Computers in Human Behavior Reports 16 (2024) 100517

Contents lists available at ScienceDirect

Computers in Human Behavior Reports

journal homepage: www.sciencedirect.com/journal/computers-in-human-behavior-reports

Digital payment systems in an emerging economy

Romny Ly [a], Bora Ly [b,*]

[a] Cambodian Mekong University, Cambodia
[b] Regional Polytechnic Institute Techo Sen Siem Reap and pannasastra university of Cambodia, Cambodia

ARTICLE INFO

Keywords:
Digital payment systems
Financial literacy
TAM
TPB
Behavioral economics
Diffusion of innovations theory

ABSTRACT

This study investigates the factors influencing the adoption of digital payment systems in Cambodia, employing a quantitative approach with 359 Cambodian participants. The research integrates concepts from the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB) to explore the relationships between perceived ease of use (PEU), perceived usefulness, public attitudes, perceived behavioral control, financial literacy, and the adoption of digital payment systems. Using Partial Least Squares Structural Equation Modeling (PLS-SEM), the study identifies a significant positive relationship between PEU and attitudes toward digital payment systems, corroborating the TAM's assertion that ease of use is a crucial determinant in technology acceptance. The findings also highlight the critical role of perceived usefulness, extending its implications to include convenience, security, and transactional efficiency. The study underscores the influence of public attitudes and perceived behavioral control on adopting digital payment systems, particularly in an emerging economy. In addition, it reveals the impact of financial literacy, not only as a determinant of adoption but also as a mediator in the relationship between public attitudes and adoption. Behavioral nudges are also identified as significant influences in this context. The research contributes to understanding digital payment adoption in emerging markets. It provides digital financial technology insights for practitioners, policymakers, and educators.

1. Introduction

Cambodia's financial sector has undergone a substantial transformation in recent years, marked by a growing adoption of digital payment systems. This trend mirrors broader developments across Southeast Asia, driven by increasing internet penetration, a burgeoning middle class, and supportive government policies (Curtis et al., 2022). In a historically cash-based economy like Cambodia, the shift toward digital payments represents a major shift in consumer behavior and financial practices. Despite these advancements, significant gaps remain in understanding how digital payment systems contribute to financial inclusion, particularly among underserved populations in rural areas. Existing research often focuses on technological adoption without fully addressing the barriers that hinder widespread usage in Cambodia (Al-Okaily, 2024; Hasan et al., 2024). Cambodia has made progress in increasing access to financial services through mobile and digital banking solutions. Introducing services such as Wing, Pi Pay, and ABA Mobile has revolutionized financial transactions, making money transfers and payments more accessible. Government initiatives like the National Payment Gateway and Cambodian Shared Switch have further streamlined digital transactions (Mengheng, 2023; Sam, 2021). However, a critical research gap persists. While much attention is given to technological advancements, few studies have explored how these innovations impact Cambodia's unbanked and underbanked populations. Moreover, the long-term sustainability of digital payment systems remains under-researched, especially in emerging economies with limited infrastructure and financial literacy challenges. Studies highlight that inadequate digital infrastructure and low financial literacy significantly hinder the adoption and usage of digital payment systems in such regions (Danladi et al., 2023; Putrevu & Mertzanis, 2023). A critical factor in the rise of digital payment systems in Cambodia is its young, tech-savvy population. Nearly 60% of the population is under 25, a demographic group more receptive to new technologies (UNICEF Cambodia, 2019). This demographic shift provides fertile ground for rapidly adopting digital payment systems. However, there is limited empirical research examining the specific behavioral patterns of this group compared to older generations. Furthermore, while the Cambodian government has introduced various policy measures to support

* Corresponding author.
E-mail addresses: rly@mekong.edu.kh (R. Ly), boraly@gmail.com (B. Ly).

https://doi.org/10.1016/j.chbr.2024.100517
Received 15 January 2024; Received in revised form 21 October 2024; Accepted 21 October 2024
Available online 22 October 2024

digital payments, the effectiveness of these policies in building consumer trust and ensuring long-term adoption has not been sufficiently examined.

The global shift toward cashless transactions, driven partly by the COVID-19 pandemic, has accelerated the adoption of mobile payments worldwide (Al-Okaily, 2024). In Cambodia, however, cash remains a dominant mode of transaction, especially in rural areas. Recent studies highlight that social influences and ease of use significantly affect mobile payment adoption, while challenges such as security concerns and limited infrastructure persist. For example, Lim and Anderson (2023) found that social influences are critical in shaping digital payment behavior in Cambodia. Similarly, research in Phnom Penh highlights generational differences in adoption, with older users slowly embracing mobile payments driven by economic factors (Leang et al., 2023). In rural Siem Reap, ease of use and convenience were key motivators, although concerns about privacy and security still hinder widespread adoption (Narith et al., 2024). Similarly, research by Liu et al. (2021) reveals a gap in understanding consumer motivations for adopting mobile payments beyond essential technological readiness. This study aims to fill these gaps by examining the impact of mobile payment systems on financial inclusion and consumer behavior in Cambodia, with a particular focus on underrepresented groups. Drawing on established frameworks such as the TAM and TPB, this research used multivariate statistical methods, including Partial Least Squares Structural Equation Modeling (PLS-SEM), to explore the factors that drive the adoption and continued use of mobile payment systems. By addressing the gaps identified in previous studies, this study provides valuable insights into how digital payment systems can be more effectively leveraged to enhance financial inclusion in Cambodia.

