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## DETERMINANTS OF CASHLESS PAYMENT ADOPTION AMONG RURAL RESIDENTS IN SUNGAI PETANI, KEDAH

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### Abstract:

Cashless payment methods have revolutionized transactions in the world today. As a new way of spending money became widespread, the situation resulted in an increase in the use of electronic wallets, internet banking, and contactless card payment. The increasing importance of technology for everyday business operations is represented in the growing reliance on digital financial services. However, the level of adoption of cashless payments in rural communities remains an important area of investigation. Despite the growing adoption of cashless payment systems, there is still a limited understanding of how infrastructure, digital literacy, trust, and merchant readiness collectively influence actual usage in rural areas, particularly in developing countries. This study aims to examine the determinants influencing the adoption of cashless payment systems in selected rural areas of Sungai Petani, Kedah. Data was collected from respondents living in rural communities and analyzed using the Statistical Package for the Social Sciences (SPSS). The analysis was conducted to determine the relationship between several selected variables and the adoption of cashless payment methods among rural residents. The findings indicate that a number of factors influence the adoption of cashless payment systems in rural areas. In addition, the results highlight the important role of technological advancement and accessibility in encouraging individuals to adopt digital payment platforms. The study also suggests

that increased awareness and exposure to digital financial services can further promote the use of cashless payments. Overall, the findings provide useful insights for policymakers, financial institutions, and service providers in developing strategies to enhance digital payment adoption and promote financial inclusion in Malaysia.

**DOI:** 10.35631/AJBES.827050 **Keywords:**

Cashless Payment Adoption; Digital Transaction; Malaysia; Rural Communities



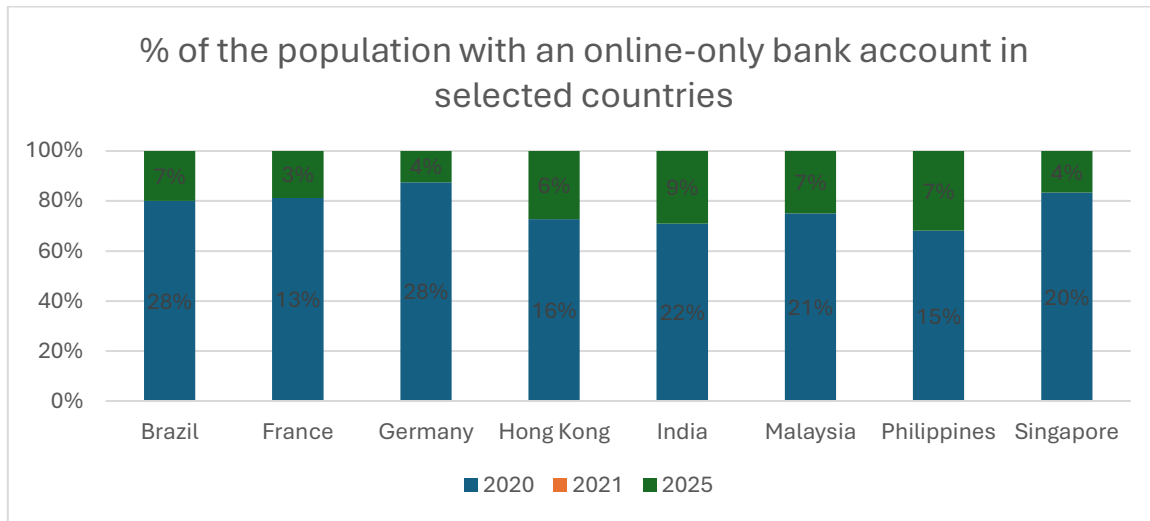
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## Introduction

Some aspects of the way the world functions have changed as a result of technological progress. As a result, it revolutionizes the way people do transactions and helps with people's affairs. Bartering was the first form of exchange, and later, currency and credit cards took their places (Peneder, 2022). Financial transactions that are mostly performed by electronic methods or cards, eliminating the need for physical currency, are referred to as cashless payments (Bilińska-Reformat & Kieźel, 2016). Simplified, it is one way that money can be transferred digitally through services like online banking, digital wallets, or credit/debit cards. According to Kruger and Seitz (2014) and Sreenu (2020), certain countries have embraced cashless payment techniques more widely than others. This is especially true of the Scandinavian nations and the Netherlands. The goal of implementing a cashless system was to alleviate the burden of cumbersome and expensive transactions on both buyers and sellers. A customer can use an online e-payment platform to handle their online transactions instead of going to a physical bank branch. All it took was an internet connection for customers to pay for goods and services online. Society is driven to adapt its financial management practices for a variety of reasons, including convenience, technological breakthroughs, and safety. This is not just a Malaysian thing; it is a global thing, particularly in industrialized countries.

