

Evaluating the Digital Literacy Of E-Government Services Usage in Urban Malaysian Communities

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ABSTRACT

The study aims to investigate the influence of e-government service accessibility and trust in the government on the usage patterns of urban communities in Malaysia. The research model integrates the Technology Acceptance Model, digital literacy, accessibility, awareness, perceived service quality, and trust in government. The study focuses on the residents of Kampung Baru, Kuala Lumpur, spanning various age groups. A Google Form survey was administered to gather data. The results indicate that factors such as accessibility, awareness, and trust in the government significantly contribute to the utilization of e-government applications among the surveyed population. This underscores the importance of addressing these factors to enhance the effectiveness of electronic government services and meet the needs of urban communities in the digital era.

Keywords: *Usage of Egovernment, Accessibility of Egovernment, Trust in government, Theory Acceptance Model*

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INTRODUCTION

The concept of e-government services represents a significant shift in governance, emphasizing citizen-centric approaches and leveraging technology to enhance transparency, efficiency, and civic engagement (Alzahrani et al., 2017). Factors such as trust in government, accessibility, and digital literacy play crucial roles in shaping user attitudes and behaviors towards e-government services (Mensah, 2019). Studies have shown that addressing these factors is essential for the success and adoption of e-government initiatives (Hammad et al., 2019).

E-government services serve as a catalyst for modernizing public administration, improving service delivery, and fostering citizen-government interactions (Nulhusna et al., 2017). By embracing digital transformation, governments can create more responsive and citizen-centric governance frameworks, streamlining processes and enhancing overall service quality (Alkraiiji & Ameen, 2021). The utilization of e-government services has the potential to bridge gaps in access and participation, ultimately strengthening the democratic fabric of society (Kanaan et al., 2023).

Research has highlighted the importance of trust, service quality, and satisfaction in influencing citizen loyalty towards government e-services (Hutahaeen et al., 2023). Additionally, factors such as security, privacy, and service quality have been found to impact trust and intention to use e-government services (Alsarraf et al., 2022). Studies have also emphasized the role of social media, good governance, and public trust in increasing citizens' e-government participation (Pinem et al., 2018).

In conclusion, e-government services play a pivotal role in shaping the future of governance by leveraging technology to meet the evolving needs of society. Understanding the factors that influence the adoption of e-government services is crucial for enhancing their effectiveness, promoting digital inclusion, and fostering transparent and responsive governance frameworks.

LITERATURE REVIEW

Usage of E-Government Services

The historical development of research on e-government services in urban Malaysian communities has been influenced by milestones such as the launch of the Multimedia Super Corridor (MSC) in 1996, which initiated the digitization of service delivery systems in Malaysia (Husin et al., 2017). Recent research in this area has been guided by theoretical frameworks like the Technology Acceptance Model (TAM) and has focused on factors such as digital literacy, accessibility, awareness, perceived service quality, and trust in government (Rahim et al., 2023). Methodologies employed in recent studies include quantitative approaches like surveys and data analysis tools such as SPSS, with research designs often involving online surveys to assess urban Malaysian residents' perceptions of e-government services (Mohamad et al., 2019).

Recent trends in the concepts and constructs studied in the field of e-government services usage have seen a shift towards more sophisticated quantitative approaches and the integration of multiple theoretical frameworks to provide a comprehensive analysis of user behaviors and perceptions towards e-government services (Razak et al., 2017). Recent developments in theories and models used to explain these concepts have aimed at incorporating a more holistic understanding of user behaviors and perceptions (Sambasivan et al., 2010). Research methods have evolved towards advanced statistical analysis techniques to uncover nuanced relationships between variables, indicating a trend towards more rigorous and in-depth analysis in this field (Purnamasari et al., 2022). These trends suggest a future emphasis on interdisciplinary approaches and insights from various fields to enhance the understanding of e-government service usage in urban settings (Rannan-Eliya et al., 2016).

Previous studies have provided valuable insights into the adoption of e-government services among urban Malaysian communities, emphasizing factors like accessibility, awareness, and trust in government. These studies have utilized methodologies such as surveys, data analysis, and theoretical frameworks to explore user perceptions and behaviors towards digital government services. While these studies have contributed significantly to understanding e-government service usage, limitations exist in terms of sample size, generalizability, and the scope of variables considered. Future research directions could focus on addressing these gaps, exploring the impact of cultural factors on service adoption, and investigating the role of user experience design in enhancing service usability.

Digital Literacy

The research field of digital literacy and its impact on e-government services has undergone significant development, focusing on the advancement of digital literacy in conjunction with the integration of technology in society (Çetindamar & Abedin, 2020). Scholars have defined digital literacy as the proficient use of technology for secure interactions with electronic devices and software, emphasizing the necessity of bridging the digital divide, particularly in developing nations (Mills, 2010). Recent studies have utilized frameworks such as the Unified Theory of Acceptance and Use of Technology (UTAUT) and the Digital Inclusion Framework, employing mixed-method approaches to investigate the correlation between digital literacy and the utilization of e-government services (Liza & Andriyanti, 2020).