2. Literature review

The role of digitalization in modern business practices is increasingly pivotal, encompassing everything from procurement to financial transactions. Digital technologies, particularly the Internet and mobile applications, have revolutionized how consumers interact with financial services, offering unprecedented convenience and accessibility. Yuvaraj and Sheila Eveline (2018) and Kumar and Chaubey (2017) highlight how online banking and other digital services have become integral to modern consumer lifestyles. However, these advancements have not been without challenges. Consumer concerns regarding privacy and security in digital transactions are significant. However, innovations in big data and the Internet of Things are helping to allay these fears and move society towards a cashless economy (Barkhordari et al., 2017; Stephen, 2016). Equally, the adoption of digital payment systems is influenced by various socio-economic factors, consumer perceptions, and service efficiency. For example, Gokilavani et al. (2018) and Kotecha (2018) discuss how socioeconomic status shapes perceptions toward digital payments.

Meanwhile, Teoh et al. (2013) identified ease of use and self-efficacy as crucial factors influencing e-payment adoption in Malaysia. However, they also observed a complex relationship between trust and security concerns. Furthermore, demographic characteristics, such as education level and age, significantly impact digital payment adoption, but findings regarding their influence are varied. Singh and Rana (2017), Vally and Divya (2018), and Eswaran (2019) provide contrasting perspectives on how these demographic factors affect digital payment adoption. In addition, Chakraborty and Mitra (2018) and Kavitha and Kumar (2018) emphasize the importance of understanding the role of demographic factors in influencing consumer adoption of digital payment systems.

Government policies and initiatives also play a crucial role in encouraging digital payment systems. The study by Carbó-Valverde et al., 2020 highlights the influence of governmental initiatives on consumer adoption of digital payments. Das and Das (2020) further underscore the importance of government support and policy mechanisms in fostering consumer confidence in digital payment systems. In addition, security concerns remain a significant factor influencing consumer trust and adoption of digital payments. Ardiansah et al. (2020) and Johnson et al. (2018) discuss the perceived risks associated with digital payments, while Rathore (2016) emphasizes the importance of security in the adoption of digital wallets. Technological advancements, such as blockchain and biometrics, are increasingly leveraged to enhance security and user confidence in digital transactions (Avital et al., 2017; Chen et al., 2017; Yoo, 2017). Also, adopting electronic payment methods faces significant challenges, primarily due to concerns over transaction costs, safety, the general acceptability of digital payment methods, and the ease with which these transactions can be managed. This has been extensively analyzed in the work of Adil and Hatekar (2020), who emphasize these as crucial hurdles in the widespread acceptance of electronic payments in the region. Besides, addressing the cost factor is vital for retailers to integrate digital payments more effectively into their business models. This aspect was notably highlighted by Tiwari et al. (2019), who pointed out that cost is a decisive factor in adopting digital wallets. In addition, Karsen et al. (2019) identified personal, technical, and environmental factors as influential in shaping the adoption and use of mobile payment systems.

In digital payment services, Ullah et al. (2022) point out the need for future research to delve deeper into the intricate aspects of financial literacy and social influence. Specifically, there is an opportunity to conduct a more profound analysis of how these factors influence the adoption of digital payment services. Likewise, Ullah et al. (2022) emphasize the pivotal role of perceived usefulness, highlighting that it is a complete mediator in the relationship between financial literacy and the intention to adopt. On the other hand, perceived ease of use partially mediates the connection between digital literacy and the intention to adopt. Expanding on this line of inquiry, future research endeavors could explore the ramifications of digital and financial literacy for individual investors (Prete, 2021). Such exploration should extend its focus to discern how these implications manifest across various demographic groups. Additionally, it would be valuable to investigate the potential impact of digital financial products and markets on enhancing financial and digital literacy. Additionally, future studies should consider variables like financial literacy, access to financial services, and income levels (Riandani et al., 2022).

The acceptance of mobile payment systems has been the subject of several studies, and several conclusions have been reached. These existing studies have yielded valuable insights, helping to identify the key factors driving the acceptance of mobile payment systems. The current study aims to delve into several aspects that previous research has not thoroughly examined, thereby contributing to a more comprehensive understanding of this area. Given the rapid adoption of digital payment systems in Cambodia, it is imperative to understand the factors influencing this shift and its impact on consumer behavior. This research explores various hypotheses related to perceived ease of use, perceived usefulness, public attitudes, and spending patterns in the context of digital payment systems in Cambodia. The study will examine how these factors contribute to the intention to adopt digital payment systems and how they shape consumer spending behaviors. This work tested hypotheses based on established theoretical frameworks such as the TAM, TPB, Behavioral Economics Theory, and the Diffusion of Innovations Theory. These models provide a robust foundation for understanding the dynamics of technology adoption and usage (Ajzen, 1991; Davis, 1989). The research will also delve into the role of socioeconomic factors, financial literacy, and behavioral nudges in influencing consumer decisions regarding digital payments. The findings of this study will have implications for policymakers, financial institutions, and technology providers, aiding in further developing strategies to promote digital financial inclusion in Cambodia.

2.1. Theoretical foundations

The interplay of user perceptions, behavioral tendencies, and

technological attributes in digital payment systems is intricate and multifaceted. The present study, anchored in a robust theoretical foundation, seeks to unravel this complexity through the lens of seminal theories: the TAM, TPB, Behavioral Economics Theory, and the Diffusion of Innovations Theory. Initially, the TAM, introduced by Davis in 1989, revolutionized the understanding of technology adoption. Central to TAM is the concept that perceived ease of use and perceived usefulness are pivotal in influencing users' attitudes and intentions toward technology (Davis, 1989; Venkatesh & Davis, 2000). This model has demonstrated remarkable resilience and adaptability, evolving over the decades to remain pertinent in the ever-changing technological innovation landscape. Equally, Ajzen's TPB, formulated in 1991, presents a comprehensive framework, positing that individual behavior is driven by behavioral intentions, which are influenced by attitudes, subjective norms, and perceived behavioral control (Ajzen, 1991). This theory has been extensively applied in various domains, offering insightful perspectives on behavioral prediction.