The most recent year for which the source estimates, 2021, non-cash transactions in the Asia-Pacific region totaled 456 billion USD, according to the Capgemini Research Institute for Financial Services Analysis. Subsequently, transactions in North America and Europe totaled 259 and 205 billion USD, respectively. Malaysia has reported that the aggregate transaction value of digital payments in Malaysia increased by over 13 billion U.S. dollars in 2023 and was expected to reach approximately 207 billion U.S. dollars by 2025. This implies that the number of electronic payment methods in Malaysia is increasing on an annual basis. Malaysia is anticipated to achieve a 16% increase in the adoption of digital banking in Asian countries by

2025, surpassing Singapore and the Philippines. The percentage of citizens in each country who have an online banking account is depicted in Figure 1.1.



### ***Problem Statement***

As per The New Straits Times, approximately four million Malaysians, or 12% of the population, are still isolated from online financial services. These individuals are primarily from rural areas. One of the primary causes of this issue is the lack of confidence in the security of the online banking system. The growing concern among communities, particularly in rural areas, is due to the increasing quantity of news regarding scams, phishing, and the vulnerability of the financial security system. According to recent data from Bank Negara Malaysia (BNM), the number of financial misconduct cases recorded in Malaysia increased by 30% during the first half of 2024 in comparison to the same period in 2023. This increase in fraud cases has drawn attention to deficiencies in consumer awareness and security measures. Bank Negara Malaysia also emphasized that the majority of these incidents were the result of identity theft and phishing schemes. Additionally, The New Straits Times published a statement from the Deputy Home Minister, Datuk Seri Shamsul Anuar Nasarah, which reported that 10,348 cases involving losses totaling RM352.9 million were registered in 2023. This figure places telecommunications crimes, such as SMS contest scams, online impersonation scams, and phone call scams, among the highest recorded cases. The security of financial institutions in protecting their funds has become a source of concern for the majority of rural communities as a result of the growing number of cyber offenses. Some individuals, particularly senior citizens, have taken precautions by storing their money at home due to their lack of confidence in the security of online banking. Consumers are considerably more inclined to avoid employing technologies that they perceive as insecure (Masihuddin, Khan, Mattoo & Olanrewaju, 2017).

### **Literature Review**

This literature review addresses three key topics: the adoption of cashless payments, the underlying theory, and the framework for the factors that influence cashless payments.

## ***Adoption of Cashless Payment***

Cashless payments are financial transactions in which consumers conduct financial transactions in the absence of physical currency (Bilińska-Reformat & Kieźel, 2016). The primary method of payment for these contactless transactions is the use of electronic methods or cards, which do not typically involve physical money. These contactless payment systems have been utilized more extensively in certain countries, including the Netherlands, Germany, and, most significantly, the Scandinavian countries (Krüger and Seitz, 2014; Sreenu, 2020). The adoption of contactless technology is subject to significant variation across various demographics, regions, and economies, with distinct challenges arising in particular contexts. This literature review investigates the development of contactless technology, its drivers and obstacles, and its implementation in a variety of contexts. During the mid-20th century, the first introduction of credit cards marked a new evolution in payment methods and a transition from traditional physical currency to digital payment in society. This was the beginning of the cashless payment industry. Particularly with the advent of the internet and mobile devices, technology has progressively advanced over time. This development has resulted in a significant increase in the development and adoption of contactless payment systems. The global expansion of access to digital financial services has been significantly influenced by the diverse array of mobile payment platforms, including PayPal, Alipay, and M-Pesa (Donovan, 2012). Additionally, as QR code-based transactions have been developed in recent years, technology has simplified the transaction process for consumers. Consumers can easily pay by scanning the QR code, making it more convenient and accessible for them to use.

