactions, complaints, and others. E- government is viewed as a tool for transforming government into a far more efficient mechanism for economic growth (Abidin, 2006). It is also expected to assist the government to conduct business activities by using the efficient system to enhance the contribution of stakeholders, facilitate the public to access information channelled by the government as well as foster good relations between them. With that, Malaysia seems can minimize corruption, enhance accountability across all transactions, scarce commodities, and save expenses for using this technology (Hughes, 2003).

Even though e-Government services have been introduced and implemented, the impact is not fully experienced by the citizens (Shareef et al., 2011). The transformation of e-Government services made by the government is mostly not taking consideration of citizen's needs, especially in terms of developing e-Government services which should persuade citizens to use e-Government services (Ibrahim Mofleh & Wanous, 2008). The success of an e-Government initiative should be determined by its use, and it is measured by its adoption and acceptance (Xie et al., 2017). The government is likely just providing the services of what they should provide instead of fulfilling citizen's requirements and needs. Although previous studies on e-Government service adoption have been extensive, most of them are focusing on the technical and management factors point of view (Danila & Abdullah, 2014), known as the supply side of an e-Government instead of examining the demand which is behavioural intention to use e-Government services as a daily basis. However, there are paucity of research that look at the factors that influence public behavioural intention to use e-Government services.

The impact of technical complexity and e-Government services towards behavioural intention to use a new technology should be the focus of any study (Al-Shafi & Weerakkody, 2009). Despite this, e-Government is still in its infancy, and more research is needed to discover the factors that influence behavioural intention to use e-government services in Malaysia (Eze et al., 2011). Thus, the study aims to achieve the following objective :

> To examine the influence of perceived usefulness, perceived ease of use and perceived security toward intention to use the e- Government services.

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LITERATURE REVIEW

Underpinning Model

The Technology Acceptance Model (TAM) was designed by Fred Davis to describe how consumers come to embrace and use technology (Davis et al., 1989). Davis' TAM model's major components are "perceived usefulness" (the degree to which a person feels that utilising a certain system will improve his or her work performance) and "perceived ease of use" (the degree to which a person believes that using a particular system would be free from effort). The use of TAM has been supported in research studies (Davis et al., 1989; Fishbein et al., 1977). The model emphasizes the relationship between the cause and effects of system design, demonstrating usefulness, ease of use, behavioural intention to use, and actual system use. These concepts indicate users' subjective perceptions of a system, which may or may not reflect actual reality. Users' acceptance of a system will decrease if they do not believe it to be beneficial and simple to use. The purpose of this approach is to give insights into the factors of behavioural intention of computer technology especially in e-Government services. Furthermore, via theoretical justification, this model is capable of explaining user behaviour across varied demographics and standard area for utilising e-Government services.

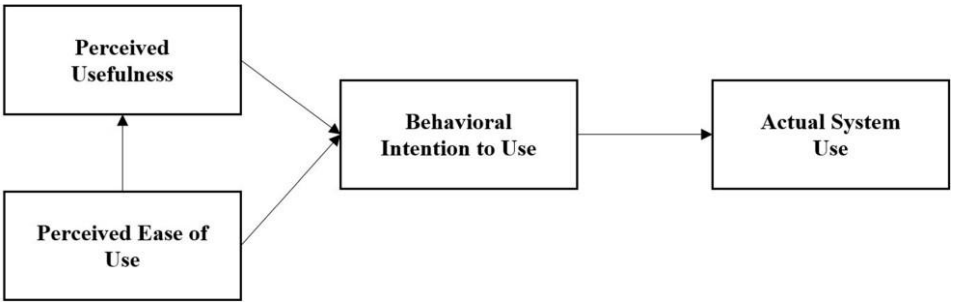

Figure 1: *Technology Acceptance Model*
Sources: (Davis et al., 1989)

TAM is a model based on a theory that examines how people learn to adopt and use certain technologies (Suki & Ramayah, 2010). When consumers are presented with a new software system, for example, the approach says that a number of variables affect their judgments about how and when to utilise it. TAM was used as a theoretical foundation for defining the actual relationships between the two major qualities (perceived usefulness and perceived ease of use) and users' thoughts, intentions, and actual computer behavioural intention. TAM is solely designed to be applicable to computer behaviour intention. However, it is easily adapted to apply to any sort of technology, and therefore it might be used to examine user acceptability of e-Government. This research was carried out to determine public interest in e-government