Recent advancements in theories and models have emphasized the importance of overcoming obstacles to digital access and skills enhancement, shifting towards more user-centric and inclusive strategies for digital literacy and e-government service delivery (Tınmaz et al., 2022). Previous research has highlighted the crucial role of digital skills in effectively accessing digital services, with future research directions aiming for broader studies encompassing diverse populations to address limitations like small sample sizes and restricted generalizability (Ninghardjanti & Dirgatama, 2021).

The interaction of digital literacy with factors such as socio-economic status, educational attainment, and cultural background is being explored to offer a comprehensive insight into the digital divide and its implications for e-government service delivery (Baber et al., 2022). The development of digital literacy and its supporting factors are under scrutiny, with a plea for the improvement of digital skills and accessibility for all individuals to ensure fair access to e-government services (Silber-Varod et al., 2019).

Accessibility of E-Government Services

E-government systems offer a key advantage by providing government services around the clock, seven days a week. Access to online services is crucial, especially for services traditionally monopolized by institutions, such as vehicle registration, item clearance at ports, and license renewals in Ghana. The importance of the government's ability to implement online services, reducing bureaucracy. Ghanaians have increasingly accessed online government services, exemplified by the "Connecting the Unconnected Ghanaians in Four Selected Villages in Western Ghana" project in 2018. This initiative, a collaboration between the Ministry of Communications and a Danish ICT company, utilized satellite wifi and a local cloud for quick access to e-health, e-government, and e-learning services. The project facilitated the exchange of crucial information between rural residents and government representatives, empowering farmers with instructional videos and enabling doctors to access vital information. The importance of access to ICT technology is a significant factor influencing e-government usage in Ghana, as noted by Osei-Kojo (2017) and Yaw et al. (2017), highlighting the role of the access divide in the digital divide paradigm.

Theory Acceptance Model (TAM)

The Technology Acceptance Model (TAM) had a dual purpose: firstly, it elucidated the mechanisms behind technology acceptance, enabling the prediction of user behavior and providing a theoretical framework for effective technology adoption. Secondly, it aimed to guide practitioners on pre-implementation steps. Developed by Davis in 1989 and 1993, TAM laid the foundation for understanding the mediating factors between external elements, such as information system features, and the practical application of these systems. Drawing inspiration from the Theory of Reasoned Action, it introduced a psychological perspective on human behavior that was lacking in the information systems literature. This research seeks to explore the positive correlations between digital literacy, e-government service usage, perceived quality of e-government services, accessibility of e-government services, and trust in government.

METHODOLOGY

This study employed a quantitative methodology, utilizing questionnaires with Likert scales and background information to gather data. The inclusion of a Likert scale enhances the accuracy and reliability of study findings by collecting both descriptive and explanatory data. The Likert scale questions are designed to explore and assess the perception of e-government services usage in urban Malaysian communities. This scale serves as a tool to measure respondents' opinions, attitudes, or perceptions regarding the evaluation of e-government services usage in these communities. Participants are required to indicate their level of agreement or disagreement with each statement or question in a standardized series.

The survey investigated the relationships between the placement of e-government services and key factors influencing consumer behavior, excluding geographical location and ethnicity as subjects were all residents of Malaysia from Kampung Paya, Kampung Bharu, Kuala Lumpur. The questionnaire, available in Malay and English, consisted of seven sections: demographic information, accessibility of e-government services, awareness of e-government services, perceived quality of e-government services, trust in government, digital literacy, and usage of e-government services. The survey incorporated a definition of e-government services placement in the opening section, and questions were designed based on factors impacting consumer behavior, such as age, gender, family structure, and income. Confidentiality was maintained through anonymous responses. Scale questions assessed consumers' effectiveness and acceptance of e-government services in Malaysian cities, along with their degree of influence and impact. Multiple-choice questions addressed consumers' memory of commercials related to e-government services, bridging various placement modalities. The questionnaire aimed for completion within five to ten minutes to ensure a reliable response.

Table 1: Questionnaire about Usage in E-government Services

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Total
I have a positive attitude towards using e-government services	4	7	14	53	22	100
I use/intent to use e-government services	3	8	17	53	19	100
I often use/intent e-government services	3	10	24	44	19	100

FINDINGS AND DISCUSSION

Table 2: Cronbach's Alpha

Item	Reliability	
	Cronbach's Alpha	N of item
Digital Literacy	.320	3
Usage of E-Government Services	.937	3

Reliability tests, specifically Cronbach's alpha, serve as a statistical tool to evaluate the internal consistency of scaled questions using a Likert scale, examining the accuracy of the claims within the questions. In this study, four Likert scale questions assessing the efficacy of the accessibility of e-government services (ease of use) yielded a Cronbach's alpha value of .858, indicating "good" internal consistency. Three Likert scale questions exploring the efficacy of digital literacy exhibited

a Cronbach's alpha coefficient of .320, indicating a somewhat "unacceptable" level of internal consistency, suggesting a lower degree of dependability in this aspect.

