

## A Study of Literature and Practical Gaps in e-Wallet Acceptance: The Case of Malaysia

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**Abstract:** The purpose of this article is to identify the existing research gaps in the literature and the practicality of e-wallet acceptance studies in Malaysia. A systematic literature review (SLR) of peer-reviewed journal articles was carried out by the researchers, based on two major databases, namely, Scopus and Web of Science. In total, 60 articles published from January 2017 to April 2021 were reviewed which revealed the research gaps. Several research gaps are identified in the literature and practicality. The article offers suggestions for future research, including how to prioritize understudied subjects and incorporate other points of view. As a result, this study offers new researchers to learn more about the rapidly growing acceptance of e-wallets. Future research can also address these gaps and enhance the level of acceptance for e-wallets globally for a sustainable future. By identifying the factors that influence people's decision to accept e-wallets, researchers can help companies design better services and marketing campaigns. This will require some practical and theoretical implications, primarily demonstrating some nourishment in realizing the cashless society vision.

**Keywords:** *Fintech, e-Wallet, Acceptance, Cashless, Sustainable Development.*

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### 1. Introduction

Fintech 1.0, which focuses on infrastructure, is the period between 1886 and 1976 when it first started to permeate the financial sector. By leveraging railroads and telegraphs during that time, they introduced technology into the financial sector, which helped to speed up the process of sending financial data across international borders. From 1967 to 2008, fintech developed into Fintech 2.0, which transitioned the financial sector's activities from analog to digital. The banking sector's adoption of fintech at the time followed the climate of digitization. Online banking had already been developed since 2008 and was being introduced at the time. Fintech 3.0 is also the point at which a new player joins the financial industry and challenges the established system. In this instance, an e-wallet was introduced due to the growing use of smartphones and the Internet. Apple Pay debuted in 2014, whereas Google Wallet did so in 2011. Both user acceptability and the use of Fintech are undergoing growth, evolution, and improvement.

Malaysians anticipated receiving MyKad, a card that can be used as an e-wallet, ATM card, and for other transactions when Fintech 3.0 launched the financial sector there in 2011. With the advent of the Internet of Things (IoT), big data, artificial intelligence (AI), and blockchain technology, Fintech 3.0 in Malaysia keeps expanding and getting better. Mobile wallets, mobile payments, blockchain, crypto currencies, crowd funding, lending, artificial intelligence (AI), the market, Islamic fintech, and remittance are the main areas of focus for Malaysian fintech companies. The most popular Fintech applications in Malaysia are mobile wallets and electronic payments (Bakri et al., 2023). There are 294 Fintech businesses in Malaysia for the year 2022, including ones that deal with e-wallets, payments, marketplaces, prop tech, insurtech, Islamic fintech, KYC/reg tech, blockchain/crypto currency, wealth tech, crowd funding, lending, remittance, and artificial intelligence data (Fintech News Malaysia, 2022).

The development of Fintech in Malaysia, including electronic payments and online banking, has helped to boost the country's technological productivity. Innovating new ideas in financial services and increasing public knowledge of the industry, fintech was at the forefront of this upheaval. Additionally, it encouraged users to look for services that were straightforward, user-friendly, real-time, and accessible (Abu Daqar, Arqawi, and Karsh, 2020). In Malaysia, there are 14 subcategories of fintech, with e-wallets being the most dominant. In 2022, there will be 43 electronic wallets in Malaysia, with the sector accounting for 19% of the country's Fintech sector, according to a report by Fintech News Malaysia. If we look closely at the Malaysian e-wallet market, we can see that in 2017 and 2018, the number of businesses joining the digital wallet

movement reached its pinnacle, with well-known brands like Samsung Pay, Alipay, Boost, Touch 'n Go, GrabPay, and WeChat Pay.