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services. Technology Acceptance Model (TAM) will be used for this research as this theory is related the public acceptance of technology model (Almaiah & Nasereddin, 2020). TAM is technology-specific, whereas Theory of Reasoned Action (TRA) is general to consumer behaviour. TAM is mostly used at the individual level (but can also be used in organisational settings), whereas UTAUT is only used at the organisational level.

e-Government

According to Ooh et al. (2009), e-Government is a project aimed at reinventing how the government works and improving the quality of interactions with residents and companies through greater connection, better access, high-quality services, and enhanced procedures and systems. Malaysia launched electronic government (e-Government) on February 24, 2004. The vision of e-Government is to employ IT and multimedia to change administrative processes and service delivery. Rather of having separate websites for each service supplied, the Malaysian government has established a website that consolidates all services given under one roof or portal. E-Government has been identified as a means of reviving government business and enhancing the economy through a far more efficient approach. e-Government has been a component of the effort to provide more effective and interactive information to citizens. Through the use of technology, multimedia, and ICT, the objective is to increase the efficacy and efficiency of the public sector in order to achieve service excellence. Most services are handled via ICT since it is viewed as the most convenient approach to consolidate all parties' businesses. It allows customers to obtain information and do any government-related activities, such as submissions, financial transactions, and complaints, among other things.

E-Government is a project aimed at redesigning how the government works and improving the quality of engagement with citizens and organizations through increased connection, better access, high-quality services, and better procedures and systems. Malaysia launched electronic government (e-Government) on February 24, 2004. The vision of e-Government is to utilize IT and multimedia to change administrative processes and service delivery. Rather of having separate websites for each service supplied, the Malaysian government has established a website that consolidates all services given under one roof or portal. Aspects of e-Government offers such as information quality and service interaction quality have also been considered as e-Government offering evaluation criteria (Prybutok et al., 2008).

Behavioural Intention

Behavioural intention refers to the degree to which an individual has devised purposeful approaches to do or refrain from performing a certain upcoming activity (Fishbein et al., 1977). A person's visible reaction in a specific situation as for a given objective can be defined as behavioural intention or social goal. That behaviour is a

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component of perfect expectations and perspective of social control in the sense that apparent social control is depended upon to direct the influence of goal on conduct, with the ultimate goal being that a great result only delivers the behaviour when social control is significant (Fishbein et al., 1977).

People's behavioural intentions to use innovations which in this research is e-Government services would be influenced by their attitude toward adoption, which would be shaped by the ease and usefulness of data frameworks. People's behavioural intentions are influenced by their connected attitude toward the behaviour and the regulating factors that they encounter, according to action. Peer pressure, effort expectations, and performance expectations all influenced these students' behavioural intentions, according to prior research (Amin, Saad & Lajis, 2022). Individual's Behavioural Intention is directly affected by the standardising norm or abstract standard, since people may be influenced by others to use technology (Camilleri, 2019). This variable was chosen for this study to assess an individual's willingness or behavioural intention to use e-Government services on their own.

However, the impact of 'social influence' on individuals' behavioural intention to use was shown to be minimal. Furthermore, the 'website quality' component was discovered to have a beneficial influence on e-Government service 'performance expectation' (Almaiah & Nasereddin, 2020).

Perceived Usefulness

Perceived usefulness refers to the extent to which a person believes that using a particular system will be painless (Bertagnolli, 2011). According to Davis et al. (1989), the degree to which a person feels that implementing a specific system would improve their job performance is measured by PU. Moon and Kim (2001) discovered that perceived usefulness (representing response efficacy evaluation) predicted internet usage intentions for a work- related activity, highlighting the need of a preventative mindset that emphasises tasks and obligations.

Moreover, Kumar et al. (2007) suggested that perceived usefulness for a certain system would improve organizational productivity. They also defined perceived usefulness as the benefit of the system to the user. The impression of the value of the government's online information or services by users might greatly enhance the adoption rate. However, perceived usefulness is related to perceived ease of use, which refers to how simple it is for people to obtain, browse, and consume information .