In Malaysia, the popularity of cashless payments has surged in recent years, significantly bolstered by technological breakthroughs, governmental initiatives, and a societal transition towards digitalization. Currently, the majority of Malaysians utilize mobile payment services like Touch 'n Go eWallet and Duitnow QR for daily financial transactions, including meal payments and supermarket purchases, as many companies have begun to adopt cashless payment systems. These systems provide ease by allowing users to settle bills, engage in online shopping, and transfer funds using their cellphones. QR code-based technologies, like DuitNow QR, have streamlined cashless transactions by offering a standardized approach compatible with several banks and e-wallet services. The Malaysian government significantly contributes to the proliferation of cashless systems by implementing numerous strategies and efforts for the populace. This encompasses the e-Tunai Rakyat initiative launched in 2020 to promote the adoption of digital payments among Malaysians. This was also one of the tactics implemented by BNM as part of the nation's aim to transform Malaysia into a developed digitalized country in the future. Nonetheless, despite the Malaysian Government's extensive efforts, several individuals remain excluded from this progress for various reasons. This is evidenced by the assertion of Mr. Rashaad Ali, Co-founder of the Social & Economic Research Initiative (SERI), that insufficient supporting infrastructure, including inadequate Internet coverage in semi-urban and rural regions, along with a nationwide deficiency in access to devices, will result in the exclusion of certain demographics, thereby hindering the advancement of cashless technology in Malaysia.

## ***Theory of Reasoned Action (TRA)***

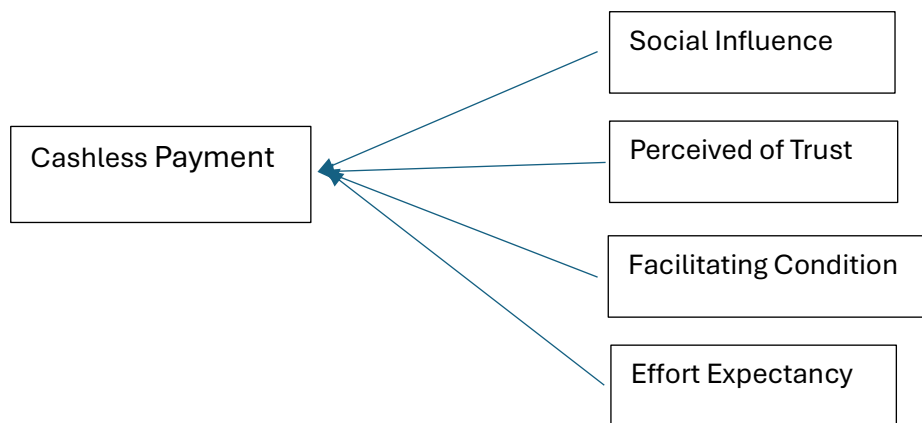
The Theory of Reasoned Action (TRA) is an attempt at a psychological framework for understanding the connection between attitudes, intentions, and behaviors. It was developed in the late 1960s and early 1970s by Martin Fishbein and Icek Ajzen (2010). Humans, according

to this theory, follow a logical process that involves carefully considering the potential consequences of their actions before making a final decision. The Theory of Planned Behavior (TPB) is an offshoot of the TRA, which is examined in this essay along with its foundational elements, practical uses, criticisms, and development. The theory behind the TRA is that two important constructs, attitude toward conduct and subjective norms, shape behavioral intention, which in turn affects behavior. Behavioural intention describes the steps one takes to get ready to do something. As far as anyone can tell, it is the shortest way to decide what to do. According to the TRA, one's behavior is likely to be carried out if they have a strong intention to do so, provided that there are no significant barriers. As an example, individuals are more likely to maintain their fitness routine if they are surrounded by supportive environments.

### Methodology

The sources of this investigation were primary data. This study was also conducted using the cross-sectional method, which involved the immediate collection of data from individuals residing in the same demographic area. The research was conducted in three rural areas of Sungai Petani: Bujang, Merbok, and Semeling. The data collection procedure involves the distribution of questionnaires to the respondents. In this investigation, convenience sampling was implemented. Convenience sampling is the method of selecting respondents who are "convenient" for this research. Respondents are not recruited in a systematic manner. For instance, respondents may be individuals who are present in a public building, street, or workplace. Data was collected in three localities within the Kuala Muda district: Kampung Sungai Pial in Merbok, Kampung Sungai Layar in Semeling, and Kampung Bujang in Bujang.

### Conceptual Framework



**Figure 1: Conceptual Framework for Dependent and Independent Variables**

Using SPSS methods, the research investigates six main objectives as presented as follows:

RO1 To know the level of cashless payment among rural residents in Sungai Petani, Kedah.

RO2 To examine the relationship between social influence and cashless payment among Sungai Petani, Kedah.

