Fintech Innovation and Financial Inclusion: A Rural Malaysian Perspective

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ABSTRACT

This study investigates the role of fintech innovation in promoting financial inclusion among rural Malaysian populations. Using the Technology Acceptance Model (TAM) framework, the study examines how digital payment adoption, access to fintech credit solutions, and digital literacy influence behavioural intention to use fintech services, with perceived usefulness as a mediating variable. A quantitative approach was employed to analyse 330 valid responses from rural areas across Perak, rural Selangor, and Kelantan. Statistical analysis using SPSS and PLS-SEM revealed strong positive correlations between all independent variables and behavioural intention, with perceived usefulness demonstrating exceptional mediation effects. The model explains 78.8% of the variance in behavioural intention, exceeding typical technology acceptance studies. The findings indicate that successful fintech implementation in rural areas requires strategic focus on demonstrating tangible benefits, enhancing digital literacy, and establishing a robust payment infrastructure as gateway services. The study provides actionable insights for policymakers, financial institutions, and fintech developers seeking to enhance rural financial inclusion through technology-enabled solutions.

Keywords: FinTech, Rural financial inclusion, Technology Acceptance Model (TAM), Behavioural Intention, Digital Literacy, Digital Payment

INTRODUCTION

The global financial landscape has undergone profound transformation over the past decade, driven largely by technological innovation and changing consumer preferences (Gomber et al., 2017). Financial technology, commonly referred to as fintech, represents the integration of technology into financial services, enabling new business models, applications, processes, and products that have the potential to disrupt traditional financial markets (Arner et al., 2015). In Malaysian context, the fintech sector has experienced remarkable growth, with the number of fintech companies increasing from 96 in 2016 to over 313 by 2023 (Fintech Malaysia & Tranglo, 2023). Malaysia presents a unique case study for examining financial inclusion through the lens of fintech innovation. As an upper-middle-income country with a population of approximately 32.7 million, Malaysia has achieved significant economic progress, maintaining an average GDP growth rate of 4.55% between 2010 and 2023 (Macrotrends, 2025). However, this economic development has not been distributed evenly across the country's diverse geographic and demographic landscape.

Although Malaysia has made commendable progress in financial inclusion, a vast majority of people in the rural area are still by the wayside, hence the intention to use these alternative financial facilities are still ambiguous. The study examines three principal elements that might alter the situation. The initial aspect is the adoption of digital payments, encompassing mobile banking and e-wallets. Despite their prevalent use in urban areas, they are uncommon in rural regions due to a deficiency of trust or comprehension (Wu & Peng, 2024). Secondly, it offers access to fintech credit alternatives, such as peer-to-peer lending and microloans, which assist small enterprises or individuals in rural regions in obtaining credit when traditional banks are unable to supply it (Datta, 2024). Digital literacy constitutes the third element, indicating individuals' proficiency in utilizing these technologies and their comfort in employing them (Odei-Appiah et al., 2022). This study seeks to harness the

knowledge on how these three factors affect financial inclusion among distinct parts of Malaysia, to provide useful insights that can help reduce the gap and eventually promote the availability of these digital means to everyone. It will also provide actionable insights and guidelines to help Malaysian fintech firms enhance their solutions to cater to the needs of the rural population whilst reinforcing financial inclusion in Malaysia.

The Malaysian government has recognized these challenges and has implemented various initiatives to promote financial inclusion. Bank Negara Malaysia's Financial Sector Blueprint 2022 -2026 explicitly emphasizes digitalization and financial inclusion as key strategic priorities (Bank Negara Malaysia, 2022). Additionally, the Malaysia Digital Economy Blueprint (MyDIGITAL) outlines a comprehensive approach to accelerate digital financial services adoption across all segments of society (MyDIGITAL, 2025). Despite these policy initiatives, the practical implementation of fintech solutions requires a deeper understanding of the specific barriers, enablers, and potential impact pathways. This research therefore aims to contribute to this understanding.

PROBLEM STATEMENT

Despite Malaysia's impressive macroeconomic growth and overall progress in financial inclusion, a significant disparity persists in access to and usage of financial services especially in rural populations. According to (Bank Negara Malaysia, 2022), while urban financial inclusion rates exceed 90%, rural areas lag with rates as low as 67% in certain states, particularly in East Malaysia and the eastern cost of Peninsular Malaysia. This financial divide represents a critical challenge to Malaysia's inclusive development goals and contributes to broader socioeconomic inequalities (Iman, 2020). The problem is multifaceted and comprises several interconnected dimensions. First, physical banking infrastructure remains unevenly distributed, with rural areas having 58% fewer bank branches per capita compared to urban centres (FATF, 2022). Second, digital connectivity a prerequisite for fintech adoption, varies significantly across regions with rural broadband penetration rates averaging 67.3% compared to 94.7% in urban areas (Malaysian Communications and Multimedia Commission, 2022). Third, lower financial and digital literacy levels in rural communities create additional barriers to fintech adoption (Hasan et al., 2023).

While fintech innovations offer promising solutions to overcome these barriers, evidence suggest that their benefits have not been equitably distributed especially in rural communities, where awareness and access to digital financial services are still low. Several barriers, including poor internet infrastructure, cybersecurity issues and low trust in digital platforms, exist between rural populations. (Seman, 2023) found that fintech adoption rates in rural Malaysia are approximately 35% lower than in urban areas. This indicates that additional factors beyond basic infrastructure are influencing the fintech divide. Furthermore, most existing research on fintech and financial inclusion in Malaysia has predominantly focused on urban population or treated the country as a homogenous market, overlooking the unique challenges and opportunities within rural communities (Bakar et al., 2017). This research gaps limit the development of targeted interventions and policies that could effectively address the specific needs of underserved rural populations. The problem is particularly urgent given Malaysia's ambition to achieve inclusive economic growth and high-income status. Without addressing this financial divide, the country risks exacerbating existing inequalities as financial systems become increasingly digitalized.

The Global Entrepreneurship Monitor (Kelley D.J., 2017), (Hiew et al., 2024) and GEM 2018 (JIE, 2024) further show how poor fintech literacy could create obstacles in adopting digital wallet and mobile banking solutions. People in rural space are not digitally prepared and able to understand fintech tools and the lack of knowledge to use them results in hesitance due to fear of technical difficulties and possible frauds.