Additionally, behavioral Economics Theory, emerging from the pioneering work of Thaler and Sunstein (2009), introduces a nuanced understanding of human decision-making. It asserts that individuals are not always rational actors; instead, their choices can be significantly swayed by contextual cues or nudges (Thaler & Sunstein, 2009). This theory has gained traction for its applicability in designing interventions that subtly guide user behavior. Lastly, the Diffusion of Innovations Theory, elucidated by Rogers in 1962, provides a framework for understanding how, why, and at what rate new ideas and technologies spread. This theory highlights factors such as relative advantage, compatibility, and complexity that influence the adoption of innovations (Rogers et al., 2014). The theoretical contribution of this research lies in its synthesis of diverse theoretical perspectives, providing a comprehensive understanding of the factors influencing the adoption of digital payment systems. By integrating insights from TAM, TPB, Behavioral Economics, and the Diffusion of Innovations Theory, this study not only tests and validates existing theoretical propositions but also extends the discourse by introducing the mediating role of financial literacy in technology adoption. Therefore, this approach enriches the existing body of knowledge and paves the way for future research endeavors in digital payment systems and technology adoption at large.

2.2. Hypotheses constructions

Evidence shows that Perceived Ease of Use (PEU) impacts public Attitudes toward Digital Payment Systems (ADP). Poudel and Sapkota (2022) and Saini and Sharma (2017) found that perceived ease of use positively influences perceived quality, a key component of attitudes. Similarly, Andavara et al. (2021) and Siagian et al. (2022) assert that perceived ease of use directly impacts the intention to use digital payment systems, while perceived usefulness indirectly influences it. In addition, Nenandha (2020) and Sarkam et al. (2022) identified perceived ease of use as a significant factor in influencing interest and intention to use digital payment systems. Lastly, Teoh et al. (2013) and Ramayah et al. (2005) also found that perceived ease of use significantly influences consumers' perception and intention to use electronic payment systems. Based on these studies, this work posits that *(H1) PEU significantly impacts public attitudes toward digital payment systems*.

Perceptions of usefulness in various studies shape consumer attitudes toward digital payments. Saini and Sharma (2017) and Kavitha and Kannan (2020) were pivotal in establishing this connection, identifying perceived usefulness as a critical determinant of consumer attitudes. Significantly, Saini and Sharma (2017) extended this understanding by integrating ease of use and security as influential factors. Building on this foundation, Andavara et al. (2021) and Jayantari et al. (2021) provided further empirical support. Andavara et al. (2021) revealed a nuanced relationship, illustrating that perceived ease of use indirectly predicates the intention to use mobile payment systems by enhancing perceived usefulness. Concurrently, Jayantari et al. (2021) corroborated the positive influence of perceived usefulness and ease of use on repurchase intentions. Expanding the scope of this inquiry, Moti and Walia (2020) and Siagian et al. (2022) explored additional dimensions, demonstrating that factors such as perceived ease of use, compatibility, and social influence are instrumental in augmenting perceived usefulness. It offers a more holistic view by showing that perceived security, ease of use, and usefulness significantly inform consumer behavioral intentions (Siagian et al., 2022). Furthermore, Vinitha and Vasantha (2017) and Alshurideh et al. (2021) highlighted the pivotal role of trust and security in fortifying perceived usefulness, with Alshurideh et al. (2021) also shedding light on gender as a moderating factor in the adoption of e-payment systems. Considering this comprehensive body of research, the current study posits that *(H2) Perceived Usefulness substantially impacts public attitudes toward digital payment systems*.

The nexus between public attitudes and spending patterns has garnered considerable scholarly attention in consumer financial behavior, especially in digital payment systems. This area of inquiry is pivotal, as the proliferation of digital transactional modalities is reshaping consumer spending habits. The foundational study by Kurniawan et al. (2019) serves as a cornerstone, empirically demonstrating the substantial influence of digital payment systems on public spending, a phenomenon characterized by a marked transition toward online transactions. This paradigm shift underscores the centrality of digital platforms in contemporary consumer behavior. Complementing this, Chaveesuk et al. (2021) delve into the attitudinal dimensions, positing that the predispositions and perceptions held by the public are instrumental in shaping their inclination towards adopting digital payment methods. This assertion aligns with the tenets of behavioral finance, where attitudes significantly influence decision-making processes. Extend granularity is provided by Mensah et al. (2021) and Aydin and Burnaz (2016), who underscore the relevance of specific variables such as performance expectancy, effort expectancy, and perceived security. These factors, they argue, are predictive of the intention to utilize electronic payment systems. This aligns with the technology acceptance model, wherein perceived ease of use (effort expectancy) and perceived usefulness (performance expectancy) are pivotal in technology adoption. Al-Okaily et al. (2020) expand this framework by incorporating additional variables like social influence, price value, security, and privacy considerations. This broader perspective recognizes the multifaceted nature of consumer decision-making in the digital era, acknowledging that a spectrum of personal and social factors influences adoption behaviors. Synthesizing these insights, this work suggests that *(H3) Public Attitudes toward Digital Payment Systems Significantly Predict public adoption of Digital Payment Systems*.