As the accessibility of various e-government services continues to expand, there is a growing concern surrounding the factors influencing why certain populations engage with specific e-government activities while others do not (Nam, 2014). Citizens with limited abilities, such as inadequate digital literacy, face challenges in utilizing e-government services, particularly for tasks like information retrieval. The term "digital literacy" encompasses the unequal access to information and communication technology (ICT) and the varying possession of skills required to effectively navigate and utilize it.

The literature on digital literacy highlights a correlation between internet use and higher educational levels. Additionally, individuals with higher incomes and education levels are more likely to express confidence in their understanding of government processes and their ability to participate effectively (Zheng and Schachter, 2017). In terms of general e-government use, there is an adverse and significant association with unemployment, indicating that unemployed individuals are less inclined to utilize e-government features, particularly when seeking government assistance.

The Cronbach's Alpha coefficient, with a value of .937, indicates "excellent" internal consistency for the three Likert scale questions. These questions specifically evaluated the effectiveness of using e-Government services. Consequently, the collected samples demonstrated both good dependability and internal consistency.

Table 3: The correlation between variable independent and dependent variable

Correlation		
Independent Variable	Dependent Variable	Pearson Correlation
Digital Literacy	Usage of E-Government Services	.428

Table 3 the utilization of e-government services and digital literacy, specifically computer self-efficacy, exhibits a secondary connection with a coefficient of .428 in this context. The data suggests a discrepancy between Malaysian urban residents and their levels of digital literacy, particularly in terms of computer self-efficacy. Concerns arise with the increasing availability of various e-government functions, questioning why certain populations engage in specific e-government activities while others do not. This discrepancy is particularly evident for citizens lacking the necessary skills, hindering their ability to effectively use e-government for information retrieval, emphasizing the importance of addressing digital literacy challenges for equitable access and usage.

The disparity in access to and utilization of e-government services among various demographic segments is a concern for governments and presents a substantial problem, as highlighted by Rosario Pérez-Morotea (2020). The newly introduced technical tools of e-government may only benefit a specific subset of the population, raising questions about inclusivity and accessibility (Rosario Pérez-Morotea, 2020). Akman et al. point out that the use of e-government information and services is widespread and correlates directly with gender and education levels.

Age is also a factor to consider, as it has been found to be inversely related to the intention to use e-government services, particularly affecting elderly individuals, according to digital literacy research.

Szopiński and Staniewski discovered a statistically significant association between respondents' domicile status and their inclination to use specific types of e-government. The Diffusion of Innovations Theory (Rogers, 2003) provides a robust theoretical foundation, suggesting that early adopters of technological innovations share common characteristics like being young, well-educated, and having higher incomes. These characteristics align with those of e-government service users.

The literature on digital literacy indicates a correlation between Internet use and higher educational levels, as highlighted by Colesca and Dobrica (2008). Moreover, individuals with better incomes and education are suggested to exhibit more confidence in their abilities to understand government processes and actively participate. Notably, unemployment showed a substantial and adverse connection to overall e-government use, suggesting that unemployed individuals were less inclined

to utilize e-government features even when they required government assistance, according to Luisa Fernanda RodriguezHeví (2020).

CONCLUSION

The study aimed to evaluate the perceptions of Malaysian urban residents regarding the utilization of e-government services. Data from the survey questionnaire were analyzed using SPSS software. The findings revealed that 53% of Malaysian urbanites either agree or plan to use e-government services, with a corresponding positive attitude reported by the same percentage. However, 44% of city dwellers expressed concerns about potential negative consequences associated with using e-government services. The study highlights the importance of increasing awareness and enhancing accessibility, security, quality, and digital literacy to promote the adoption of e-government services in Malaysia. The conclusions drawn from the study suggest recommendations in these areas.

To boost the adoption of e-government services, the Malaysian government should focus on increasing awareness among the public. Utilizing social media, advertising campaigns, and various communication channels can effectively achieve this goal.

To enhance the user-friendliness of e-government services, efforts should be made to improve their accessibility. Streamlining the access process and providing users with clearer guidance and assistance can contribute to making these services more user-friendly.

To increase user confidence, it is crucial to enhance the security of e-government services. This can be achieved by implementing stronger security measures, such as encryption and two-factor authentication. These improvements will contribute to a more secure and trustworthy e-government environment.

Enhancing the quality of e-government services is essential to meet users' needs effectively. This improvement can be realized by consistently gathering user feedback through surveys and utilizing this input to refine the development and delivery of e-government services. This iterative process ensures that the services align closely with users' expectations and requirements.

Promoting higher digital literacy within local communities is crucial for increased adoption of e-government services. This objective can be accomplished by providing users with support and training programs, aiming to enhance their computer skills and deepen their understanding of e-government services. This proactive approach empowers individuals to navigate online services with confidence and efficiency.

In conclusion, the study provides valuable insights into the perceptions of urban Malaysians regarding the use of e-government services. The recommendations put forward have broader implications, offering guidance for Malaysia and other nations seeking to develop and implement e-government services more efficiently. By prioritizing improvements in security, awareness, accessibility, quality, and digital literacy, governments can foster greater adoption of e-government services, leading to more effective and streamlined public services.

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