Despite the presence of fintech credit options such as peer-to-peer lending and micro-financing, rural users do not have the digital literacy to effectively make use of these services (Abdullah & Hisamudin, 2024; Odei-Appiah et al., 2022). Furthermore, regulatory barriers also exist in terms of many rural residents lacking formal documentation (identity verification) which constrains their access to fintech services (Hossain et al., 2024; Zainal et al., 2024). Some local studies recognize the potential fintech has in promoting financial inclusion but are mostly focusing on the urban population. For instance, (Ahmad et al. 2023) studied that fintech helps in enhancing banking efficiency; however, its benefits are restricted to city areas.

However, (Hossain et al. 2024) discussed adoption of fintech across regions in general but did not focus much on rural areas. Similarly, (Ahmed et al., 2023) discussed the significance of the big data in fintech but did not state the rural financial accessibility. According to (Akmar 2020), Islamic fintech in Malaysia is not innovative because of its regulatory constraint and unawareness of the customers.

According to (Liew et al., 2020), their study discovered that rural Malaysians are often left out of the digital financial ecosystems as they are not confident enough to use technology. Likewise, (Siddik et al., 2023) pointed out that the use of mobile banking is increasingly high in urban Malaysia, but the adoption rate is still comparatively low in the rural areas, particularly with the older adults and those having less education. In addition, (Topimin & Mohd. Hashim, 2020) stated that micro businesses in rural Sabah face problems accessing digital platforms for credit as they lack digital literacy and inaccessibility of internet coverage.

However, there has been no research that gives a complete view of how the adoption of digital payment, fintech credit solutions, and digital literacy have together affected financial inclusion in Malaysia's rural area. These relationships are lacking empirical data in the local context. This study attempts to fill that gap by exploring the potential of fintech innovation to increase rural financial inclusion. The findings hold practical implications for policy makers, fintech firms and financial institutions to devise tailored strategies for promoting the wider and more inclusive adoption of fintech services in rural areas of Malaysia.This study therefore seeks to address these gaps by systematically investigating how fintech innovations can be effectively leveraged to bridge the financial divide especially in rural Malaysia.

A. Scope of Study

The emphasis of this study is the effect of digital adoption of payments, fintech credit solutions, and digital literacy in rural Malaysia. The research is restricted to (3) three Malaysia States in the rural areas of Perak, Selangor, and Kelantan. The study's target is drawn from individuals who have access to or are capable of embracing fintech services. Furthermore, the study uses a quantitative survey approach that emphasizes user perception and adoption behaviours without delving into the technical and infrastructural aspects of fintech development. Findings will be in Malaysia's rural patterns of fintech adoption and may not be directly generalizable to other countries or regions.

B. Significance of Study

The study provides policymakers with insights on what are the main barriers to rural fintech adoption, including digital illiteracy, regulatory restraints, and lack of trust. By understanding these challenges, policymakers can then utilize and update policies for targeted communities, provide better digital infrastructure and use financial education programs to include more people into the financial services in the underserved areas.

The factors influencing rural population's fintech adoption will be identified for fintech service providers and financial institutions to create solutions that are more accessible and user friendly to target users. These findings will assist fintech companies in making strategic and customer outlook improvements as well as gaining trust by offering secure and reliable financial solutions and help financial institutions to bring in intuitional financial products like micro loans and digital banking services catering to the rural communities. The aim is to identify how fintech solutions can enable better financial access, increase efficiency of small rural businesses, and move towards cashless transactions in these areas. Small entrepreneurs can develop their businesses, better manage finances, and have access to different funding sources by increasing awareness of digital payment systems and fintech credit solutions.

The study contributes empirical evidence from Malaysia's rural areas for researchers and academics to the current body of knowledge of fintech adoption and financial inclusion. In connection with this, digital literacy and trust factors are integrated with fintech adoption models to extend the understanding of digital finance and provide a reference for future research related to financial technology, economic development, and inclusive finance. These findings hold practical implications for policy makers, fintech firms and financial institutions to devise tailored strategies for promoting the wider and more inclusive adoption of fintech services in Malaysia.

C. Research Objectives

The objectives of this study are as stated below:

RO1: To explore the relationship between digital payment adoption and behavioural intention to use fintech services across rural community in Malaysia

RO2: To examine how access to financial technology credit solutions influences the behavioural intention to use fintech services across rural community

RO3: To investigate the extent to which digital literacy influences the behavioural intention to use fintech services across rural community"

RO4: To investigate the mediating role of Perceived Usefulness (PU) in the relationship between our three independent variables digital payment adoption, access to fintech credit solutions, digital literacy, and our dependent variable behavioural intention to use fintech services across rural community in Malaysia.

D. Research Questions

Based upon the research objectives above, the following research questions will be addressed in this study.

RQ1: How does digital payment adoption influence the behavioural intention to use fintech services in rural areas of Malaysia?

RQ2: How does access to fintech credit solutions influence the behavioural intention to use fintech services in rural areas of Malaysia?

RQ3: How does digital literacy influence the behavioural intention to use fintech services in rural areas of Malaysia?

RQ4: How does perceived usefulness mediate the relationship between digital payment adoption, access to fintech credit solutions, digital literacy, and behavioural intention to use fintech services in rural areas of Malaysia?

UNDERPINNING THEORY

The study is based on these ideas from the Technology Acceptance Model (TAM) to explain how users will decide to adopt modern technology through two critical factors, Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). In this case, this theory allows us to study user behaviour towards digital payments, fintech credit services, and digital literacy where the core propositions and their applicability to the Malaysian context will be examined.

CONCEPTUAL FRAMEWORK

The conceptual framework illustrates the relationship between the three key independent variables which are digital payment adoption, fintech credit solutions, and digital literacy, dependent variable behavioural intention to use fintech through the mediating role of perceived usefulness. Presuming that digital payment methods are more accessible, alternative credit solutions are practical, and individuals are sufficiently proficient in technology, we recommend that they embrace and utilize fintech services. It is posited that all these factors exert a substantial and direct influence on behavioural intention (H1, H2, H3), providing a systematic framework to comprehend how these elements affect fintech adoption in Malaysia.