E-wallets, or electronic wallets, are a type of Fintech that utilizes the internet and are used as an alternative to traditional payment methods. In certain circumstances, e-wallets can be used to replace cash, such as facilitating transactions without retaining a large amount of currency, reducing the time needed to calculate transactions, expediting payments, increasing security, and lowering the risk of loss. One of the most popular and innovative services launched in 2017 was e-wallets, which allow the secure storing of bank card information on a mobile device. These services can then be used to undertake numerous activities like paying bills, transferring money, and shopping (AlKubaisi and Naser, 2020). Digital money storage is the most well-known Fintech application for users who lack bank accounts. To enable clients to execute a variety of transactions without the need for a regular bank account, banks have introduced e-wallets. The popularity of e-wallet applications has been considerably boosted by the widespread use of smartphones and their high penetration rate. The study by Abu Daqar et al. (2020), which pointed out that the e-wallet's great penetration across multiple generations positions it as a significant Fintech application and capable of improving e-banking services via digital devices, notably smartphones, demonstrated this fact.

In addition to the analogy to a physical wallet, an e-wallet provides advantages and features including nearly infinite storage, location awareness, and easy sorting or searching of contents, making it a more tempting alternative to the physical wallet. Environmental advantages include the reduction or elimination of travel as well as the abolition of paper receipts, business cards, and other paper artifacts. Due to its major effects on Malaysia's business model, financial markets, and payment system, the idea of an e-wallet has garnered a lot of attention (Abdul Rahman et al., 2022). E-wallets are a preferred option among other digital alternatives since they allow for payments to be made from any location (Tikku & Singh, 2023). Additionally, an e-wallet is a service for secure digital currency exchanges provided by various institutions to raise people's standards of living (Wei et al., 2023). Whether such a cashless network would eventually supplant our actual wallets is an intriguing subject. The researchers suggest the answer is yes, even though there are still numerous difficulties in getting rid of deeply ingrained habits and company procedures. It's critical to investigate what influences Malaysians' willingness to accept e-wallets as a form of payment together with the continuous expansion of e-wallet providers in Malaysia, particularly in the payment industry. The acceptance of cashless transactions is becoming more widespread in Malaysia, as the evolution of money is fuelled by technical advancements and the digital world, as well as the rollout of COVID-19.

The study on e-wallet acceptance in Malaysia may assist in accomplishing sustainable development goals, especially by encouraging financial inclusion and lowering the use of paper-based payment methods like cash and cheques. Malaysia is a prime location for e-wallet adoption among consumers due to its high rate of smartphone and internet penetration, huge population of young people who are tech-savvy, and highly banked population. Bank Negara Malaysia has taken the initiative to join the e-wallet community to reduce the use of paper-based instruments. As system developers, they must ensure the benefits of ease of use, usefulness, and confirmation so that users are satisfied experiencing a user-friendly and useful system. Experts should comply with and respond to changes swiftly. Sustainable Development Goal 8 (SDG Goal 8), which aims to provide sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all, can be furthered by encouraging the use of e-wallets in Malaysia. By fostering societal equality regardless of income gaps, it also addresses SDG Goal 10 (Economic Planning Unit, 2021). Promoting financial literacy while fostering financial inclusion can result in long-lasting improvements in helping people meet their financial objectives.

This article aims to investigate the factors responsible for the acceptance of electronic wallets by identifying the possible gaps in the underlying theory and previous empirical literature through a systematic literature review. In addition, the researchers have presented the major problems of this innovative product and the importance of solving these problems for sustainable development in Malaysia.

This article extends the literature on electronic wallets in several ways. First, it examines the introduction and development of e-wallets, which seem to have had a significant impact on communities and businesses in recent years. Secondly, it highlights the key issues and the importance of addressing these issues for

sustainable development in Malaysia. Third, the methodology of this article was presented to identify gaps based on the previous literature review using systematic searching strategies. In this way, the researchers identified several gaps in the literature and in practice based on the underlying theory of TAM and previous literature reviews by providing a clearer picture of the confirmation of the factors that play a crucial role in users' decision to accept the e-wallet. Finally, the article provides a detailed insight into the conclusions and recommendations that can be used by future researchers to further investigate and add to the existing literature on e-wallet studies.