RO3 To examine the relationship between perceived trust and cashless payment among rural residents in Sungai Petani, Kedah

RO4 To examine the relationship between facilitating conditions and cashless payment among rural residents in Sungai Petani, Kedah.

RO5 To examine the relationship between effort expectancy and cashless payment among rural residents in Sungai Petani, Kedah.

RO6 To examine the most influential factor contributing to cashless payment among rural residents in Sungai Petani, Kedah

The first objective of this research was to investigate the frequency of cashless payment practices. The Pearson correlation was used to investigate the relationships between variables for the second through fifth objectives. As for the last objective, multiple regression was used to determine the most important factors among the variables mentioned.

### Findings

**Table 1: Result of Descriptive Analysis**

<i>Item</i>	<i>Means</i>	<i>Std Deviation</i>	<i>Mean Score Range</i>
Cashless payment may depend on varying levels of IT Literacy	3.9917	0.76142	Moderate
I often use an online payment method	4.4250	0.58930	High
My available resources affect my use of cashless payment	4.1083	0.61897	High
My current payment method includes a traditional option	3.7333	0.80683	Moderate
I have been using a cashless payment method for quite some time	4.1833	0.72162	High
My use of cashless payment in daily life may change over time	4.1000	0.65337	High
E-wallets are frequently used nowadays	4.2417	0.73331	High
Cashless payment is part of how I manage daily transactions	4.2167	0.61060	High
Total Score	4.1250	0.68693	High

The results of Table 1 indicate that the mean value for the highest means is "I often use online payment methods" (4.4250), while the lowest mean is "My current payment method includes a traditional option" (3.7333). In general, the total mean of 4.1250 is within the high range, suggesting that the adoption of electronic payments among rural residents in Sungai Petani is high.

**Table 2: Result of Pearson Correlation Analysis**

<i>Variable</i>	<i>Pearson's Correlation</i>	<i>P-Value</i>	<i>Decision</i>
Social influence and cashless payment	0.530	0.001 (p<0.05)	Ha1 supported
Perceived of trust and cashless payment	0.612	0.001 (p<0.05)	Ha1 supported
Facilitating conditions and cashless payment	0.549	0.001 (p<0.05)	Ha1 supported
Effort expectancy and cashless payment	0.554	0.001 (p<0.05)	Ha1 supported

The correlation coefficients in Table 2 demonstrate that Pearson's correlation was statistically significant, with values ranging from  $r = 0.530$  to  $0.612$  ( $p < 0.05$ ). This suggests a robust and advantageous correlation between the adoption of digital payment and social influence, perceived trust, facilitating conditions, and effort expectancy.

**Table 3: Result of Multiple Regression Analysis**

<i>Variable</i>	<i>Standardized Coefficient Beta</i>	<i>Significant</i>	<i>Decision</i>
Total perceived trust	0.276	0.033. $p < 0.05$ (sig)	Based on the Beta value, perceived trust is the most influential factor for the adoption of cashless payment among rural residents in Sungai Petani.
Total of social influence	0.259	0.002. $p < 0.05$ (sig)	
Total of facilitating conditions	0.185	0.073. $p > 0.05$ (no sig)	
Total effort expectancy	0.077	0.519. $p > 0.05$ (no sig)	

The results of the multiple regression analysis are presented in Table 3, which indicates that the adoption of contactless payment methods among rural residents in Sungai Petani was most significantly influenced by perceived trust. This conclusion is derived from the highest standardized beta value for perceived trust (0.276), social influence (0.259), facilitating condition (0.185), and effort expectancy (0.077).

### Discussion And Conclusion

The research objectives were aligned with the findings in this section. The discussion will be further enriched by incorporating pertinent literature and insights from prior investigations.

The initial research objective is to determine the extent to which factors influence the adoption of electronic payments among rural residents in Sungai Petani. Fishbein and Ajzen (1975) introduced the TRA, which serves as the foundation for this investigation. TRA elucidates that an individual's behavior is primarily determined by their intention, which is influenced by two primary components: subjective norms and attitude toward the behavior. In the context of this

study, the intention to adopt the system will be increased if a rural user has a positive attitude toward cashless payment, such as the belief that it is secure and convenient, and if they experience social pressure or encouragement from others, such as subjective norms. The results of this investigation suggest that rural residents in Sungai Petani have attained a moderate to high level of preparedness to implement electronic payment methods. The positive trajectory of digital adoption is evidenced by the high levels of trust and perceived benefits, as well as the supportive infrastructure and exposure provided by national policies. However, it is still necessary to enhance digital literacy, user-friendly interfaces, and social encouragement to guarantee that contactless payment becomes a widely accepted norm throughout all tiers of rural society.