LITERATURE REVIEW

Behavioural Intention to Use Fintech Services represent a critical construct in understanding the adoption of financial technology innovations, particularly within the context of financial inclusion initiatives in Malaysia. In the rapidly evolving fintech landscape of Malaysia, understanding the factors that drive behavioural intention is essential for financial inclusion (Saadah & Setiawan, 2024). Malaysia presents a unique case study for examining

fintech adoption intention due to its dual economic structure featuring developed urban centres alongside less-connected rural communities as well as its government-led initiatives to promote digital financial inclusion as outlined in the Malaysian Digital Economy Blueprint (Economic Planning Unit, 2021). According to (Bajunaied et al. 2023) and (Amnas et al. 2023), behavioural intention consistently explains between 40% and 60% of the variance in actual technology usage behaviour across diverse technological contexts, including fintech adoptions. The importance of behavioural intention as a dependent variable in fintech research stems from both theoretical and practical considerations. Theoretically, it enables research to test and validate technology adoption models within the unique context of financial services (Hu et al., 2019). Practically, understanding the factors that influence behavioural intention guides the design of interventions aimed at increasing fintech adoption, particularly in underserved communities (Iman, 2018).

(Bajunaied et al., 2023) extended TAM by adding privacy enablers and privacy inhibitors in a study of 361 fintech users in Saudi Arabia and found that while PU and PEOU were still significant in predicting BI, privacy enablers (i.e., users' belief that their financial and personal information is secure) played a crucial role in determining users' behavioural intention. However, social influence and privacy concerns did not play a substantial role in adoption. Meaning, in fintech contexts, rational evaluations of utility and security were stronger drivers than social persuasion.

Another study by (Yuhelmi et al., 2024) proposed additional constructs such as habit, trust, and perceived risk and added them to an extended TAM framework in a 2024 study on millennials. Habits positively influenced behavioural intention, but surprisingly, perceived risk and trust did not have this effect. It may be that the younger users, especially the digital natives, have become used to using fintech and may not consider risk or trust as a decision barrier. Perceived risk and lack of trust play a huge role in the rural or older populations, making them huge inhibitors to adoption, indicating a digital generational divide.

Digital literacy and access to infrastructure are deeply intertwined with behavioural intention, especially in developing or unevenly developing areas. Among Indian youth, digital skills and quality of internet access significantly moderated the attitude, perceived control, and behavioural intention to use fintech, on this relationship (Ravi & Pandey, 2024). Users' intention to use fintech was weakened even when they had a positive attitude towards fintech, if they did not have good internet access or limited digital fluency. This finding is highly relevant as rural populations may have positive views of fintech but do not have the infrastructure or skills to convert the intention to action.

E. Digital Payment Adoption (DPA)

Digital payment adoption refers to the degree to which individuals have incorporated digital payment methods including mobile wallets, online banking transfers, QR code payment and contactless transactions into their financial activities (Purohit et al., 2022). It represents both the intentional acceptance and continued usage of these payment technologies across various transaction contexts. Digital payment systems, in the ambit of fintech and financial inclusion, are more than convenient tools, but as enablers of participation in the economy, mostly in the more underserved parts of Malaysia. Given the growing interest in what is driving the digital payment adoption of users, the accelerating digital economies created by technological innovation and supporting policies globally, has generated new interest in what drives uptake of the ability to pay online. Perceived usefulness, ease of use, trust and security are repeatedly found in empirical research as the essential factors to predict digital payment championing. For instance, in their study on microenterprises, (Purwantini & Anisa 2021) discovered that microbusinesses' intention to adopt fintech payment technologies, such as e-money and e-wallets, was influenced by trust and perceived usefulness. It is interesting to note that perceived risk, a barrier as obtained by previous studies, was found to be an enabler. This means that users with a higher degree of perceived risks might also be more cautious and presumably more involved and are likely to adopt the engagement if appropriate for safeguarding are there.

Digital literacy is another influential determinant which mediates the relationship between perceived ease of use and actual adoption. (Mulyono et al. 2024) mentioned in the ICCIT Conference 2024 that ease of use by itself did not significantly affect e-wallet usage intention, but it did when mediated by users' digital literacy levels. This finding is especially important in rural areas where digital literacy is rarely well established and deploying

technology is equally important as providing education. From emerging economies, security concerns remain the biggest barrier (Thapar & Marwah, 2024) found in their study that apart from usefulness and ease, trust and information security also play a significant role in adopting mobile payment in India.

Similar conclusions were observed in other regional studies, namely those of (Trianto et al. 2025) which investigated digital payment adoption in Indonesia and Malaysia. Their work suggests that Malaysian micro-entrepreneurs had been more advanced, in adopting e-wallets and ATM based payments, than QR code-based payment systems, as they lacked technical knowledge and did not trust the reliability of the platform. The adoption rates are also influenced by cultural values and generational preferences. A comparative study of Gen Z and Gen Y users in Malaysia and Indonesia was conducted by (Urus, et al. 2022) and it was found that performance expectancy and cultural dimensions (e.g., individualism) significantly influence the adoption behaviour. According to their findings, a one size fits all policy for digital payment promotion is unlikely to work, and cultural and demographically tailored approaches are better.

In addition, digital payment adoption also provides immediate benefits for business performance, particularly by micro and small enterprises. (Dangkeng & Munir 2025) studied the effect of adoption of digital payment system toward small entrepreneurs and found that during 2025, their cash flow, access to credit, and customer base were improved when they integrated digital payment systems into their businesses. While the benefits cited above can be widespread across the globe, there would need to be some removal of barriers, such as low infrastructure reach, cybersecurity risks, and low fintech literacy.

F. Access to Fintech Credit Solutions (AFCS)

Credit access is still a cornerstone of financial inclusion when it comes to individuals and micro, small and medium enterprises (MSMEs) commonly excluded from mainstream financial institutions. Over the recent years, fintech credit solutions like digital lending platforms, peer to peer (P2P) lending, mobile micro-loans and algorithmic credit scoring have become a powerful vehicle for financial access democratization. They have also turned in their head certain rigidity that exists. These barriers are mostly affecting small-scale businesses to have access to credit such as collateral, physical access, high transaction costs, and exclusion of those with no formal credit history.

Using non-traditional data, for example mobile phone usage, social media behaviour, utility payments, and e-commerce transactions to assess creditworthiness, is one of the most transformative aspects of fintech credit. Where traditional banks tend to lean on recorded income and collateral, fintech lenders on the other hand rely on machine learning algorithms and real time behavioural analytics to create alternative credit scores. (Bazarbash, 2019) states that this innovation enables lenders to assess borrowers' credit risk much more accurately and inclusively in regions with limited access to formal financial infrastructure. Dynamic personalized and predictive lending decisions are devices incorporated into these algorithmic models; thus, they allow for faster approval processes and lower default rates.

