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# THE EFFECT OF DIGITAL LITERACY AND DIGITAL DIVIDE ON E-GOVERNMENT ADOPTION

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**Abstract:**

The Malaysian government has launched MyDIGITAL as a national initiative to transform Malaysia into a digitally enabled and technology-driven high-income nation. The digital economy was acknowledged as a key economic growth area. The six strategic thrusts under MyDIGITAL are in line with the national development policies under the 12th Malaysian Plan. The implementation of the Malaysia Digital Economy Blueprint will strengthen the foundation of digital adoption, drive inclusive digital transformation, and finally, make Malaysia a digital content and cyber security leader in the regional market. Thus, this study investigates the newly introduced Digital Road Tax (e-LKM) and Digital Driving License (e-LMM) online renewal through the MyJPJ Digital Platform. The implementation, adoption, and use of e-government have represented a challenge, especially in our country, due to two main challenges i.e. digital literacy, and the digital divide. Digital literacy encompasses the skills and ability to use digital communication tools and networks to access, manage, integrate, evaluate, and create information. Digital Divide on the other hand is defined as the gap between individuals who have access to IT knowledge and resources and those who do not. This research will evaluate the adoption of government facilities from the citizens' perspective using an extended Technology Acceptance Model (TAM), based on the assumptions that citizens with high literacy levels and a low digital divide will have a higher adoption rate of e-government services. Data will be collected through a structured questionnaire from drivers in the northern region of Malaysia namely Penang, Kedah, and Perlis. Data will be tested using SPSS and PLS-SEM. The major findings of this study will be on the effect of digital

literacy and the digital divide on the adoption of e-government services and the net benefits of e-government.

**Keywords:**

Digitalization, Digital Literacy, Digital Divide, Adoption, TAM

**Introduction**

The emergence of digital technology and the expansion of e-government services in recent times have revolutionized governmental interactions with citizens. The incorporation of digital platforms and electronic services into Malaysia's public sector, mirroring global trends, aims to enhance the efficiency, accessibility, and transparency of governmental operations. These services offer a diverse range of public utilities, from utility bill payments to obtaining official documents, progressively gaining significance in citizens' lives (Alias, Hassan & Azan,2023). The Malaysian government has launched MyDIGITAL as a national initiative to transform Malaysia into a digitally enabled and technology-driven high-income nation. The digital economy was acknowledged as a key economic growth area. The six strategic thrusts under MyDIGITAL are in line with the national development policies under the 12th Malaysian Plan. Implementing the Malaysia Digital Economy Blueprint will strengthen the foundation of digital adoption, drive inclusive digital transformation, and finally, make Malaysia a digital content and cyber security leader in the regional market.

The most recent e-government initiative launched in Malaysia on February 10, 2023, comprises the Digital Road Tax (e-LKM) and Digital Driving License (e-LMM) accessible through the MyJPJ app. This online platform enables Malaysian private vehicle owners, including cars and motorcycles, to conveniently renew their driving licenses and road taxes. By facilitating online renewals, this initiative aims to alleviate congestion and lengthy queues at JPJ counters, eliminating the need for drivers to collect documents from these counters physically. Nevertheless, these services are not mandatory, as owners still have the option to apply for hard copies of their road tax and driving licenses. As per the Road Transport Department (RTD) Director General Datuk Rospiagos Taha, the availability of dual options is provided because not all individuals possess proficiency in digital literacy. Moreover, residents in rural areas and older individuals might encounter difficulties in utilizing digital platforms. As such, the transition to digitalization is a process that requires time and consideration (NST, 2023). Previous researchers also have acknowledged the impact of digital divide and digital literacy on e-government adoption. Shahzad, Tahir, Chemma and Ahmad (2024) have highlighted that digital divide as the predictor of adoption and citizens are lacking in the usage of modern technology due to the unavailability of computers and internet. Similarly, Hassan and Azan have evaluated the digital literacy of e-government services usage in urban Malaysian communities and highlights the importance of increasing the awareness and enhancing the digital literacy to promote the adoption of e-government services in Malaysia. Additionally, Man and Manaf (2023) in their study exploring on the acceptance of e-participation in Malaysian public sector have found that some individuals are reluctant to engage in e-participation efforts due to limited exposure and insufficient proficiency in digital literacy.