IT was characterised as a beneficial tool for governments to alter public services. They assumed IT could complete the work more quickly, saving money and time while also completing the operation more efficiently (Pardhasaradhi & Ahmed, 2007). If someone is satisfied when they use a certain system and discover that their work

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performance has increased to some amount, this suggests that this system has a higher effect of usefulness, and their perspective will shift in a positive manner (Robey, 1979).

According to Suh and Han (2002), when a user completely comprehends the usefulness of an online service, his confidence is significantly boosted. The public will only use the online services if it is beneficial to them. Material on the government's website should be informative, and that the services provided should be beneficial to the public citizen. AlAwadhi and Morris (2009), prove that public citizens will be more likely to use e-Government services if they see how useful they are. Some government websites continue to have issues with government information content, such as slow information update speed, blank areas in the construction of some information resource databases, and service supply that does not meet people's true needs (Almaiah & Nasereddin, 2020). Instead, user will not intended to use the e-Government services if they find the web portal is not informative and useful. Therefore, the following hypothesis is propose :

H1: Perceived usefulness significantly influence intention to use e-Government services.

Perceived Ease of Use

Perceived ease of use is an application that is perceived to be more user-friendly than another is more likely to be granted by everyone. The degree to which a user believes that utilising a given technology will be simple and not complex. With excitement, perceived ease of use (indicating self-efficacy) predicted plans for an infotainment important aspect, prompting a specific behaviour (Moon & Kim, 2001).

In previous studies, ease of use has a favourable factors associate with the desire to utilise e-Government services (Lean et al., 2009). If there is no instruction from the government to educate users or a handbook on how to use the service online, it will be difficult for the public to utilise the government web portal (Eze et al., 2011). Besides Venkatesh et al. (2011), discovered that perceived ease of use have a significant positive effect on intention to utilise e-Government services in the future.

The degree to which a person feels that utilising a specific system will be simple is known as perceived ease of use (Davis et al., 1989). Perceived ease of use also refers to the amount to which a person believes that using a specific system would improve his work performance (Bertagnolli, 2011). Perceived ease of use (representing self-efficacy) predicted intentions for an infotainment integral part with enthusiasm, activating a specific behaviour (Moon & Kim, 2001).

Previous study found that perceived ease of use and perceived usefulness have a favourable impact on the intention to utilise e-Government (Schaupp & Carter, 2005). Many previous studies have concluded that perceived ease of use has a significant

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influence on IT consumer reception and usage behaviour (Venkatesh et al., 2011). According to the previous model, perceived ease of use increases an end user's belief in one's capacity to undertake the behaviour intention, which influences the adoption (Ramayah et al., 2018).

E-Government websites should also improve their search and help capabilities so that users can discover important information quickly and easily. If users of e-government services perceive the system as less complex and structural assurance as helpful, there is a better chance that the system will be accepted and widely used because the system will be perceived as convenient, easy to use, and free of mental or physical effort (Borazon & Nguyen, 2022). Government organisations can improve perceived ease of use by making online service uptake as easy and natural as feasible. To foster citizen adoption, online services should be similar to traditional government services (Carter & Bélanger, 2005). Furthermore, decision-makers were informed that the use of E-Government services was governed by enabling conditions and behavioural intents, and that these services had to be beneficial to the intended users (Amin, Saad & Lajis, 2022). Therefore, the following hypothesis is propose :

H2: Perceived ease of use significantly influence intention to use e-Government services.

Perceived Security

Public citizens are typically concerned about the security of online services, particularly their personal data. Without first addressing citizens' trust in using such services, the potential benefits of social media-based e-government services cannot be carved out (Khan et. al, 2022). According to States and West (2008), most website owners are concerned about security and privacy statements. The difficulty of protecting individual security and privacy can be important barrier to e-Government implementation that influence them nonchalant towards their safety. The issue of network information security appears to be especially pressing (Ke & Wu. 2022). Moreover, public citizens are deeply concerned with the privacy of their life and confidentially of the personal data they provide as part of obtaining e-Government services. Thus, they pointed out the portal security and privacy.