The second goal of this research is to investigate the relationship between perceived trust and the use of cashless payment options among rural residents. Trust is typically characterized as "the belief that the trusted party will behave in a dependable, ethical, and socially appropriate manner" (Mayer et al., 1995). In the context of financial technology, trust refers to consumer confidence in the system's security, dependability, and privacy, as well as trust in institutional providers such as banks, e-wallet platforms, and government regulators. The TRA, proposed by Fishbein and Ajzen (1975), states that an individual's behavioral intention is influenced by their attitude toward the conduct and subjective norms. In this environment, when people feel strong trust in cashless systems, their attitude improves, enhancing the possibility of adoption. The findings indicate a strong positive association between perceived trust and the adoption of cashless payment among rural inhabitants. Respondents stated that they were more likely to adopt cashless systems when they were confident in the confidentiality of their financial data, the integrity of transactions, and the dependability of service providers. National trends and current news indicate an increase in public trust in cashless payment services. According to Bank Negara Malaysia's Financial Stability Review (2023), the number of e-payment transactions in Malaysia has climbed by more than 30%, with rural participation growing steadily, thanks in part to government outreach programs. The eBeliaRahmah program, which was implemented in Budget 2023, awarded youngsters with RM200 in e-wallet credits, indirectly improving trust and adoption of cashless systems. Furthermore, the Malaysian government's Digital Economy Blueprint (MyDIGITAL) promotes the creation of a secure digital infrastructure, which increases institutional trust among users.

The third objective of this study was to investigate the correlation between the adoption of contactless payment among rural residents in Sungai Petani and social influence. Social influence is the degree to which individuals believe that significant individuals in their lives, such as family members, acquaintances, or community leaders, recommend that they utilize a specific technology (Venkatesh et al., 2003). The results indicated that the adoption of electronic payments was moderately influenced by social influence. Numerous respondents concurred that their decision to experiment with or maintain their use of cashless methods was influenced by encouragement from peers, family members, or local authority figures (such as village heads or small business owners). This is consistent with the findings of Sharma and Sharma (2019), who discovered that the influence of family and colleagues was particularly significant in introducing older or less tech-savvy individuals to digital finance tools in rural India. In the same vein, a study conducted in Malaysia by Chuah et al. (2020) demonstrated that the likelihood of adoption was significantly increased in tight-knit communities by word-of-mouth recommendations and observing others using digital payments. Additionally, recent developments in Malaysia demonstrate the potential for public initiatives to influence social behavior. For example, the Ministry of Finance and local banks and e-wallet providers

supported campaigns under the Cashless Kampung program. This actively promoted digital payments through community-based events, training, and even "cashless stalls" in rural night markets. Moreover, these initiatives foster a social atmosphere that normalizes the use of electronic payments, in addition to offering exposure. Influencers and small rural business owners have also shared positive experiences with platforms such as Touch 'n Go eWallet and DuitNow on social media, indirectly influencing public opinion and behavior. Many individuals in rural communities continue to favor currency due to their familiarity with it and their lack of comprehension regarding digital wallets, as per Gupta and Arora (2020). However, they may develop a greater sense of assurance to experiment with cashless methods when they observe others in their vicinity effectively utilizing them, particularly those they regard as trustworthy. In summary, this investigation demonstrates that rural consumers are significantly motivated to implement digital payment methods by social influence. In order to further increase the adoption of these digital services, it would be beneficial to engage local influencers, family networks, and even social media in order to increase awareness and encourage more individuals to feel comfortable using them.

The fourth objective is to ascertain the correlation between the adoption of contactless payment among rural residents in Sungai Petani and the facilitating conditions. The extent to which individuals believe in the availability of essential infrastructure, resources, and support for utilizing a specific technology is referred to as the facilitating condition (Venkatesh et al., 2003). Users' confidence in the adoption of digital financial systems is bolstered by resilient facilitating conditions, such as dependable internet and user-friendly technology, as per Oliveira et al. (2016). In the same issue, Ramayah et al. (2020) noted that the adoption of mobile payment systems in rural Malaysian communities increases when they receive adequate training and support from government entities or service providers. In addition, Azmi and Rahim (2021) found that the likelihood of rural Malaysians adopting digital payment methods is increased when there is community-based support and application simplification involved. The development of digital infrastructure as part of the National Digital Economy Blueprint (MyDIGITAL) and government initiatives such as eBelia have improved access to electronic systems in rural areas. Therefore, the facilitating condition is a critical factor that can contribute to the increased adoption of digital payment methods among rural populations.