However, it has been notable in the emerging economies that digital lending ecosystems have seen their expansion. In India, Kenyans pay bills through the platform M-Pesa and for accessing microcredit such as Paytm, while in India they use the same method. (Gupta, 2024) documents that such models have avoided legacy banking systems by directly connecting borrowers to capital through mobile platforms and are therefore quicker and less costly in processing. Key to these systems is that they are particularly good for rural communities, informal workers and women entrepreneurs who are often faced with structural barriers to accessing formal financial services.

(Finkelstein-Shapiro et al. 2022) show theoretically that small firms' adoption of fintech credit increases aggregate output, reduces output volatility, and improves domestic financial shock resilience on the macro level. Nevertheless, they point out that though fintech lending, a firm's credit access increases and contributes to their financial inclusion that heretofore excludes them from formal finance. Entry of fintechs in the lending space in a rapid manner can also lead to volatility in the banking sector, hence a need for a coordinated regulatory framework.

Studies that look at fintech adoption among microenterprises in the Malaysian context show the progress however there remain gaps. According to (Trianto et al. 2025), although Malaysian micro-entrepreneurs are advanced in the adoption of digital payment system, access to fintech based credit is not even, the use of QR code lending and digital microfinance service is not commonly used in rural areas. These reasons are based on the lack of digital literacy, trust in online credit platforms, and ignorance about non-bank credit options. This indicates that there is a need for targeted outreach and education efforts to enhance the access and trust in fintech credit instruments for Malaysia's rural populations.

The effectiveness of fintech credit is equally dependent on trust, regulatory support, and its integration into the broader financial ecosystem. Also, according to (Singh & Sharma, 2023), access to digital platforms will not suffice without building user confidence in such digital platforms. To protect consumers from predatory lending and online fraud, the safeguards, laws, and mechanisms for dispute resolution must be strengthened at the regulatory end. At the same time, (Dwivedi & Srivastav 2024) highlight that in even the high growth fintech markets, credit is not available to those with low income or limited digital literacy unless the platforms are created based on simplicity, transparency, and affordability.

Interestingly, this fintech credit revolution does not resonate with the tone of all scholars' optimism. However, (Bernards 2019) takes a more cautionary view, stating that if psychometric and AI scoring systems are not appropriately monitored, they can perpetuate existing inequalities. Warning of the abstraction of human lives into credit metrics, and of a bias reproduction, marginalization of users with unsteady incomes therefore solidifying the socioeconomic stratification. Hence access to fintech credit should be accompanied by ethical algorithm design, inclusive policy oversight, and participatory platform development to have a developmental instead of exploitative aim.

The policy level is where public private partnership plays a crucial role in responsibly scaling fintech credit. (Babai 2024) discovered that fintech enabled lending, combined with government backed guarantee schemes, helped pull in a lot of credit uptake amongst rural population. Particularly those supporting MSMEs, farmers and informal workers, programs that have this linkage with the national financial inclusion strategy are likely to deliver equitable and scalable outcomes.

Access to fintech credit solutions therefore encompasses the availability, awareness, and utilization of technology-enabled lending platforms, including P2P lending, digital microfinance, supply chain financing, and alternative credit scoring services (Bank Negara Malaysia, 2022). It extends beyond mere physical accessibility to include psychological accessibility, referring to individuals' perception that these services are obtainable and appropriate to the needs of the user. In Malaysia, fintech credit solutions have grown rapidly, with the alternative financing market reaching RM 1.14 billion in 2022, representing a five-fold increase from 2018 (SEC, 2023).

G. Digital Literacy (DL)

Digital literacy is the foundational capabilities required to interact with fintech platforms. Digital literacy means more than just the technical ability to use technology and apps. It also means the ability to evaluate, interpret, and manage digital information, especially when managing money. In the context of fintech adoption especially among rural communities in Malaysia, digital literacy is a gateway and a barrier. A gate to opportunities to access, trust and benefit from fintech solutions or a barrier for these opportunities to be blocked off.

(Mulyono et al. 2024) found that perceived ease of use alone cannot encourage fintech adoption, but digital literacy is an essential mediating variable. As for users with low digital literacy, their ease-of-use perceptions were not transformed into usage intentions in their study on e-wallets. This emphasizes the importance of investing in basic digital education to complement fintech deployment in rural and semi-urban areas.

This view is further supported by (Islam, & Khan 2024) who have found a statistically significant and positive relationship between digital literacy and fintech adoption in Bangladesh where digital literacy shares a sizable portion of variance on adoption behaviour. However, the effect was particularly pronounced if financial self-efficacy was also present in individuals who were not just digitally savvy but also held confidence in their financial decision making resulting a higher tendency to take up fintech solutions.

Digital literacy acts also as a mediator of broader socio-economic outcomes. The analysis of the relationship between financial literacy, digital literacy, the use of fintech and the quality of life was conducted by (Kakinuma 2022). The study found that fintech adoption provided a pathway between digital literacy and better well-being, as users felt they had more control over their finances and anxiety regarding their finances decreased. Given these findings, digital tools can play a vital role in financial inclusion disparities in Malaysia not only financially, but holistically if used effectively by the users.

(Adhikari et al. 2024) demonstrated through a study in Nepal's Kathmandu Valley that digital financial literacy fully mediates relationships between fintech trust and service adoption. UTAUT and value-based models were used to conclude that even when services are seen as secure and useful, lack of digital knowledge can hinder utilization. This has clear ramifications for fintech providers in Malaysia where trust in formal tool is there, but digital abilities are low in rural and older populations.

In addition, digital literacy empowers women and marginalized communities. According to (Mahat 2024), low digital literacy among working women in North Karnataka had severely restricted fintech adoption, even though financial literacy was moderate. The study suggests that digital training should be gender-specific to bridge fintech usage gaps. In the Malaysian rural female population, this insight can be extended to such that despite the growing availability of fintech, cultural and educational disparities may prevent adoption.

(Golden & Cordie 2022) also mention that digital financial literacy is the combination of the ability to use digital tools and the ability to apply financial knowledge to online contexts. The skills suggested by this compound are just as important as standard literacy or numeracy in the current digital economy. Integration of such types of competences within the formal and informal education systems could promote more inclusive and equitable growth of fintech.

These findings indicate the need for multi-stakeholder strategies involving fintech providers, governments, and educational institutions on a practical level. For widespread adoption, the organizations needed to offer training programs and digital literacy campaigns alongside apps equipped with voice assistants, local languages, and are easily navigable without texts and high illiteracy levels. In addition, as (Abbas & Khan 2024) claim, digital trust is closely related with digital competence, and in cases where individuals can comprehend how these technologies function, they are more likely to continue using them without fear, as a result of which adoption is facilitated.