The term security refers to the safeguarding of all information and systems against illegal access, alterations, or destruction (Godwin J. Udo, 2001). Government information system security focused on the secrecy of electronically stored records (Smith & Jamieson, 2006). Privacy and security are reoccurring issues in e-commerce and e-Government research (Belanger et al., 2002; Chadwick, 2001; Miyazaki & Fernandez, 2001).

In terms of security, it refers to the safeguarding of records and data that are kept

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for the purpose of recording, managing, and monitoring government acts and policies. Security has been identified as one of the most significant barriers in several research (Stibbe, 2005). The fast expansion in the volume of data kept electronically and the use of e-Government services may raise the need for security to preserve data privacy and prevent fraud.

Many concerns in e-Government need deeper study, such as security concerns (Lambrinoudakis et al., 2003). This category includes a wide range of issues related to network crime and security risks, such as hacker attacks, viruses, unlawful identity masquerades, and computer forgeries. Furthermore, there is a lack of relevant law in the field of information technology (Hwang et al., 2004).

Information security is critical in limiting the security risks and threats to e-Government services. Security increases the quality of services provided and extends across whole organisations (Karokola, 2012). Hence, the public's lack of trust in online information technology (IT) is related not just to the security aspects, but also to trust in the information provided from the e-Government services. Concerns about security and privacy are the most common reasons why people do not perform online transactions especially in e-Government services (Godwin, 2001).

Government should also deliver services that are accurate, timely, and secure. If citizens have a safe experience with an e-Government service, they are more inclined to use it (and similar services) again. Furthermore, they will most likely share their favourable experience with others, so increasing adoption to use the services (Carter & Bélanger, 2005). According to the GAO-reported Hart–Teeter national survey, Americans stated that e-Government has the potential to improve the way government performs, but they have "concerns about disclosing personal database with other organization over the internet, afraid that the data will be misused and their privacy diminished." (Gao, 2001).

The protecting of records and data held for the purpose of recording, administering, and monitoring government activities and policies is referred to as security. Several studies have highlighted security as one of the most significant barriers (Stibbe, 2005). The government must decide between the benefits of data concentration and the costs associated with a decrease in data security (Ke & Wu. 2022). Therefore, the following hypothesis is propose :

H3: Perceived security significantly influence intention to use e-Government services.

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Research Framework

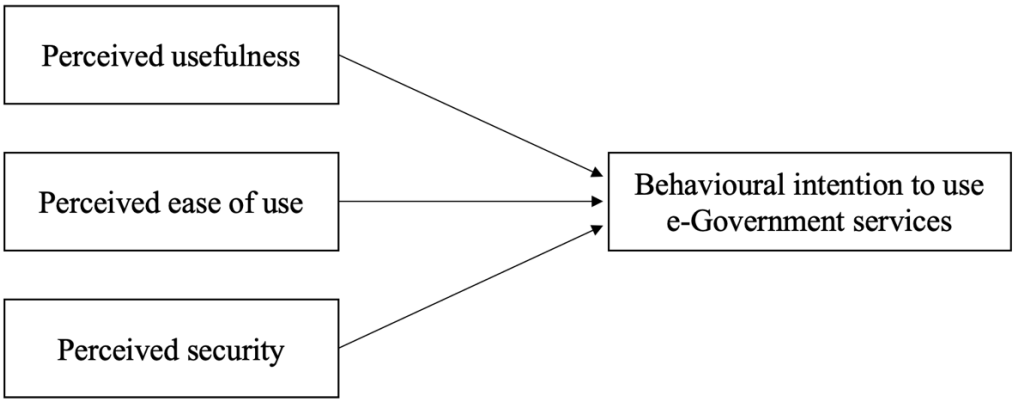

Figure 2: *Research Framework*

METHODOLOGY

The quantitative research method are used in this study which relies on the primary data from an online questionnaire. This study applied correlational study through cross-sectional setting. In this research, the unit of analysis are individual. The study was conducted in Malaysia.

Due to concern regard to the pandemic Covid-19, the survey was conducted online through google form and was disseminated through various of social media platform. Indeed, as the area of study related with technology, online questionnaire fit the context of study. The targeted respondents of the study are Malaysian consumer age 18 years old and above.