## 2. Key Issues in e-Wallet Acceptance Literature

The researchers contemplate that the study related to the acceptance of e-wallets is necessary especially in Malaysia to help promote the aspirations of the government to create cashless transactions among Malaysians. Based on that, the researchers have made a review of the gaps found in previous e-wallet studies to help and facilitate future researchers to continue studying this matter. Numerous countries, including Malaysia, are striving to transition into cashless societies by 2050 and to attain regional leadership in the digital economy by 2025. The issue, though, is the general lack of acceptance in society, which makes it difficult to realize these goals. To mitigate this, the government is implementing several initiatives and programs targeted at improving societal well-being and encouraging Malaysians, particularly those in the B40 group, to adopt e-wallets (Hanif, 2020). However, despite these initiatives, acceptance is still subpar and falls behind the use of cash and credit cards (Goh, 2020). This low-income community's reluctance to adopt digital technology is not a result of a lack of desire but rather is a result of their limited incomes, which are only adequate for subsistence due to the pervasive poverty (Lee et al., 2021). Although technology can lead to social and economic gains, the study emphasizes that the adoption of technology cannot be assumed, especially among the most underprivileged and illiterate communities. It is significant to identify the determinants and their impact on the acceptance of e-wallets from the viewpoint of Malaysian users because research on predictors of e-wallet acceptance in the Malaysian context is still limited (Jin et al., 2020).

Additionally, Malaysia's population rose from 32.4 million in 2018 to 32.7 million in 2020. In terms of total population, there are 3.2 million non-citizens and 29.5 million citizens (90.2%) (Fintech, 2021). The use of smartphones is expected to expand by 28.82% between 2015 and 2020, which is consistent with the pattern of the Malaysian population's growth. This positive correlation should also have a similar effect on Malaysians' acceptance of e-wallets. However, in 2021, most Malaysians largely favor cash (64 percent), credit cards at 21 percent, and the remaining 15 percent through e-wallets (Worldpay Global Payments Report, 2021). Since over 52 million credit and debit cards are now in use, the majority of Malaysian customers operate in a cash-based culture and exhibit a general cautiousness, which could pose challenges to the widespread adoption of e-wallets by consumers (Hoh, 2021).

Further, the current level of acceptance within the given timeframe continues to be modest. Despite Malaysians having had access to digital payments and cashless solutions for a while now (Ariffin et al., 2020), a sizeable fraction of Malaysians have not yet fully embraced these procedures. This scenario is exacerbated by the lack of knowledge about the benefits of e-wallets (Abdullah et al., 2020). Moreover, a lack of confidence in cashless or electronic payment systems could potentially be attributed to the lack of acceptance. Low-security precautions and inadequate electronic security for e-wallets are the main issues that prevent their acceptability (Noor Ardiansah et al., 2020; Singh & Srivastava, 2020). According to research, discomfort makes it far more difficult for micro-merchants to embrace cashless payment systems (Priyandana et al., 2020). Plus, Malaysians' current low acceptance of e-wallets is related to worries about being exposed to advanced cyber security threats during online transactions (Abdullah et al., 2020).

Studies associated with e-wallet acceptance are also deemed important because various viewpoints focus on technology acceptance. The Technology Acceptance Model (TAM), among other studies in this field, examines people's attitudes, user beliefs, and behavioral intentions toward using technology. According to Hwang, Al-Arabi and Shin (2016), acceptance is more important than intention since it considers the actual use of the facility and provides an exhaustive overview of how end users behave when using an e-wallet. As such, based on the above points, the researchers suggest TAM as the underpinning theory and adaptation of previous empirical studies to investigate determinants towards e-wallet acceptance.

**The Importance of Addressing These Key Issues for Sustainable Development:** The digital economy has grown substantially because of fintech, especially in emerging nations like China, India, Thailand, and Indonesia (Al Nawayseh, 2020). The beginnings of fintech can be found in the 1950s, when ATMs replaced tellers and credit cards were introduced to simplify daily transactions (Tun-Pin et al., 2019). By 2020, Fintech investments are anticipated to attain a global value of about US\$40 billion. With the positive improvements that the Malaysian start-up ecosystem has shown thus far, it is plausible that consumers will continue to recognize and explore the benefits that Fintech offers. Statistica reports that the country's fintech transactions this year amounted to just US\$6.37 million, whereas the global total was US\$769.3 billion (Surendra, 2017). According to Tun-Pin et al. (2019), this signifies that organizations would benefit from Fintech development in terms of customer engagement and business strategy development. Furthermore, according to the Economic Planning Unit (2021), Fintech can help achieve SDG 10-Reduced Inequalities by fostering societal equality regardless of income disparities and empowering Malaysia to meet the challenges of a volatile, unpredictable, complex, and uncertain (VUCA) environment (Yeoh, 2019).