Digital literacy comprises the knowledge, skills, and confidence required to effectively engage with digital financial technologies, along with awareness of available fintech services and their potential benefits. It extends beyond basic technological competence to include financial literacy components specific to the digital environment, such as understanding digital financial risks, privacy implications, and consumer protection. In Malaysia, digital literacy demonstrates significant variation across demographic and geographic segments. The Malaysian Digital Literacy Survey (Malaysian Communications and Multimedia Commission, 2022) revealed a disparity between rural and urban populations as well as among older adults and low-income groups, creating a multidimensional digital divide that insects with geographical locations.

H. The Mediation Role of Perceived Usefulness (PU) towards the BIU and the independent variables

Digital payment adoption (DPA) serves as a gateway experience for rural users. When people use e-wallets or mobile banking, they discover practical benefits firsthand. This hands-on experience shapes how useful they think fintech services are. This relationship works in two stages: First, digital payment users notice specific advantages. They save time by avoiding trips to physical banks. They complete transactions faster than traditional methods. They access services even in remote areas with limited banking structures (Wu & Peng, 2024). These real experiences create a positive perception about fintech usefulness.

Second, these usefulness perceptions drive behavioural intentions. Users who find digital payments valuable would want to explore more fintech services. The relationship is supposed to be positive and moderately strong. This study aims to evidence that payment adoption influences behavioural intention to use fintech services in a rural Malaysian context. The mediating effect explains why mere access to digital payment is insufficient. Users

must recognize and value the benefits before they develop a strong intention to adopt. Without perceiving usefulness, even experienced digital payment users may not expand their fintech usage (Chen et al., 2024).

Fintech credit solutions (AFCS) offer a unique value proposition to rural users. These platforms provide faster loan approvals than traditional banks. They require less paperwork and fewer physical visits and can serve customers who lack conventional collateral (Beaumont et al., 2022). The path of behavioural intention (BI) follows a clear pattern. First, users experience or learn about the benefits of fintech credit. They understand how peer-to-peer lending works and see how digital microloans help small businesses. They recognize the convenience of applying for credit through mobile apps (Ismanto et al., 2023). This awareness builds perceived usefulness and may motivate future adoptions. Users who value fintech credit advantages will develop stronger intentions to use these services. Mediation helps explain the adoption of barriers. Even when fintech credit is available, users need to understand its practical benefits. Rural populations may have access but lack the awareness of how these services may solve their specific financial challenges (Setiawan et al., 2021).

Digital literacy (DL) creates the foundation for recognizing fintech value. Literate users understand how technology works. They navigate apps confidently. They troubleshoot their basic problems independently. This competence helps them to discover and appreciate fintech benefits (Mulyono et al., 2024). The influence pathway of this relation has distinct stages. First, digital literacy enables users to explore fintech features effectively. They develop an understanding of security measures. They compare different service options available. They recognize how fintech solves traditional banking limitations (Islam, & Khan, 2024). This understanding is meant to directly shape usefulness perceptions. Subsequently, these perceptions translate into adoption intentions. Users who grasp fintech's practical value through their digital skills are supposed to show stronger behavioural intentions. The mediation effect shall reveal an important insight. Technical skills alone will not guarantee adoption. Users must translate their digital competence into understanding specific fintech benefits. Therefore, training programs should focus not just on technical skills but on demonstrating practical value (Adhikari et al., 2024).

MATERIALS AND METHODS

Quantitative research design has been used for the scope of this paper, examines the relationships between the variables, namely digital payment adoption (DPA), access to fintech credit services (AFCS), and digital literacy (DL) with the behavioural intention to use (BI) with perceived usefulness (PU) as a mediating variable. This quantitative approach offers several advantages for this study, including the capability of testing hypnotized relationships with statistical precision. The target population for this study constitute adult Malaysian residents aged 18 years and above who are potential or existing users of financial services in some rural areas of Perak, Selangor, and Kelantan. This population selection is grounded in both theoretical considerations and practical research needs for fintech innovation and financial inclusion. Most rural populations are distributed across various states with notable concentration in Kelantan, Terengganu, Perak, Sabah, and Sarawak (DOSH, 2024). Considering the availability of demographic data and distinct population as shown above, the population can be considered as known for the objective of this study.

However, several challenges are associated with accessing this diverse population. Rural residents in Malaysia, particularly in remote areas present logistical challenges for data collection. Second, elderly individuals and those with limited educational attainment may require assistance with research instruments. Third, language diversity may necessitate multi-language research instruments, as the population includes speakers of Bahasa Melayu, Chinese dialects, Tamil, indigenous languages, and English at varying proficiency levels. Cochran formula as well as Krejcie & Morgan table, the most popular statistical tools, were used to calculate the sample size and verify it. On a 95% confidence level, 5 percent margin of error at an assumed population proportion (p) of 0.5, the minimum sample size was 384 respondents. This sample is statistically adequate to generate a generalizable outcome of large population in the rural areas. A probability sampling method will be used to conduct the study by using Simple Random Sampling (SRS), which establishes an equal probability of subjects being selected in the population. The source of data is obtained from the below sources:

1. The 2020 Population and Housing Census of Malaysia (DOSH, 2021) provides the foundational demographic data, including detailed rural population distributions across all states and federal territories.

2. The ICT Use and Access by Individuals and Households Survey 2021 (Malaysian Communications and Multimedia Commission, 2022) provides technology adoption patterns that inform geographic clustering decisions.

3. Community-level records maintained by village heads (Ketua Kampung) and community leaders supplement official data in remote rural areas.

The primary unit of analysis for this research is the individual adult Malaysian residents aged 18 years and above. This selection aligns with the research focus on behavioural intention to use fintech services, which manifests at the individual level as a psychological construct. As (Venkatesh et al. 2012) emphasize, technology adoption decisions occur at the individual level, even when influenced by contextual factors. The primary data collection method for this study is a structured questionnaire and underwent rigorous translation and cultural adaption to ensure equivalence across Malaysia's multi-lingual and multi-cultural context. A pilot testing across rural areas in three Malaysian States, Perak, Selangor, and Kelantan was carried out to ensure instrument functionality across diverse contexts. The method of distribution of the instrument uses Google Forms. The questionnaire includes a cover letter which provides an explanation that the purpose of the data collection is strictly for academic requirements. It also indicates a one-week timeline for response and ensuring confidentiality of the respondents. In case of slow and low response rates, several follow ups with reminders were executed.