Numerous studies have investigated factors influencing the adoption of digital payment systems. Chaveesuk et al. (2021) and Mensah et al. (2021) found that perceived risk, facilitating conditions, performance expectancy, and effort expectancy significantly predict this intention. Siagian et al. (2022) further identified the direct and indirect effects of perceived security, ease of use, and usefulness on consumer behavioral intention. Equally, Kurniawan et al. (2019) and Yang et al. (2012) highlighted the impact of digital payments on public spending patterns, with the latter emphasizing the role of perceived risk and image. Additionally, Cao et al. (2016) and Ayudya and Wibowo (2018) found that perceived trust and behavioral control are significant predictors of intention to use mobile payment services. However, Filona and Misdiyono (2019) found that perceived ease of use did not significantly affect the intention to use electronic money. Thus, this work signifies that *(H4) Perceived behavioral control significantly predicts public adoption to Digital Payment Systems*.

Behavioral nudges can help individuals make beneficial decisions without needing external forces or incentives. According to Choi and Loh (2021), minor frictions, such as ATM closures, can lead to increased usage of digital platforms. Equally, Chaveesuk et al. (2021) highlighted the influence of attitudes and perceived risk on the intention and actual

use of digital payment systems. In addition, Kanojia and Lal (2020) and Patil et al. (2018) have emphasized the pivotal role of trust in fostering technology adoption. Notably, Kanojia and Lal (2020) delve into the intricacies of trust within the specific milieu of the Indian context. Concurrently, Patil et al. (2018) and Almarashdeh et al. (2018) reinforce the critical significance of factors such as performance expectancy, ease of use, and trust in technology adoption. Lastly, Yang et al. (2012) and Sivathanu (2018) provided additional insights, with Yang et al. (2012) emphasizing the impact of positive and negative valences, and Sivathanu (2018) examining the influence of behavioral intention and innovation resistance during the demonetization period in India. Based on these arguments, this study suggests that *(H5) Behavioral Nudges significantly impact public adoption of Digital Payment Systems*.

The public's attitudes toward digital payment systems and financial literacy have been examined in various studies. Histori (2022) and Prete (2021) found that financial literacy and social influence significantly impact the use of digital payment systems. This is particularly relevant in Cambodia, where digital financial literacy is increasingly important due to the government's push for digitalization. Equally, the determinants of digital financial literacy in rural India have been explored by Azeez and Akhtar (2021), who found that socio-economic factors play a significant role. Ullah et al. (2022) further examined the intention to adopt mobile payment and banking in Pakistan, finding that digital literacy is a key factor. These studies collectively suggest that public attitudes toward digital payment systems are influenced by financial literacy, which in turn is shaped by a range of factors, including social influence, digital literacy, and socio-economic status. Therefore, this work posits that *(H6) Public Attitudes toward Digital Payment Systems impacts financial literacy*.

Financial literacy and social influence play a substantial role in using digital payment systems (Histori, 2022; Prete, 2021). Ullah et al. (2022) and Kirana and Havidz (2020) further support this, with Ullah et al. (2022) finding that financial skills and digital literacy influence the intention to adopt mobile payment systems. Kirana and Havidz (2020) demonstrate that financial literacy and mobile payment usage positively impact financial inclusion. Equally, Azeez and Akhtar (2021) and Balakrishnan and Shuib (2021) provide additional context, with Azeez and Akhtar (2021) identifying socio-economic demographic factors as determinants of digital financial literacy, and Balakrishnan and Shuib (2021) highlighting the role of readiness towards a cashless society in digital payment adoption. Additionally, Susanto et al. (2022) and Gautam et al. (2022) explore the factors influencing digital payment adoption, with Susanto et al. (2022) identifying trust, perceived risk, satisfaction, security, social influences, and facilitation conditions as key factors. Gautam et al. (2022) found that financial technology positively impacts digital literacy, particularly in the context of poverty. Based on these findings, this work suggests that *(H7) financial literacy significantly impacts public adoption of Digital Payment Systems*.

2.3. Knowledge of digital payment systems as a mediator

In the context of technology adoption, particularly digital payment systems, knowledge about the specific functionalities and benefits of these systems is critical. While general financial literacy provides a broad understanding of managing personal finances, the specific knowledge about digital payment systems—how they operate, their advantages, and associated risks—plays a crucial role in their adoption. This section critically examines the mediator role of knowledge about digital payment systems in the adoption process. Recent studies have underscored the importance of both financial and digital literacy in adopting digital payment systems. Some studies found that financial and digital literacy plays a significant role in adopting digital payment systems (Histori, 2022; Ullah et al., 2022). Similarly, Ullah et al. (2022) highlight the perceived usefulness's mediating role. Patil et al. (2017) and Meiryani et al. (2021) further support this, with Patil et al. (2017) identifying perceived usefulness as a key determinant of adoption. Meiryani et al. (2021) found a positive relationship between perceived usefulness and public interest in digital payment systems. Equally, Nenandha (2020) and Kim et al. (2016) found perceived usefulness to be a significant factor in adopting digital payment systems. Additionally, Prete (2021) and Riandani et al. (2022) provide a broader context, with Prete (2021) highlighting the importance of both digital and financial literacy in the use of digital payment tools, and Riandani et al. (2022) demonstrating the positive correlation between digital wallet adoption and financial inclusion. However, Trütsch and Nikolaus (2021) found that while financial literacy does not directly impact payment instrument choice, payment literacy is a stronger predictor of payment behavior. Equally, Chaveesuk et al. (2021) and Kim et al. (2016) highlighted the importance of attitudes and perceived risk in adopting digital payment systems. Synthesizing these arguments, it becomes clear that specific knowledge about digital payment systems is a vital mediator in their adoption. This knowledge includes understanding the practical aspects of using digital payment systems, their benefits, and the associated risks. In the Cambodian context, where digital literacy may vary widely, ensuring that individuals possess this specific knowledge is essential for promoting the adoption of digital payment systems. Given these insights, this study posits that *(H8) Financial literacy mediates the relationship between public attitudes toward digital payment systems and the adoption of digital payment systems*.