The non-probability sampling was used in this study through convenience sampling. The important reasons decision to use non-probability sampling are because inaccessible ssampling frame from authorize resources. Apart from that, to determine the minimal sample size required for the study, the guideline proposed by (Hair et al., 2017), which are for each 1 items of survey, 10 numbers of respondent are needed. thus, as the study instrument comprises of 18 items, a minimum of 180 respondents are required. pilot study was conducted earlier before final data collection involved 30 respondents. the reliability of the pilot study are all score 0.60 and above which indicates an acceptable level of contruct reliability.

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DATA ANALYSIS

Data was gathered between April 2022 and August 2022. A total of 336 people were participated in the study. However, only 323 numbers of respondents were valid to be used. Thus, a minimum sample size of 180 required by the study are achieved. The data was subjected to numerous crucial preparations. Data screening and cleansing were performed. It is crucial to confirm that only information from respondents who were specifically targeted and filtered based on demographic factors was gathered. To ensure there was no data mistake, descriptive statistics were performed using maximum and minimum frequency analysis.

The Likert scale for each item varied from "strongly agree" to "strongly disagree." Before conducting any analyses, the data was completely cleaned. Smart PLS 3.0 and SPSS version 23 were used to complete all analyses on the data set. A multicollinearity analysis was performed to determine whether the variation of parameter estimations was exaggerated through the variance inflation factor (VIF). All of VIF values were below 10 where it can be concluded that no common elements were present.

Demographic Profile

Based on the analysis, 59.6% (n=168) of the respondents were female while 40.4% (n=114) were male. Besides that, respondents in this study were mainly 31-40 years old (42.9%), followed by 26-30 years old (25.5%), 41-50 years old (16.0%), 18-25 years old (22%), and 51-60 years old and 61 years old and above represented 21% and 1% of the sample respectively. Most of the respondents were Malay (85.1%), followed by Indian (9.6%), Chinese (4.3%) and others (0.4%).

For marital status, 53.5% were married, followed by Single and others were 46.1% and 0.4% respectively.For education level, 50.0% of the respondents had Degree, followed by Diploma at 30%. The respondents' education level at Master or PhD were at 15.2% with remaining of the sample indicating SPM levels. Most of the respondents were from administration or managerial field at 45.4%, followed by Executive or Professional at 29.1%, Self-employed at 12.8% and Unemployed at 2.1%.

Reliability Analysis and Convergent Validity

The composite reliability of the constructs scored more than 0.70 suggesting good reliability. The average variance extracted (AVE) of all constructs scored more than 0.50. Thus, convergent validity is achieved (Hair et al., 2017) as shown in Table 2.

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Table 2: *Reliability and AVE Scores of the Measurement Model*

Construct	Composite Reliability	Average Variance Extracted (AVE)
Behavioural intention	0.891	0.623
Perceived usefulness	0.819	0.531
Perceived ease of use	0.882	0.555
Perceived security	0.777	0.538

Discriminant Validity

The purpose of discriminant validity is to guarantee that a construct measure isn't just a mirror image of another construct. It examines the square root of the estimated average variance extracted (AVE) for all constructs. The Fornell-Larcker criterion analysis assessed the discriminant validity of the constructs by requiring that the square root of AVE in each latent variable be greater than other correlation values among the latent variables (Hair et al., 2017). Discriminant validity is established after this criterion is met. Table 3 displays the Fornell-Larcker criterion findings.

Table 3: *Fornell-Larcker Criterion for Checking Discriminant Validity*

Construct	BI	PEOU	PUS	PSE
Behavioural intention (BI)	0.729			
Perceived ease of use (PEOU)	0.459	0.745		
Perceived usefulness (PUS)	0.611	0.527	0.733	
Perceived Security (PSE)	**0.187**	**0.468**	**0.344**	**0.789**

Hypothesis Testing

The path analysis conducted was based on 500 bootstraps subsamples (refer to figure 3). The bootstrapping procedure was executed as the PLS was non-parametric which does not assume a normally distributed data set (Ramayah et al., 2018). The significance level of 0.05 showed a statistically significant relationship of the path. Besides, a *t*-value of more than 1.96 (two-tailed test) and 1.645 (one-tailed test) also indicated a statistically significant relationship as stated by (Hair et al., 2017).