The social targets in enhancing people's well-being through financial inclusion are one of the reasons e-wallet payments have gained a great deal of attention (Nam et al., 2023). E-wallets have transformed the way individuals and companies execute business, and it has been noted that they have the potential to increase financial inclusion while simultaneously narrowing the associated gender and rural gaps (Koomson et al., 2021). E-wallets are seen to have possessed a significant impact on business in recent years. Financial inclusion refers to the availability of cost-effective and practical financial goods and services to individuals and businesses, catering to their diverse requirements for transactions, payments, savings, credit, and insurance. These services ought to be provided in an ethical and sustainable manner. An alternative to traditional payment methods like cash or credit cards has been offered by electronic payment systems. Several countries are moving towards digital currencies, and some may even think about doing away with traditional paper money in the future.

The Malaysian government has started a few initiatives and programs because it acknowledges the significance of e-wallets. By aggressively encouraging the use of e-wallets through the establishment of the Interoperable Credit Transfer Framework (ICTF) policy in 2018 and the subsequent launch of the digital economy plan MyDIGITAL in February 2021, the government has demonstrated its commitment to advancing the goal of a cashless society. In MyDIGITAL, the Malaysia Digital Economy Blueprint's plans to propel Malaysia's economic development into a technologically advanced state are delineated. The Twelfth Malaysia Plan 2021-2025 (RMK-12), which aims to achieve Wawasan Kemakmuran Bersama 2030, relies substantially on MyDIGITAL. To lead the nation in the digitization of ethnicity, the former prime minister announced the Digital Economy Blueprint. The 10-year plan seeks to establish Malaysia as a regional leader in the digital economy and transform it into a high-income, digitally-driven country (Economic Planning Unit, 2021). The development of new technologies, however, is one of the most crucial approaches toward achieving these objectives and closing the technology gap between developed and developing countries.

Aside, from the best of researchers' knowledge, there has not been much-restricted analysis done to date regarding the lower-income acceptance of e-wallets, even though adoption is growing quickly in Asian countries. The low level of acceptability among individuals poses challenges for government initiatives to promote the usage of e-wallets, especially in the low-income population. Furthermore, this technology may help social and economic circumstances, but adoption is not certain, particularly among the least educated and most economically impoverished populations. People who are unbanked are more likely to live in remote locations that are disconnected from formal financial institutions and have irregular or low incomes (Ky et al., 2021). Additionally, acceptance studies have shown to be essential in predicting whether new goods and services will succeed or fail.

### 3. Methodology

Based on the underlying principle of TAM and previous literature reviews, researchers have determined where there are gaps in the study of e-wallets. Based on systematic searching techniques, the prior literature was reviewed. To ensure rigorous and structured searching, this technique was created based on three subprocesses: identification, screening, and eligibility. As extended as all database searches can be

reproduced, this method can be accurately documented in the review. The process of finding synonyms, related terms, and variations of the study's main keywords is known as identification. All datasets were searched from January 2017 to April 2021 using advanced searching techniques such as the Boolean operator, phrase searching, truncation, wild card, and field code functions separately. The following main and enriched keywords were used to conduct the searches across all databases from January 2017 to April 2021: ("ACCEPTANCE\*" OR "ACCEPT\*" OR "ACCEPTING\*" OR "ACCEPTED" OR "ADOPTION\*" OR "ADOPT" OR "ADOPTED") AND ("CASHLESS" OR "E-PAYMENT\*" OR "ELECTRONIC PAYMENT\*" OR "ONLINE PAYMENT\*" OR "ON-LINE PAYMENT\*" OR "E-WALLET\*" OR "ELECTRONIC WALLET\*" OR "ELECTRONIC MONEY").

Gusenbauer & Haddaway (2020) who confirmed the searchability of these two search sources identified two databases, Scopus, and Web of Science, as the top databases for searching related articles and documents for the review. A total of six (6) sources yielded supporting databases. The sources used were Google Scholar, DOAJ, MY Jurnal, Research Gate, Mendelej, and university libraries. 320 articles have been produced because of the identification procedure in the major and supporting databases. 233 items were eliminated during the screening phase because they did not match the requirements for inclusion, leaving 87 articles for the eligibility procedure. The third step, eligibility, involves manually reviewing all the retrieved articles to make sure that all still fulfill the requirements following the screening process. Only 60 articles were selected for review out of the remaining 27 that had duplicate records in different databases.