Fig. 1 comprehensively depicts the proposed conceptual framework for this study. The framework is designed to integrate key variables and relationships that underpin the research objectives.

3. Methodology

The research employed a quantitative research methodology to investigate the relationships between several critical factors, including Perceived Ease of Use (PEU), Perceived Usefulness (PU), Perceived Behavioral Control (PBC), Behavioral Nudges (BN), Financial Literacy (FL), Public Attitudes toward Digital Payment Systems (ATP), and the Adoption of Digital Payment Systems (ADP). This method was chosen to enable the systematic collection and quantitative analysis of empirical data, facilitating the exploration of connections among these variables. This methodology involved structured data collection using standardized survey instruments, ensuring a comprehensive examination of the relationships proposed in the study's theoretical framework. Subsequently, data analysis commenced by applying Partial Least Squares Structural Equation Modeling (PLS-SEM). This analytical approach offers several advantages, particularly in dealing with complex theoretical constructs and nonparametric data. PLS-SEM was chosen over covariance-based methods for its accuracy, simplicity, robustness, and flexibility. These characteristics prove especially advantageous when dealing with smaller sample sizes. Numerous studies have demonstrated that PLS-SEM can produce reliable results even with limited sample sizes (Hair et al., 2019; Yusr et al., 2020). Equally, the PLS-SEM analysis, conducted using SmartPLS4, facilitated a thorough examination of the research hypotheses and explored relationships among the variables under investigation. This approach allowed for rigorous testing of the research hypotheses and an in-depth investigation into the interconnections among the study variables.

4. Materials and methods

A comprehensive understanding of the types of variables utilized in this study is essential to appreciate the complexity and depth of the analysis. In this study, latent variables are those not directly observed but inferred from other variables. These include Perceived Ease of Use (PEU), Perceived Usefulness (PU), Perceived Behavioral Control (PBC), Behavioral Nudges (BN), Financial Literacy (FL), Public Attitudes toward Digital Payment Systems (ATP), and the Adoption of Digital Payment Systems (ADP). These latent variables represent underlying constructs that influence observable behaviors and attitudes toward

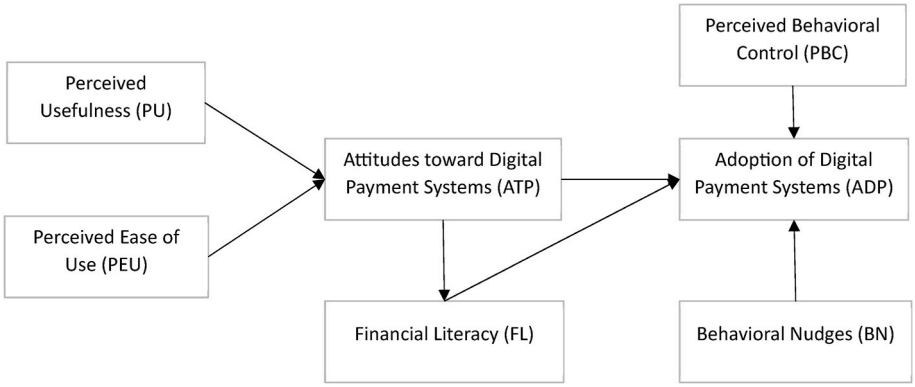

Fig. 1. Research framework.

digital payment systems. Additionally, independent variables in this study serve as predictors or causes that influence the dependent variables. The independent variables examined include PEU, PU, PBC, BN, and FL. These variables are critical in understanding how different factors contribute to the adoption and use of digital payment systems. For example, PEU and PU are rooted in the TAM, which posits that the ease of use and perceived usefulness of a technology significantly impact its acceptance and usage. PBC, derived from TPB, reflects the user's perception of control over using the technology, while BN and FL provide insights into behavioral economics and financial education's roles in technology adoption. Finally, the primary dependent variable in this study is the Adoption of Digital Payment Systems (ADP). This variable represents the outcome of interest, influenced by the aforementioned independent variables. Understanding ADP is crucial for evaluating the effectiveness of various factors in promoting the use of digital payment systems among the Cambodian population. The ADP variable helps to quantify the extent to which individuals accept and integrate digital payment systems into their daily financial transactions.

By clearly defining and categorizing these variables, the study provides a structured framework for analyzing the factors influencing digital payment system adoption. This detailed approach ensures that the relationships between variables are thoroughly examined, contributing to a more nuanced understanding of the complexities involved in technology adoption within the specific context of Cambodia.

4.1. Measurement instruments

The measurement scales were meticulously refined and adapted from pre-existing scholarly work to align with the unique elements of the Cambodian environment and the specific goals of this study. This careful tailoring of measurement instruments was critical to ensure their relevance and efficacy for the study's intended population. For the assessment of Perceived Usefulness (PU) and Perceived Ease of Use (PEU), we developed eight items in total, four for each construct, drawing inspiration from the seminal works of Davis (1989), Shaw (2014), and Venkatesh et al. (2012). These modifications have been validated in various subsequent research studies (e.g., Ly et al., 2023; Ly & Ly, 2022, 2023). Additionally, a four-item scale to evaluate Perceived Behavioral Control (PBC) and a three-item scale for the Adoption of Digital Payment Systems (ADP) inspired by the foundational theory of Ajzen (1991). Similarly, the Public Attitudes toward Digital Payment Systems (ATP) construct was operationalized through a three-item scale based on the work of Venkatesh et al. (2003). Likewise, Behavioral Nudges (BN) were encapsulated through a six-item scale, drawing on the insights of Thaler and Sunstein (2009). Finally, the dimension of Financial Literacy (FL) was measured using a five-item scale adapted from the work of Huston (2010).