The pilot study is executed based on a sample of 30 respondents. The questionnaire was distributed to 50 respondents in total, where 30 responses were returned. There were 30 valid answers with no elimination of missing answers and outliers. Following the fundamental process in research methodology, as the initial step the reliability test, to ensure the consistency, stability, and reproducibility of measurements instruments (Taherdoost, 2016) was carried out. (Kennedy 2022) highlights Cronbach-Alpha coefficient as a critical metric for measuring item coherence, whereby values exceeding 0.700 indicate robust measurement consistency. The reliability test of the pilot study gives an α of 0.883 which is considered particularly good with a strong internal consistency. The dependent variable Behavioural Intention to use shows the Cronbach's alpha value of 0.960 concluding that there is excellent reliability in the answers. It can be concluded that there is excellent diversity in the data. The reliability or Cronbach's alpha value for the three independent variables such as digital payment adoption, fintech credit solutions, digital literacy is 0.967, 0.950, 0.952 respectively. The moderating construct Perceived Usefulness shows a Cronbach alpha of 0.945. This indicates that the results of alpha values shown in the instruments of this study are excellent. Thus, there is good diversity in the collected data, therefore making the following research useful in the future. Therefore, the following research can meet all the research objectives in an effective manner. Ultimately, proving the reliability of this study and emphasizing that it is viable and has the capability to answer the research questions adequately.

RESULTS AND DISCUSSION

Statistical analysis was performed using SPSS version 30 and Smart-PLS 4. The choice of analytical tools is in line with current best practice in business research (Hair et al., 2019; Hair et al., 2021). PLS-SEM structural model serves as "the" method for testing the relationships between variables as it allows for simultaneous examination of multiple predictors. The survey was distributed to 500 individuals by email or addressing the individuals in person by providing a link to google forms or in paper form. A total of 339 responses were received, giving an initial response rate of 67.8%. A vast majority of respondents were using the google form link 179 (52.8%), and 160 (47.2%) completed the questionnaire in paper form. Most responses were provided in English 249 (73.5%) and 90 (26.5%) in Bahasa Melayu. After data cleaning, which involved addressing missing values (0.29% of data points, well below the 5% threshold (Hughes et al., 2019) and removing outliers (2.37% of the dataset), the final sample size was 330.

1) Validity and Reliability of Overall Instruments

The reliability statistics presented in the dataset reveal several notable patterns that warrant critical examination. The overall Cronbach's alpha of 0.989 for the complete 38-item instrument and 0.983 for 31-item instrument exceeds the conventional threshold of 0.8 for good reliability, it is even suggesting exceptional internal consistency when item variances are equalized. The construct-specific reliability coefficients demonstrate

consistently high internal consistency across all measured dimensions. This finding aligns with established technology acceptance literature, where behavioural intention constructs consistently demonstrate high internal consistency, as evidenced by Cronbach's alpha values exceeding 0.80 in TAM and UTAUT studies (Davis & Granić, 2024; Martin, 2022).

2) Normality Kolmogorov-Smirnov Test

The One-Sample Kolmogorov Smirnov test represents one of the most widely utilized methods for evaluation whether a sample date conforms to a normal distribution (Hatem et al., 2022). This analysis examines the normality of test results, encompassing 330 respondents across 42 variables including demographic characteristics, behavioural intention measures, and technology acceptance constructs. The significance of normality testing extends beyond mere statistical formality. Violations of normality assumption can profoundly impact the validity and reliability of subsequent parametric analysis, potentially leading to erroneous conclusions and compromised integrity (Knief & Forstmeier, 2021).

The normality test results reveal a systematic and complete violation of normality assumptions across all variables examined in the study. Every variable, ranging from demographic, characteristics to complex behavioural construct, demonstrated significant departures from normality with p-values < .001 for both asymptotic and Monte Carlo significance tests. The uniform pattern of normality violations represents a critical finding with substantial implications for subsequent statistical analysis. The higher the most extreme deviation is, the more deviation from normal distribution, meaning the more skewness. Behavioural intention to use digital payment technology construct demonstrated consistent normality violations ranging from the most extreme absolute differences from 0.181 to 0.283. Technology Acceptance as a mediator variable shows values from 0.258 to 0.359 extreme departure from normality. Behavioural intention to use digital payment technology construct demonstrated consistent normality violations ranging from most extreme absolute differences from 0.181 to 0.245. Perceived Usefulness as a mediator variable shows with values from 0.181 to 0.245. Given the extensive normality violations, non-parametric tests, which do not make any assumption on the normality of the data, are required. Consequently, when analyzing correlations, this study will use Spearman rank correlation for association analysis.

3) Demographic summary of survey

The demographic analysis revealed a relatively balanced gender distribution with 54.8% female and 45.2% male, a diverse age range (largest group 35-44 years), and a representation of Malaysia's multicultural society (Indians, Chinese, Malays, and others). The sample also showed a high level of education, with a significant portion holding diplomas or bachelor's degrees. Descriptive statistics indicated positive attitudes towards fintech services, with the highest averages for behavioural intention and perceived usefulness.

4) Spearman's rho Correlations Analysis

Spearman's correlations showed strong positive relationships between the independent variables' digital payment adoption, fintech credit solutions, and digital literacy and behavioural intention. They also had a strong connection with the mediator, perceived usefulness. The direct correlation between digital payment adoption and the intention to use fintech services shows a strong positive relationship ($r=0.818$, $p<0.01$). The correlation between perceived usefulness and the intention to use fintech services ($r=0.832$, $p<0.01$) is the highest among all direct relationships with the dependent variable. This finding suggests that perceived usefulness is a key factor in the fintech adoption process.

5) Regression Analysis

The regression analysis demonstrates a comprehensive statistical examination of the predictive relationship between multiple independent variables and a dependent variable. With an R square value of 0.748 indicating that approximately 74.8% of the variance in the dependent variable is explained by the four predictor variables. This represents a strong model fit according to established benchmarks in regression analysis (Francis, 2025). The F-statistic of 240.861 with a p-value less than <.001 provides compelling evidence for the model's overall

statistical significance. The scatter plot as shown in appendix D indicates a strong positive linear relationship between the combined independent variables and BIU. The data points cluster closely around the trendline, indicating a high model fit and supporting the R^2 value of 0.748. This suggests that, as fintech-related factors emerges, so does financial inclusion in rural Malaysia.