Therefore, we can conclude that the implementation, adoption, and use of e-government have represented a challenge, especially in our country, due to two main challenges i.e. low digital literacy, and the digital divide. Digital literacy encompasses the skills and ability to use digital communication tools and networks to access, manage, integrate, evaluate, and create information. Digital Divide, on the other hand, is defined as the gap between individuals who

have access to IT knowledge and resources and those who do not. Thus, this study aims to explore the effect of digital literacy and the digital divide by employing the Technology Acceptance Model as the theoretical framework. The TAM is a widely recognized model that examines the factors that influence individuals' acceptance and intention to use technology

## Literature Review

### *Technology Acceptance Model (TAM)*

TAM is one of the broadly accepted models for information technology acceptance. TAM was applied to clarify the customer acceptance of innovation utilized in a diverse environment setting (Zaineldeen Hongbo, Koffi, Abdallah Hassan, 2020). Technology acceptance is the voluntary decision made by an individual to use new technologies. Users' willingness is a critical component for the effective deployment and use of technology. TAM is regarded as a cornerstone model in the realm of technology adoption and utilization, given its widespread application in examining user acceptance of various information systems and technologies. The model underscores the importance of understanding prospective users' viewpoints, as their perceptions regarding a technology's usefulness and ease of use significantly impact its acceptance and adoption. TAM posits that users' behavioral intention to adopt a particular technology is influenced by two primary factors: perceived ease of use and perceived usefulness (Ezeudoka & Fan, 2024). Many previous studies have examined these two variables in different settings and revealed a significant relationship between perceived usefulness, perceived ease of use, attitude, and behavioral intention. In the context of this study, it will examine the effect of digital literacy and the digital divide on the behavioral intention to adopt the e-LKM and e-LMM services by MyJPJ app in Malaysia whereby the adoption is also voluntary.

### *Digital Literacy*

Digital literacy involves the skills and ability to use digital communication tools and networks to access, manage, integrate, evaluate, and create information. It is a combination of technical-procedural and emotional competence to use the information system, including the skills needed to engage in social networking applications and ensure presence in online collaborative activities (Abdulkareem & Ramli, 2021). The study found that digital literacy has a significant influence on the adoption of e-services. They suggest that citizens with high digital literacy level will be more readily available to adopt e-services. Similarly in another study on the impact of digital literacy on e-government performance in Malaysia, it was found that digital literacy revealed as the strongest effect and the strongest determining predictor of e-government performance in Malaysia (Abdulkareem & Ramli, 2020). Ullah, Kiani, Raza and Mustafa (2022) investigated the effect of digital literacy towards consumers intention to adopt mobile payment and mobile banking in Pakistan. The study reveals that digital literacy significantly and positively impacts intention to adopt the services. Further, Nikou, Reuver, and Kanafi (2022) have investigated the role of digital literacy in the adoption of digital technology among employees in various sectors in Finland. It was revealed that digital literacy significantly but indirectly influences the intention to use technology at workplace context through perceived ease of use.

Similarly, Jang and Sung (2022) studied the impact of digital literacy on artificial intelligence-based public services and found an indirect but significant relationship via perceived usefulness and perceived ease of use towards intention to use the public services. Additionally, digital literacy was found to be significantly related to perceived usefulness, perceived ease of use and

online shopping intentions among internet users in Palestine (Nazzal, Thoyib, DJumilah & Zain, 2021). Thus, it can be concluded that:

> P1: Digital Literacy has a significant positive impact on intention to use e-LKM and e-LMM among drivers.
> P2: Digital Literacy has a significant positive impact on Perceived Ease of Use Towards intention to use e-LKM and e-LMM among drivers
> P3: Digital Literacy has a significant positive impact on Perceived Usefulness towards intention to use e-LKM and e-LMM among drivers

### *Digital Divide*

The gap between individuals who have access to IT knowledge and resources and those who do not is known as the "digital divide" (Mason & Dodds, 2005). Previous studies have found a strong connection between digital divide and technology adoption. Patergiannaki and Pollalis, (2024) investigated the role of digital divide towards the behavioural intention of e-government adoption in Greek and found that digital divide as a crucial determinant of e-government adoption. Equally, Masa'deha, Almajalib, Majalib, Majalid and Al-Sheridehe (2023) investigated the relationship between the digital divide and the intention of Jordanians towards e-government usage and discovered that digital divide has a significant and direct relationship towards the use of e-government services. Similarly, Belanger and Carter (2009), have a found a significant impact of digital divide towards-government usage. Additionally, Khanra and Joseph (2019) highlight the digital divide as a crucial factor affecting willingness to adopt e-Government in India. Also, Lopes, Macadar and Luciano (2019), identify low ICT literacy and the digital divide as impediments to the perception of the public value of an e-service and e-Government adoption in Brazil. Further Gupta (2020) found a significant impact of digital divide namely access divide towards e-government usage intention among citizens of India. Thus, it can be concluded that:

> P4: Digital Divide has a significant positive impact on intention to use e-LKM and e-LMM among drivers.
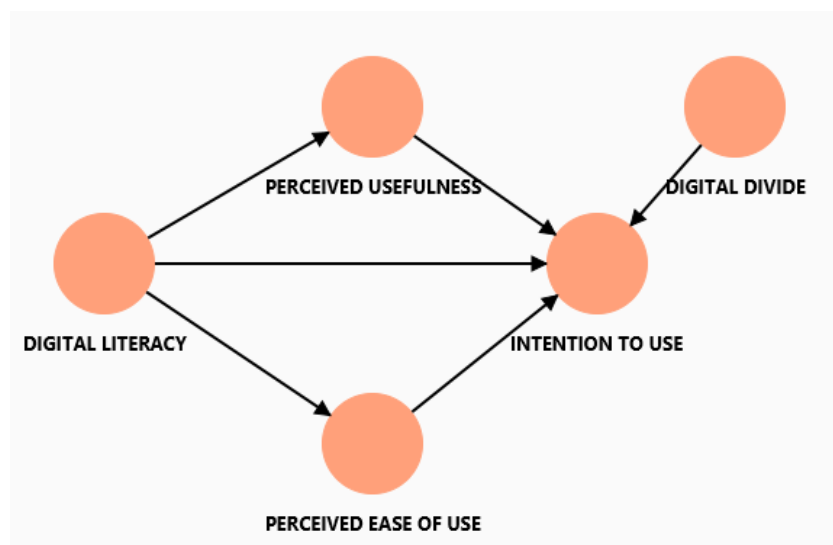


**Figure 1: Proposed Framework**

## Research Methodology

This is a quantitative study as it intends to measure the influence of independent variables (Perceived Usefulness, Perceived Ease of Use, Digital Literacy, Digital Divide) on the dependant variable (Intention to use e-LKM and e-LMM). To test these proposals, a set of self-administered questionnaires survey will be used upon those drivers in the northern region of Malaysia consist of Penang, Kedah and Perak.

### Research Design

This study is a correlation study in nature. Correlation study is conducted in a natural environment of a community with a minimum interference by the researcher with the normal workflow of work (which means after developing the theoretical framework, researcher will collect relevant data and analyze them to obtain the findings (Lean, Zailani,Ramayah & Fernando, 2009).

The unit of analysis chosen for this study is the drivers and private vehicle owners in. The reason for choosing the private vehicle owners are due to the fact that the e-LKM is only applicable for private vehicle owners currently.

### Statistical Tools and Methods

To perform the analysis, SPSS software and Smart PLS 4.0 will be used. SPSS used to analyse the demographic profile and the usage of Smart PLS, on the other hand, was for a more complex relationship involving regression, moderating and mediating effects analysis. Partial least square method was used to test the study model. This technique simultaneously assesses the measurement model and the structural model by minimising the error variance. Smart PLS version 4 will be used to analyse the relationship among the variables.

## Conclusion

Findings from this study will have various implications for research as well as practice. This study tries to evaluate the adoption of e-government in by including the digital literacy and digital divide as a influencing variable on the adoption of e-government services particularly e-LKM and e-LMM either directly or indirectly through perceived usefulness and perceived ease of use. The current study has notable implications for policymakers, especially those engaged in e-governance. Firstly, to establish enduring e-government systems, governments must prioritize efforts to bridge the digital divide. Disparities in access to information and communication technology (ICT) can pose challenges for citizens in utilizing e-government services. Therefore, ensuring widespread accessibility to ICT infrastructure is imperative. Secondly, the study also emphasizes the need for ICT competence of the citizens to make use of digital services. The government should enhance the citizens' digital literacy skills to increase their confidence in using these services. Government can intensify on ICT training and skills enhancement through inculcating ICT into the curriculum of schools. Also, it will equip public administrators with a stronger, more practical, and comprehensive framework that prioritizes citizen-centricity in delivering e-services and online information. This will meet the needs of citizens seeking good governance and enhanced service delivery.

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