To ensure a consistent understanding of financial literacy among participants, the survey included detailed explanations of financial literacy concepts. This approach aimed to mitigate discrepancies in participants' interpretation of the term. The study specifically examined the role of Cambodia-specific attributes in the adoption of digital payment systems. Factors such as cultural attitudes, economic conditions, and technological infrastructure were considered to understand their impact on the adoption process. The definitions of key terms within the Cambodian context were clearly articulated. For example, public refers to Cambodian individuals who use or have the potential to use digital payment systems, and financial literacy encompasses the ability of individuals to understand and apply financial management principles, specifically within the Cambodian economic environment. Appendix A provide a glossary table of important terms to enhance the understanding and appreciation of this study.

Furthermore, all these constructs were evaluated using a five-point Likert scale, with responses ranging from 1 (strongly disagree) to 5 (strongly agree). To ensure the validity of our measurement instrument, we employed Confirmatory Factor Analysis (CFA), as advocated by Byrne (2010). This statistical technique helped us to ascertain the relationship between observed variables and latent constructs, thus confirming the appropriateness and accuracy of our adapted scales for this research.

4.2. Participants and sampling

This study concentrated on participants from Cambodia, a demographic specifically engaged with digital transaction platforms, which lies at the heart of this inquiry into technological adoption patterns and attitudes toward electronic payment systems. The choice of this demographic is informed by its potential to yield pertinent data regarding the uptake and perception of digital payment solutions. In this study, "public" refers to the general population of Cambodia, specifically focusing on individuals who are engaged with digital transaction platforms. This demographic was chosen to yield pertinent data regarding the uptake and perception of digital payment solutions within the Cambodian context. The selection strategy employed was a purposive sampling technique, which is particularly advantageous when seeking participants that epitomize the core attributes relevant to the research aims (Palinkas et al., 2015). This technique is preferred when the research objective requires a specific population subset, such as Cambodian individuals who regularly use digital payment mechanisms.

To further validate the representativeness of the sample, additional evidence from national demographic data and digital engagement statistics was considered. The 2019 General Population Census of Cambodia reported that approximately 60% of the population is aged 25 years or younger, which aligns with our sample demographics that predominantly include young adults. Moreover, a study by Pirun et al. (2021) indicated that young adults and university-educated individuals are the primary users of digital payment platforms in Cambodia. Therefore, the selected sample not only aligns with the general age

distribution but also reflects the demographic most likely to engage with digital payment systems, supporting the argument that the sample is representative of the public attitudes towards these systems. Financial literacy in this study is defined as the ability to understand and effectively use various financial skills, including personal financial management, budgeting, and investing. This includes knowledge of basic financial concepts, the ability to apply numeracy skills in financial contexts, and an understanding of financial products and services available in Cambodia. This definition was adapted from Huston (2010) and tailored to fit the Cambodian context, considering the local financial systems and practices. To ensure that all participants had a similar understanding of "financial literacy," the study included a brief explanatory section in the survey instrument. This section provided a clear and concise definition of financial literacy, including examples of financial skills and practices relevant to the Cambodian context. This approach helped to mitigate potential differences in understanding and ensured that the responses were based on a common framework.

The study conformed to the sample size estimation parameters established by Soper (2023) In determining the requisite sample size. This protocol entailed accounting for seven observed variables and 29 latent factors, assuming a moderate anticipated effect size of 0.3, adhering to a significance threshold of 0.05, and seeking a statistical power of 0.95. These criteria initially prescribed a sample size of 247 individuals. A minimum of 50% strategically increased this figure to prevent data loss due to incomplete responses and to solidify the study's conclusions. Employing this targeted sampling method, the study gathered 359 complete and useable responses, surpassing the adjusted sample size requirement and ensuring a substantial data set for comprehensive analysis. This methodical approach to participant selection and sample size determination underscores the reliability of the subsequent evaluation of digital payment system adoption within the Cambodian context.

Demographically, the gender distribution is nearly balanced, with a slight majority of males at 51.5% compared to females at 48.5%, allowing for a gender-inclusive analysis of technology adoption trends. A significant portion of the sample comprises younger adults, with 18–35 and 36–52 age groups representing approximately 48% each, indicating that most respondents are at an age typically associated with higher technology usage and adoption rates. The older demographic, 53–64, is notably underrepresented at 4.5%, suggesting potential limitations in the data regarding older adults' digital payment attitudes and practices. The educational background of the sample is predominantly at the undergraduate and graduate levels, with nearly equal representation at around 46%, which may correlate with a greater likelihood of adopting new technologies due to potentially higher levels of digital literacy. The relatively small percentage of individuals with doctorate degrees, 7.2%, adds additional educational diversity to the sample. This demographic is representative of a significant portion of the general population. This younger demographic is more likely to engage with digital technologies, making them an appropriate focus for studying digital payment adoption. Additionally, university-educated individuals often lead technological adoption trends, thus providing insights into broader public attitudes over time.

4.3. Cambodia-specific attributes and context

The adoption of digital payment systems in Cambodia is influenced by a myriad of unique cultural, societal, economic, and regulatory factors. A critical examination of these attributes provides a deeper understanding of the contextual challenges and opportunities faced by the population in embracing such technologies. Firstly, the level of trust that Cambodians have in digital technologies plays a pivotal role. Historically, Cambodia has experienced varied levels of technological advancement and infrastructure development, impacting public trust. This trust is influenced by previous experiences with technology, the reliability of digital platforms, and societal attitudes toward digital transactions. The inherent skepticism or confidence in technology can significantly affect the willingness of individuals to adopt digital payment systems. Secondly, the economic landscape of Cambodia is a crucial determinant. The availability and accessibility of financial services vary across urban and rural areas, with urban centers generally having better access to banking infrastructure and digital services. The economic development level also dictates the population's financial capabilities and readiness to adopt new technologies. In a developing economy like Cambodia, the disparity in income levels and financial literacy can pose substantial barriers to the widespread adoption of digital payment systems. The regulatory environment in Cambodia further influences the adoption rate. Government policies and regulations can either promote or hinder the use of digital payment systems. In Cambodia, regulatory frameworks are still evolving, and the extent to which these regulations support digital payments can impact their adoption. Policies that ensure the security and privacy of digital transactions, along with initiatives to promote financial inclusion, are critical in fostering a favorable environment for digital payment systems.