#### 4. Gaps in e-wallet Acceptance

Based on a systematic search review of previous literature and theory from TAM, the researchers have identified some gaps in the study of e-wallet acceptance that can be used for future studies. Literature and practical gaps found in the review include those mentioned in the article discussion below: -

**Gaps in Literature:** Firstly, prior studies by Aditia et al. (2018), Qi et al. (2021), and Setiawan et al. (2018) indicated that Perceived Usefulness (PU) exhibits an insignificant association with technology adoption, while Perceived Ease of Use (PEOU) might wield a more substantial impact on system acceptance compared to PU. Drawing from this literature analysis, the study primarily adopts the Technology Acceptance Model (TAM) as the foundational theory, focusing on variables like PEOU and Attitude (ATT) as mediators. Additionally, other independent variables drawn from prior research include Security (AlKubaisi and Naser, 2020; Al-Dmour et al., 2021; Wamba et al., 2021; Kamis et al., 2022), Government Intervention (Aji et al., 2020; Kennedyd et al., 2020; Liébana-Cabanillas et al., 2020; Shen et al., 2020), Social Influence (Abdullah et al., 2020; Al-Saedi et al., 2020; Kamis et al., 2023; Odoom & Kosiba, 2020; Soodan & Rana, 2020; Yang et al., 2021), and Trust (Hossain et al., 2019; Hariguna et al. 2020; Singh and Srivastava, 2020; Lisana, 2021; Yang et al., 2021).

Secondly, for a comprehensive understanding of eWA determinants in Malaysia, there has been a scarcity of studies focusing exclusively on acceptance. While studies such as Abdullah (2020), Malik and Annuar (2021), and Mohamad Anuar et al. (2020) have concentrated on intention, and Teng and Khong (2021) have explored adoption, there is a notable dearth of research on acceptance. Beyond Malaysia's boundaries, similar gaps exist, with studies concentrated on intention in Vietnam (Do & Do, 2020; Phan et al., 2020; Tran Le Na & Hien, 2021), Indonesia (Latupeirissa et al., 2020; Yang et al., 2021), Cameroon (Wamba et al., 2021), and India (Soodan & Rana, 2020). Hence, this study endeavors to address the gap in acceptance, as it is perceived as a more dominant factor than intention, involving users' experiential interaction with the facility, even if used just once. Acceptance offers a comprehensive understanding of end-users' responses while employing e-wallets (Hwang et al., 2016).

Thirdly, the research landscape has witnessed several investigations into the effect of PEOU on various facets, such as cashless payments (Subawa et al., 2021), Fintech (Abu Daqar et al., 2020), electronic payment systems (Al-Dmour et al., 2021; Alshurideh et al., 2021), mobile payment (Kennedyd et al., 2020; Liébana-Cabanillas et al., 2018; Lisana, 2021; Lu & Lu, 2020; Mew & Millan, 2021; Singh & Srivastava, 2020; Tounekti et al., 2021), m-wallets (Tran Le Na & Hien, 2021; Wamba et al., 2021), and e-wallets (AlKubaisi & Naser, 2020; Duy Phuong et al., 2020; Kamis et al., 2023; Latupeirissa et al., 2020; Malik & Annuar, 2021; Munthali, George & Xuelian, 2020; Simatele & Mbedzi, 2021). However, to the best of the researchers' knowledge, limited attention has been given to investigating the direct relationship between PEOU and eWA.

Fourthly, existing studies have demonstrated that technology acceptance or intention correlates with PEOU, SC, SI, TR, and ATT variables (Alkhowaiter, 2020; Botchey et al., 2020; Chellapalli & Srinivas Kumar, 2020; Murari et al., 2020; Simatele & Mbedzi, 2021). However, the role of government intervention in eWA remains underexplored in the literature. Additionally, while Singh et al. (2020) introduced SI as a moderating variable in the relationship between user-perceived satisfaction and mobile wallet recommendation, this study extends SI to serve as a determinant influencing ATT. Nevertheless, a gap remains, where prior studies, such as Latupeirissa et al. (2020), Li et al. (2019), Patil et al. (2020), Singh and Sinha (2020) and Widayat et al. (2020), have employed ATT as a mediator in the context of technology behavioral intention or adoption, but not specifically in the context of acceptance.