Based on the analysis conducted as shown in Table 4.6, perceived usefulness was found to be statistically significant with task performance (β = 0.525, t = 8.945, p = 0.000). When perceived usefulness increased by 1 standard deviation, behavioural intention increased by 0.525. Therefore, H1 was supported.

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In addition, H2 was supported as the analysis indicated a statistically significant relationship between perceived ease of use and behavioural intention (β = 0.230, t = 3.570, p = 0.000). When perceived ease of use increased by 1 standard deviation, behavioural intention increased by 0.230.

Lastly, H3 was also supported whereby the analysis indicated a statistically significant relationship between security and behavioural intention (β = -0.101, t = 2.041, p = 0.042). When security decreased by 1 standard deviation, behavioural intention also decreased by -0.101.

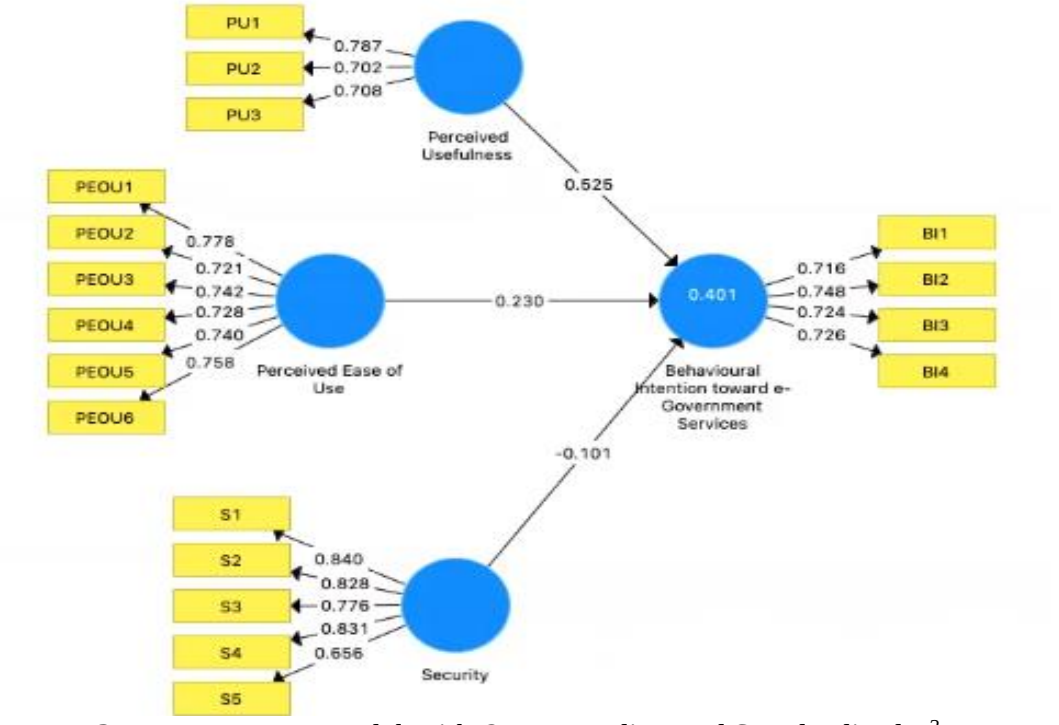

Figure 3: *Measurement Model With Outer Loading and Standardised R^2*

Table 4: *Summary of Direct Path Coefficient*

H		Path Coefficient (β)	Standard Deviation	t-values	p-values
1	PUS > BI	0.230	0.064	3.570	0.000
2	PEOU > BI	0.525	0.059	8.945	0.000
3	PSE > BI	-0.101	0.050	2.041	0.042

Note: t-value>1.96 = significant (2-tailed)

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Coefficient of Determination R^2

The coefficient of determination *(R^2)* was identified to describe the number of variances that can be explained by the research model (Hair et al., 2017). The R^2 value of task performance, which is 0.401, indicated that the model can explain only 40.1% of the variance; meanwhile, another 59.9% of the variance is explained by other factors not tested in this study. Therefore, the behavioural intention constructs can be categorised as having a substantial level of predictive accuracy as suggested by (Cohen, 1988).