The fifth research objective is to ascertain the correlation between the adoption of electronic payment among rural residents in Sungai Petani and effort expectancy. Venkatesh et al. (2003) defined effort expectancy as the ease with which technology can be utilized. This pertains to cashless payments and includes the simplicity of utilizing mobile payment applications, traversing the interface, and conducting transactions without any confusion. Users are more likely to employ a system that they perceive as straightforward and uncomplicated. In Malaysia, Tan et al. (2014) observed that the probability of consumers utilizing mobile payment services increases when the applications are simple and do not require frequent technical assistance. The adoption rates of systems that are simple to operate and learn can be substantially increased for rural users in Sungai Petani, particularly when their interfaces are in Bahasa Malaysia. It is imperative to ensure that contactless payment systems are user-friendly and that they can be operated with minimal effort in order to encourage their adoption in rural communities.

The ultimate goal of this investigation is to determine the most significant factor that influences the adoption of digital payment methods among rural residents in Sungai Petani. In order to resolve this issue, multiple regression analysis was implemented. The findings, as illustrated in

Table 3, indicate that the adoption of contactless payment is most significantly influenced by perceived trust. Perceived trust is the conviction that a system is capable of protecting personal and financial information, as well as its security and reliability (Gefen et al., 2003). This incorporates the platform's reliability, fraud deterrence, and trust in privacy measures in the context of cashless payments. Trust is particularly critical in rural areas, where users have limited digital exposure and heightened concerns about technology (Aji et al., 2020; Shin, 2009). In order to encourage the adoption of cashless payments in rural areas, it is imperative to prioritize the establishment of public trust by educating users, instituting robust data protection measures, and ensuring transparency.

The objective of this investigation was to investigate the factors that motivate rural residents in Sungai Petani to employ cashless payment methods. It is crucial to guarantee that rural communities are not neglected during the transition to a digital economy as Malaysia advances. This research offers some insight into the thoughts and emotions of individuals in rural areas regarding the use of digital payments by concentrating on critical factors such as perceived trust, social influence, effort expectancy, and facilitating conditions. The study was founded on the TRA, which elucidates the ways in which individuals' conduct is influenced by their own attitudes and the influence of those in their vicinity. The findings indicated that the adoption of contactless payments was most strongly correlated with perceived trust and facilitating conditions. This implies that individuals are considerably more inclined to employ the system when they have confidence in it and perceive that the requisite assistance and accessibility are readily available. Positive relationships were also observed between social influence and effort expectancy. However, they were not as robust. Therefore, although encouragement from others and ease of use are essential, they may not be the most critical factors for rural users.

What is intriguing is that the results indicate that individuals are becoming more receptive to new technology, particularly when they are provided with appropriate support and guidance, despite the fact that rural areas are sometimes perceived as being sluggish to adopt. The government has implemented programs that have generated awareness and gradually established trust, in conjunction with the government's efforts and local banks. This demonstrates that rural communities can acclimate to digital payment systems in the same way as urban areas with the appropriate amount of encouragement. In general, this investigation has succeeded in its objectives and has contributed to the illumination of the genuine circumstances in rural Sungai Petani. The results may be beneficial to individuals who are interested in implementing more effective strategies to encourage digital payments in comparable regions. In order to ensure that all individuals, irrespective of their location, can participate in Malaysia's digital future with confidence, it is imperative that increased emphasis be placed on the development of trust, the facilitation of system usage, and the reinforcement of community-based support.

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**Ethics Statement:** This study was conducted in accordance with ethical research standards. All procedures involving human participants were reviewed and approved by the **Ethics Approval Application Form for Undergraduates**, Approval Letter **ERC/35/2025(ST/MR/17)**. Informed consent was obtained from all participants prior to data collection. Participation was voluntary, and respondents were assured of confidentiality and anonymity. The data collected were used solely for academic purposes.

**Author Contribution Statement:** All authors contributed significantly to the development of this manuscript. [Author 1] was responsible for the conceptualization, methodology, and overall supervision of the study. [Author 2] handled data collection, analysis, and interpretation of results. [Author 3] contributed to the literature review, drafting, and critical revision of the manuscript. All authors read and approved the final version of the manuscript before submission.

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