6) PLS-SEM Analysis

The PLS-SEM analysis employs partial least squares methodology to examine the complex relationships between three independent variables Digital Platform Adaption (DPA), Access to Fintech Credit Solutions (AFCS), and Digital Literacy (DL), one mediating variable with Perceived Usefulness (PUSE) and one dependent variable with Behavioural Intention to Use (BIU) using a sample of 330 respondents. The analysis demonstrates robust predictive power with substantial variance explained in both the mediating variable (R^2 = 0.866) and the dependent variable (R^2 = 0.788), indicating the modes strong explanatory capacity for understanding behavioural intention formation in digital context of rural areas of Malaysia (Hair et al., 2021). This means that the combination of the three independent variables along with the mediating collectively accounts for approximately four-fifths of the variation observed in participants' behavioural intentions. Only 21.2% of the variance remains unexplained, suggesting that the model captures most of all factors influencing behavioural intention formation. The model demonstrates exceptional reliability across all latent constructs, exceeding established thresholds for internal consistency, Cronbach alpha coefficients all surpassing the minimum threshold of 0.70 recommended by (Hair et al. 2021) and approaches the upper boundary of 0.90 suggested by Nunnally and Bernstein in the year 1994 (Cheah et al., 2018).

The HTMT ratio assessment reveals several values that approach or exceed the conservative threshold of 0.850 recommended by (Roemer et al., 2021). The most concerning relationship exists between PUSE and DPA, with an HTMT value of 0.973, indicating potential conceptual overlap between these constructs. These findings suggest that respondents may perceive digital platform adoption and perceived usefulness as closely related concepts, which could impact the theoretical distinctiveness of these constructs (Henseler & Schuberth, 2025).

The path analysis, SEM reveals significant direct relationships between the independent variables and both the mediating and dependent variables. Digital platform Adoption demonstrates the strongest direct effect on Perceived Usefulness with a path coefficient of 0.761 ($p < .001$) aligning with the TAM theory. AFCS demonstrates a mediating effect on BIU through PU ($\beta = 0.095$), indicating that emotional responses influence BIU partially through their impact on usefulness perceptions. The SRMR value of 0.072 falls within the acceptable range of less than 0.08, indicating reasonable model fit and NFI value of 0.626 falls below the threshold of 0.900 indicating potential areas for model improvement.

7) Hypothesis Testing

The study's findings strongly support all four hypotheses. The dominant role of perceived usefulness as a mediator highlights the importance of demonstrating the value proposition of fintech services to rural Malaysian users. While access to credit solutions and digital literacy are important, the strongest influence comes from the perceived usefulness of the services themselves (Weilbach, 2025; Yeow, 2025). The strong correlation between digital payment adoption and perceived usefulness suggests that building trust and familiarity with digital payment systems is crucial for wider fintech adoption (Choung et al., 2023).

- Digital payment adoption shows a strong positive correlation ($r=0.818$; $p<0.001$) with behavioural intention.
- Access to fintech credit solutions correlates positively ($r=0.743$; $p<0.001$).
- Digital literacy also exhibits a strong positive relationship ($r=0.766$; $p<0.001$).
- Perceived usefulness strongly mediates these relationships, with correlations up to $r=0.832$ ($p<0.001$)

IMPLICATIONS AND RECOMMENDATION

I. Research Implications

This study carries substantial implication for multiple stakeholders engaged in advancing financial inclusion through fintech innovation in Malaysia. The pragmatic findings from this study extend beyond academic contributions to offer actional insights for policymakers, financial service providers, technology developers, and rural communities.

The findings advance theoretical understanding of technology acceptance in rural areas of Malaysia by extending the Technology Acceptance Model (TAM) to incorporate the unique dynamics of fintech adoption. The exceptional explanatory power of the model ($R^2 = 0.788$) demonstrates that traditional TAM frameworks remain highly relevant when adapted to contemporary fintech contexts. The identification of perceived usefulness as a dominant mediation mechanism contributes to theoretical refinement demonstrating that cognitive evaluation processes remain central to technology adoption decisions in resource-constrained rural areas of Malaysia. The findings challenge the assumptions that rural populations primarily adopt technology based on availability or peer influence, instead revealing sophisticated evaluation processes that assess practical utility. The conceptual framework developed through this research provides a foundation for future studies examining fintech adoption in similar contexts, as suggested by recent work in developing economies (Senyo & Osabutey, 2020).

The evidence of the study carries fundamental implications for policymakers. The dominant influence of perceived usefulness suggests that policy initiatives should prioritize tangible benefits rather than merely expanding technological infrastructure. Policy makers should consider offering demonstration programs to display practical applications in rural contexts. The significant role of digital literacy in predicting behavioural intention indicates that regional as well as national literacy programs should be considered amortizing investments rather than supplementary initiatives. The government should integrate digital financial literacy into national education curricula and adult learning programs. Furthermore, policy makers should consider creating regulatory sandboxes that allow fintech providers to test credit solutions tailored to rural populations' specific needs.

Traditional financial institutions face both challenges and opportunities as revealed by this study. The strong influence of digital payment adoption on behavioural intention suggests that banks should prioritize developing user-friendly digital payment platforms as gateway services for broader financial product adoption. Rather than viewing fintech as competitive threats, traditional institutions should consider partnership strategies that leverage fintech innovations to reach underserved rural markets more effectively. Financial institutions should invest in comprehensive digital literacy support programs as integral components of their rural market strategies. These programs should extend beyond basic technical training to include practical applications relevant to rural populations.

Fintech companies seeking to expand into rural markets must recognize that technological innovation alone does not guarantee adoption success. Findings from this study suggest that offerings should prioritize simplicity and intuitive navigation over feature richness, ensuring that users with varying digital literacy levels can access the services confidently. Fintech companies should consider developing differentiated offerings that allow users to begin with simple, high-utility services before progressing to more complicated products. This graduate approach respects varying capability levels to build trust and familiarity among users.

Results from the study suggest that fintech adoption can serve as a catalyst for broader rural development. The strong relationship between digital payment adoption and behavioural intention indicates that digital payment infrastructure can create multiplier effects. The moderate influence of credit solution indicates potential for addressing rural credit constraints. The development organization should consider partnering with fintech providers to design credit products tailored to rural needs.