Moreover, although ATT as a mediator has been explored by Al Khasawneh and Shuhaiber (2013) in SMS advertising acceptance, no investigation has been conducted in the realm of eWA. Hence, this study aims to bridge the gap between ATT (mediator) and eWA, as ATT's significance has been affirmed and theorized in TAM-related research as a substantial predictor of information system usage (Davis, 1989; Karahanna et al., 1999; Taylor, S. and Todd, 1995).

**Gaps in Practicality:** Despite rapid growth in developing countries, empirical research on eWA for low-income populations is still limited and little has been studied. To the best of the researchers' knowledge, previous related studies conducted by Abu Daqar et al. (2020), Alshurideh et al. (2021), Lisana (2021), Phan et al. (2020), and Subawa et al. (2021) were based on demographic (age and gender), professionals in private and public service (Abdullah et al., 2020; Hariguna et al., 2020; Latupeirissa et al., 2020; Singh & Srivastava, 2020; Yang et al., 2021), merchants and retailers (Ariffin et al., 2020; Odoom & Kosiba, 2020; Singh & Sinha, 2020). This investigation holds significant importance, particularly considering the alarming rise in low-income groups due to the COVID-19 pandemic. The number of poor households increased to 639.8 thousand in 2020, up from 405.4 thousand in 2019 (Department of Statistics Malaysia, 2022). This escalation in low-income households underscores the government's potential burden in supporting the adoption of e-wallet technology. Notably, literature specifically exploring e-wallet acceptance among low-income groups in Malaysia is relatively scarce. This study aims to address this gap, especially considering the global trend toward cashless economies and technological advancement, while ensuring the inclusion of the low-income segment (B40).

In Malaysia, the low-income (B40) group, being the largest, plays a pivotal role in achieving the objective of a cashless society. Malaysians are categorized into three different income groups: Top 20% (T20), Middle 40% (M40), and Bottom 40% (B40). These values may increase or decrease year-to-year, depending on the country's GDP, which is why the median household income is used as the determinant. Household income refers to the total income received (accumulated) by members of households, both in cash or in kind that occurs repeatedly within the reference period (within a year or more frequently) household income. The income range for B40, M40, and T20 differs according to the state, however, the researchers will follow the national definition, where the income range for B40 is below RM4,850; RM4,850 to RM10,959 for M40, and above RM10,959 for T20 (Department of Statistics Malaysia, 2021). The population can be selected based on the three (3) main justifications: being among the largest income threshold groups in Malaysia, being the recipients of various forms of government financial assistance, and accounting for household distribution by docile, where a majority of households experienced a decline in income and dropped to a lower income group.

## 5. Conclusion and Recommendations

In conclusion, the recommendations and insights derived from this study are poised to facilitate the latest advancements in this field. The results of the researchers' study provide a *modus operandi* for identifying research gaps, thus enabling scholars to conduct literature reviews more rigorously, efficiently, and effectively in the future.

This gap study is a guide or reference for future researchers in identifying what factors contribute to the acceptance and use of e-wallets. To build the framework, the researchers identified the relevant justificatory knowledge. As prior methodological literature was rather silent on how research gaps were identified, we

conducted a literature review analyzing 60 papers to search for explicit or implicit knowledge on this topic. The researchers hope that this article provides researchers guidance for the essential task of identifying research gaps in a more rigorous, effective, and efficient manner. Further, the researchers hope that this article serves as a starting point for a scholarly debate on the important, yet understudied, topic of rigorously identifying research gaps in literature reviews.

Nevertheless, this article has several limitations and therefore offers numerous opportunities for further research. First, the approach of analyzing the literature reviews in terms of how they reveal research gaps has not always yielded the desired results. This aspect requires further scrutiny, as it is pivotal for the identification of research gaps. Secondly, the process of verifying research gaps could be more data-driven. While the researchers believe that this article provides substantial arguments for the inclusion of this process, the aspect certainly requires further examination. Therefore, there is a need for greater collaboration between researchers, policymakers, and practitioners to ensure that research on e-wallets is translated into effective policies and programs that can address the root causes of e-wallet acceptance.

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