Table 4.7: *Coefficient of determination R^2*

Construct	R Square adjusted
Behavioural Intention	0.401

Note: 0.02 (weak); 0.13 (medium); 0.26 (substantial) (Cohen, 1988)

The coefficient of determination *(R^2)* was identified to describe the number of variances that can be explained by the research model (Hair et al., 2017). The R^2 value of task performance, which is 0.401, indicated that the model can explain only 40.1% of the variance; meanwhile, another 59.9% of the variance is explained by other factors not tested in this study. Therefore, the behavioural intention constructs can be categorised as having a substantial level of predictive accuracy as suggested by (Cohen, 1988).

DISCUSSION

As substantial correlations between the independent and dependent variables were found, all hypotheses in this study were accepted. At the same time the research objective was achieved.

H1: Perceived usefulness significantly influence intention to use e-Government services.

An integrated e-Government site might be a huge factor of increased perceived usefulness. Citizens might go to a single point of access for all government services instead of visiting to numerous government departmental websites for different jobs and services, removing the need to know which department is responsible for which service (Shareef et al., 2011). This specific component has the potential to significantly reduce the time and effort required to obtain government information and services. When someone uses a given system and discovers that their work performance has improved to some extent, this indicates that the system has a higher effect of usefulness, and their attitude will change in a positive direction. According to Venkatesh et al., (2011), perceived usefullness has a positive and strong impact on user behaviour, affecting users' intent to utilise a technology (Masrom, 2007).

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According to Shareef et al., (2011), organisational productivity would increase if a system was seen as being useful. Users' perceptions of the value of the government's online resources or services could significantly increase adoption rates. The content on the government's website should be educational, and the services offered should benefit the public at large. AlAwadhi and Morris, (2009) demonstrate how e-Government services' usefulness will encourage more people to use them.

H2: Perceived ease of use significantly influence intention to use e-Government services.

It was discovered that perceived ease of use was a strong indicator of people's intention to e-file than perceived usefulness (Wang, 2003). The perceived ease of use was found to impact behavioural intention to utilise a system positively (Fagan et al., 2008; Hsu et al., 2009; T. Ramayah et al., 2005). This result is in line with previous study by (Carter & Bélanger, 2005) which stated in the literature on e-Government adoption, perceived ease of use was found to be a significant construct.

With enthusiasm, perceived ease of use (indicating self-efficacy) predicted plans for an important aspect of infotainment, prompting a specific behaviour (Moon & Kim, 2001). Learning to utilise an e-Government system would be simple for users since they would be able to obtain better service through the technology. Furthermore, people would find it simple to learn how to utilise the e-Government system (Suki & Ramayah, 2010).

In general, this suggests that online government services must be user-friendly. A state government website should be simple to use. The organisation and presentation of information should be based on the requirements of residents, allowing users to swiftly and easily access the information or services they want. If a user grows dissatisfied with the inability to easily discover information and execute transactions, he or she will be less likely to use e-Government services (Carter & Bélanger, 2005). Governmental bodies can improve perceived user friendliness in a number of ways. One method they do this is by offering instructional videos on their websites that include simple instructions and pictures on how to search and use that particular website. Additionally, e-Government websites should enhance their search and help features to make it easier for users to find important information. Making the use of online services as simple and natural-feeling as possible will help government organisations increase the perception of ease of use.

H3: Perceived security significantly influence intention to use e-Government services.

This study showed a path coefficient of -0.101 for security at a significant p-value of 0.042 with behavioural intention to use e-Government services in Malaysia. According to Sanmukhiya (2019), greater frequency of usage may have enhanced

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people' confidence that government personnel would not share their personal information to outsiders for misuse. Aside from that, the government website and departments should be trustworthy, and citizens' personal information entered on the government website should be kept private.

As a result, the public's distrust of online information technology (IT) is linked not just to security concerns, but also to belief in the information provided by e-Government services. The most typical reasons for consumers avoiding doing online transactions, particularly in e-Government services, are security and privacy concerns. (Godwin, 2001). Three primary degrees of implications are described based on the degree to which customers are concerned about internet privacy (Bandyopadhyay & Sen, 2011), for example, customer reluctance to expose their personal information on the internet, so they browse websites where personal information is gathered or requested, and occasionally even fraudulent personal information is supplied to exploit the context. This may cause customers to avoid using e portals for purchases because such transactions require the exposure of sensitive personal information such as postal address, email, telephone numbers, and so on. (Dinev & Hart, 2004). In extreme cases, consumers sometimes do not show interest in using the internet because they are concerned about their privacy, and sometimes consumers believe that if they voluntarily enter the information, it may still exist in the client computer and host server websites, which may eventually lead to less use of the internet or e-transactions (Bandyopadhyay & Sen, 2011)