Methodologically, the study accounted for these Cambodia-specific attributes by adapting the survey instruments to reflect the local context. The survey was designed using language and examples that are familiar and relevant to Cambodian participants, ensuring that the questions were comprehensible and applicable to their experiences. Pilot testing was conducted with a small sample of Cambodian participants to identify and rectify any potential issues with the survey instrument, enhancing its relevance and clarity. Additionally, a contextual analysis was performed to explore how these unique Cambodian factors influenced the adoption of digital payment systems. This analysis provided valuable insights into the specific challenges and opportunities within the Cambodian context. For instance, understanding the economic barriers, such as limited access to financial services in rural areas, helped to explain variations in adoption rates across different demographics.

Overall, this study's methodological adaptations and critical examination of Cambodia-specific attributes underscore the complex interplay between cultural, economic, and regulatory factors in the adoption of digital payment systems. By providing a nuanced understanding of the local context, the study contributes to a more comprehensive analysis of digital payment adoption, offering valuable implications for policymakers and practitioners aiming to enhance financial inclusion and technological adoption in Cambodia.

4.4. Model assessment

In the evaluation of the measurement model, emphasis was placed on three critical facets: internal consistency, along with discriminant and convergent validity, drawing upon the guidelines of Hair et al. (2011, 2016) and Henseler et al. (2009). A fundamental step in ensuring the validity of the model involved the selection of indicators, with a preference for those demonstrating outer loading values of 0.70 or higher, in line with the recommendations of Hair et al. (2016). Internal consistency and composite reliability (CR) were investigated using Cronbach's alpha coefficients. Remarkably, all coefficients exceeded the 0.70 threshold, aligning with the standards established by Fornell and Larcker (1981). This high level of Cronbach's alpha across all constructs indicates a strong convergent validity, further supported by the Average Variance Extracted (AVE) values exceeding the 0.50 benchmark. A comprehensive compilation of these results, including loadings, Cronbach's alpha, CR, and AVE, is presented in Table 1.

To ascertain discriminant validity, the study adopted a dual-method approach. The first method involved the comparison of the square root of the AVE with the correlations among different items. As per the criteria set by Fornell and Larcker (1981), for satisfactory discriminant validity, the square root of the AVE for each construct should exceed the inter-construct correlations. This condition was fulfilled, as shown in Table 2, where the square root of the AVE for each construct surpassed

Table 1
Factor loadings, reliability, and validity.

Constructs	Loadings
Perceived Ease of Use (PEU) (Cronbach's Alpha = 0.849, CR = 0.898, AVE = 0.687)	
PEU1-Learning to use digital payment systems is easy for me	0.820
PEU2-I find digital payment systems to be flexible to interact with	0.821
PEU3-It is easy for me to become skilful at using digital payment systems	0.827
PEU4-I find digital payment systems easy to use	0.848
Perceived Usefulness (PU) (Cronbach's Alpha = 0.852, CR = 0.897, AVE = 0.688)	
PU1-Using digital payment systems would be useful	0.828
PU2- Using digital payment systems facilitates my financial transactions	0.850
PU3-Using digital payment systems improves my performance in transactions	0.909
PU4-Digital payment systems improve my payment effectiveness	0.720
Perceived Behavioral Control (PBC) (Cronbach's Alpha = 0.869, CR = 0.911, AVE = 0.718)	
PBC1-I am confident in my ability to use digital payment systems	0.857
PBC2-I have control over using digital payment systems	0.865
PBC3-I am confident in my ability to handle digital payments	0.861
PBC4-I am capable of using digital payment systems	0.806
Behavioral Nudges (BN) (Cronbach's Alpha = 0.866, CR = 0.899, AVE = 0.598)	
BN1-Prompts or reminders encourage me to use digital payment systems	0.741
BN2-Discounts or rewards influence my use of digital payment systems	0.818
BN3-Using digital payment systems is recommended by friends or family	0.782
BN4-Information regarding digital payment systems has influenced me	0.713
BN5-Ease of access to digital payment systems influences my usage	0.781
BN6-My social network encourages me to use digital payment systems	0.801
Financial Literacy (FL) (Cronbach's Alpha = 0.857, CR = 0.896, AVE = 0.634)	
FL1-I understand the basic concepts of financial management	0.746
FL2-I am aware of the risks and benefits of different payment methods	0.808
FL3-I can make informed decisions about financial investments	0.827
FL4-I understand the terms and conditions of digital payment systems	0.775
FL5-I am confident in my ability to manage my finances	0.824
Attitudes toward Digital Payment Systems (ATP) (Cronbach's Alpha = 0.796, CR = 0.881, AVE = 0.712)	
ATP1-I believe that digital payment systems are beneficial	0.880
ATP2-I feel comfortable using digital payment systems	0.877
ATP3-I am enthusiastic about the use of digital payment systems	0.770
Adoption of Digital Payment Systems (ADP) (Cronbach's Alpha = 0.871, CR = 0.921, AVE = 0.796)	
ADP1-I plan to use digital payment systems for my future transactions	0.926
ADP2-I intend to increase my usage of digital payment systems in the future	0.884
ADP3-I will recommend digital payment systems to others	0.865

Table 2
Discriminant validity-fornell & larcker criterion.