This study on fintech innovation and financial inclusion from a rural Malaysian perspective carries important implication for social equity and inclusion in Malaysia's digital transformation journey. The validated relationships between study variables suggest that without targeted intervention, existing digital divides may

translate into financial exclusion and even more disparities to other regions. This risk necessitates proactive measures to ensure equitable access to digital financial services. Gender implication emerged from the research, suggests that differential digital literacy levels between men and women in rural areas may create gendered patterns of financial exclusion. Targeted programs addressing women's digital literacy and fintech adoption can contribute to gender equity in financial access.

J. Study Limitations

The cross-sectional design employed in this study, while providing a comprehensive snapshot of current adoption patterns, inherently limits the ability to examine temporal dynamics and causal relationships with definite certainty. The static nature of cross-sectional analysis may obscure important developmental trajectories that influence how rural populations progressively engage with fintech services over time. Research by (Kakinuma, 2022) emphasizes that financial behavioural patterns often demonstrate significant temporal variations, particularly during periods of rapid technological change. The present study therefore has a limited longitudinal aspect.

Geographic constraints may further circumscribe the applicability of findings beyond the three selected states of Perak, rural parts of Selangor, and Kelantan. Malaysia's diverse topography and varied development patterns across its thirteen states and three federal territories create distinct economic context that shape technology adoption behaviours. The eastern states of Sabah and Sarawak, characterized by unique indigenous populations and geographic challenges, may demonstrate fundamentally different adoption patterns from those observed in Peninsular Malaysia. This geographic limitation resonates with concerns raised by (Yang & Zhang 2022).

The systematic violation of normality assumption across all variables, while addressed through non-parametric analytical approaches, signals underlying measurement or response pattern issues that complicate interpretation. The pronounced negative skewness observed throughout the dataset suggests ceiling effects, where the measurement instruments failed to capture sufficient variation at the upper ranges of responses. This compression of variance potentially masks important distinction among respondents with genuinely high adoption readiness.

K. Contribution of Study

The empirical investigation into fintech adoption within Malaysia's rural communities addressed critical knowledge gaps that have persisted. Through this comprehensive analysis of 330 valid responses across Perak, rural Selangor, and Kelantan, this study generated distinctive insights that advance theoretical understanding and provide actionable guidance for practitioners and policymakers. The theoretical landscape of fintech adoption research has centered on urban context, creating a significant void in understanding how rural populations engage with digital services. This investigation bridges that gap through several contributions. The study's extension of TAM specifically for rural Malaysian context represents a methodological advancement that addresses limitations identified by previous scholars. While (Mittal & Singh 2025) called for context-specific adaptation of TAM theory in emerging markets, their systematic review revealed that only 12% of fintech studies examined rural populations. This study directly responds to that deficit by validating a modified TAM framework, that explains 78.8% of variance in behavioural intention, therefore substantially exceeding the 40 to 60% range typically reported in technology acceptance studies (Nguyen et al., 2024). The indemnification of perceived usefulness in a dominant mediation construct challenges prevailing assumptions about rural technology adoption. Contemporary research mostly emphasizes infrastructure and access as primary barriers (Zhang et al., 2024). In contrast, this study demonstrates that the cognitive evaluation process remains paramount even when basic access exists. The mediating exceptional R^2 value of 0.866 provides empirical evidence that rural users engage in sophisticated utility assessment rather than just passively accept technology. This finding contradicts the digital divide literature that frequently characterizes rural population as technology averse or capability-constrained (Aracil et al., 2022).

Financial service providers confronting the challenges of rural market penetration gain strategic insight from this research. The emergence of digital payment adoption as the strongest predictor for fintech usage ($\beta = 0.761$) provides clear direction for market entry strategies. Rather than pursuing immediate comprehensive service

offerings, the evidence supports strategies to establish robust payment infrastructure as the foundation for broader ecosystem developments. This finding resonates with industry experiences documented by (Hornuf et al. 2021).

Policy makers seeking to advance national financial inclusion agendas receive empirically grounded guidance from this research. The exceptional explanatory power of the validated conceptual framework model provides robustness for assessing policy effectiveness and targeting interventions. Unlike previous studies that relied on anecdotal evidence or limited samples (Ozili, 2021), this research offers statistically rigorous insights derive from diverse rural populations across three states, which due to the representativeness, can be generalized to other rural areas as well. The findings inform regulatory sandbox design and implementation. Furthermore, the study provides a benchmark for ensuring financial inclusion progress beyond simple account ownership metrics.

RECOMMENDATION FOR FUTURE DIRECTION OF RESEARCH

These limitations illuminate avenues for advancing the understanding of rural fintech adoption. Longitudinal research designs tracking the same rural communities across multiple time points would reveal how adoption patterns evolve and whether initial intention translates into sustained usage. Such temporal analysis could identify critical junctures where support interventions prove most effective and document how experience accumulation influences subsequent adoption decisions. The work of (Kakinuma 2022) demonstrated the value of long-term approaches in revealing how financial technology adoption influences the quality-of-life outcomes over time.

Geographic expansion to cover Malaysia's eastern states and more remote rural areas would test the generalizability of current findings while potentially revealing unique adoption barriers and facilitators.

Mixed-method approaches combining quantitative surveys with qualitative investigations would provide a richer understanding of the cognitive and social processes underlying adoption decisions. Ethnographic studies within rural communities could reveal how fintech services integrate with existing financial practices and social structures. Focus group discussions are recommended to uncover collective concerns, and support needs that individual surveys miss. Technology-specific investigation comparing adoption patterns across different fintech service categories would clarify whether current findings generalize across the diverse fintech ecosystem payment services, lending platforms, insurance technology, and investment application may demonstrate distinct adoption dynamics requiring service specific theoretical frameworks. In particular, the rapid emergence of Islamic fintech options in Malaysia provides opportunities to examine how religious considerations interact with technology adoption decision.

Finally, ecosystem-level studies examining how traditional financial institutions, fintech startups, and regulatory bodies interact to shape rural financial service landscapes would provide crucial macro-level context for adoption decisions.

CONCLUSION

In conclusion, this study affirms that fintech innovations represent a viable and powerful mechanism for advancing financial inclusion in rural Malaysia, if implementation strategies acknowledge and address the complex interplay of technological, cognitive, and contextual factors identified in the variable constructs and variable dimensions of this study. The path towards comprehensive financial inclusion requires more than technological solutions; it demands integrated approaches that build digital capabilities, demonstrate clear value propositions, and reflect the sophisticated evaluation process.

As Malaysia continues its digital transformation, the insights generated though this study provide both validation of current efforts and guidance for future initiatives. This is to ensure that the benefits of financial innovation reach all segments of society, leaving no community behind in the pursuit of shared prosperity.

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