This result is in line with previous study by government services should prioritise the following areas: building e-Government service user interfaces, strengthening service security mechanisms, utilising mass media marketing, and expanding the availability of necessary hardware and software for e-Government service use (Suki & Ramayah, 2010) as long it is still convenient which is user friendly website.

LIMITATION OF STUDY AND FUTURE RESEARCH DIRECTION

Data collection from target respondents was limited since physical or in-person survey collecting was not allowed due to the current Covid-19 outbreak, where Malaysia implemented the Movement Control Order (MCO), and only online methods were used. In addition, many people are avoiding social gatherings and direct physical contact with others as a result of the pandemic. As a result, several users of the e-Government system refused to participate in any surveys or research projects. Moreover, the study only covers three main predictor namely perceived usefulness, perceived ease of use and perceived safety. Meanwhile there are other predictors could influence the behvaioural intention to use e-Government services.

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Future research should take into account a comparative study with other countries to establish the extent of behavioural intention factors towards e-Government Malaysia as this study was done within the setting of the e-Government users in Malaysia. In addition, future studies should take into account the inclusion of additional mediator variables, such as information reliability, ICT coordination, and social pressure to determine their relationships between the independent and dependent variables. This is because additional mediators, particularly social pressure, may affect how these variables interact. In order to improve the number of responses, future studies should think about including other techniques for gathering data from respondents. Future research may extend research models like the Technology Acceptance Model (TAM). To reduce sampling error and improve the validity and dependability of the results, non-parameter sampling should be used in future study.

CONCLUSION

This study aimed to identify the relationship between three behavioural intention factors towards e-Government services in Malaysia. Based on the findings, behavioural intention factor is influenced by all three factors. From the result shows that all three variables are significant to the behavioural intention towards e-Government services. This shows that both objective; objective 1 and 2 of the research is achieved. There is significant relationship between factors (perceived usefulness, perceived ease of use and perceived security) and behavioural intention factors towards the e-Government services. Based on the factors, the strongest factors influencing behavioural intention factors towards e-Government services are perceived ease of use. Hence, Ha2 is successfully accepted. This study donates toward research theories of TAM. All hypothesis was accepted a line with the objective aimed from the beginning of the research.

By taking into account the requirements and expectations of individuals, e-Government offers more accessibility and improved responsiveness. It is thought to be an excellent tool to encourage citizen development in democratic issues. The incompatibility between the government's initiatives to adopt e-Government services in administrative services and the low level of usage among citizens impedes the government's capacity to connect its citizens electronically.

The findings of this study may help researchers better understand the relationships between behavioural intention aspects that should be taken into account in order to provide a basis for future, in-depth research on this topic and assure the success of e-Government services in Malaysia. It could stimulate additional research into e-Government services, and perhaps this could serve as a source of inspiration for future studies in response to the change toward developing e-Government websites and apps as well as other technology that is in line with IR. 4.0.

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Besides, by understanding factors potentially to influene e-govenrment service use among publica, local authorities around Malaysia can facilitate the effectiveness of e-Government websites. The results of this study could help with the development of a better e-Government model for Malaysia. The new and improved model can serve as a model for policymakers as they carefully review their current e-Government websites and applications and make the necessary adjustments, adaptations, improvements, and enhancements to ensure that every citizen can benefit from the implementation of e-Government services and ultimately realise the government's vision of having full electronic access to all of its services in the future. In reality, it can boost user pleasure, which is important in the present modernization era where everything must be at the user's fingertips. Finally, this research might serve as a source of inspiration for future research projects as well as contribute to the growth of studies focused on e-Government services.

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Muhammad Hafiz Hariz Zubir initiate the study, wrote the draft, collect the data and analyse the data. Muhamamd Safuan Abdul Latip, supervise the study, collect the data, analyse the data and finalise the paper.

Conflict of interest

No conflict of interest associated to this publication.

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