	ADP	ATP	BN	FL	PBC	PEU	PU
ADP	0.892						
ATP	0.581	0.844					
BN	0.577	0.645	0.773				
FL	0.509	0.463	0.521	0.796			
PBC	0.545	0.474	0.462	0.439	0.848		
PEU	0.543	0.413	0.475	0.470	0.715	0.829	
PU	0.252	0.185	0.367	0.277	0.170	0.170	0.829
HTMT							
ADP	–						
ATP	0.695						
BN	0.659	0.760					
FL	0.568	0.540	0.601				
PBC	0.625	0.566	0.522	0.488			
PEU	0.631	0.494	0.545	0.537	0.834		
PU	0.279	0.210	0.426	0.301	0.194	0.199	–

the respective correlations between constructs. The second method applied was the heterotrait-monotrait ratio of correlations (HTMT). Following the guidelines proposed by Henseler et al. (2015), an HTMT value below 0.90 indicates acceptable discriminant validity. The findings in Table 2 confirmed that each construct met this criterion, thus affirming their discriminant validity.

4.5. Structural model

Before analyzing the outcomes of the structural model, establishing the construct validity and reliability was a critical step. The Variance Inflation Factor (VIF) was computed utilizing the Partial Least Squares Structural Equation Modeling (PLS-SEM) technique to address possible multicollinearity issues. As per the guidelines provided by Hair et al. (2011), VIF values are considered acceptable when they range between 0.20 and 5.0. In this research, VIF values were between 1.37 and 3.04, indicating that multicollinearity was not a concern. Furthermore, the study evaluated the presence of Common Method Bias (CMB) by employing Harman's single-factor test, a procedure outlined by Fuller et al. (2016) and Podsakoff et al. (2003). An unrotated factor analysis under this test revealed that a single factor accounted for only 34.03% of the variance, suggesting that CMB did not significantly impact this study. Additionally, the observation that each construct's VIF remained below the threshold of 5.0 further confirmed the absence of multicollinearity, as highlighted by O'brien (2007).

Moreover, the study then assessed the model's capability to predict endogenous constructs. This assessment involved various metrics, including the coefficient of determination (R^2), Stone-Geisser test (Q^2), path coefficients (β), and the significance of paths. Falk and Miller (1992) recommend that an R^2 value of at least 0.1 for each latent dependent variable indicates a satisfactory model. In this research, the R^2 values for ATP (0.184), FL (0.214), and ADP (0.492) reflect the proportion of variance explained by the independent variables in each dependent variable. The values suggest a moderate explanatory power for ATP and FL and a substantial explanatory power for ADP. Furthermore, The Q^2 values for ATP (0.123), FL (0.122), and ADP (0.384) indicate the model's predictive relevance, with values greater than 0 suggesting the model has predictive capabilities for each respective construct (see Table 3).

Another critical element in the PLS-SEM model evaluation is the Standardized Root Mean Square Residual (SRMR), which guards against model misspecification. The SRMR measures the standardized discrepancy between the observed and predicted correlations (Hu & Bentler, 1999; Kenny, 2020). While PLS-SEM does not have a universally agreed-upon cutoff for SRMR, it is generally accepted that a value below 0.10 reflects a satisfactory model fit (Hu & Bentler, 1998; Kara et al., 2022; Worthington & Whittaker, 2006). In this study, the SRMR was found to be 0.08, indicating that the model fit was within acceptable limits. Finally, a hypothesis test was conducted to assess the significance of the correlations within the model. The analysis revealed that all proposed hypotheses were supported. Specifically, PEU had a significant

Table 3
Hypotheses testing.

	Path coefficient	t-value	p-value	Decision
H1: PEU - > ATP	0.393	7.240	0.000	Supported
H2: PU - > ATP	0.119	2.356	0.018	Supported
H3: ATP - > ADP	0.243	4.129	0.000	Supported
H4: PBC - > ADP	0.256	5.519	0.000	Supported
H5: BN - > ADP	0.212	3.339	0.001	Supported
H6: ATP - > FL	0.463	9.613	0.000	Supported
H7: FL - > ADP	0.174	3.065	0.002	Supported
	R^2		Q^2	
ATP	0.184		0.123	
FL	0.214		0.122	
ADP	0.492		0.384	

positive effect on ATP ($\beta = 0.393$, $t = 7.240$, $p < .001$), suggesting that the easier the users perceive the digital payment system to be used, the more positive their attitude towards such systems. Similarly, PU was positively associated with ATP ($\beta = 0.119$, $t = 2.356$, $p = .018$), indicating that the system's usefulness positively influences public attitudes. Moreover, ATP had a significant positive effect on ADP ($\beta = 0.243$, $t = 4.129$, $p < .001$) and a significant positive effect on FL ($\beta = 0.463$, $t = 9.613$, $p < .001$). This suggests that positive public attitudes contribute to adopting these systems and the financial literacy of the individuals. Equally, PBC and BN were found to have significant positive effects on the ADP ($\beta = 0.256$, $t = 5.519$, $p < .001$) and ($\beta = 0.212$, $t = 3.339$, $p = .001$) respectively, implying that both an individual's perceived control over the use of digital payment systems and external behavioral nudges can facilitate the adoption process. Lastly, FL was also shown to positively affect the ADP ($\beta = 0.174$, $t = 3.065$, $p = .002$), which supports the idea that higher financial literacy can lead to greater adoption (see Table 3).

An analytical approach was employed to rigorously assess the mediating effects within the specified model using bootstrap analysis via the SmartPLS4. This particular methodology aligns with the procedural norms and guidelines set forth by Zhao et al. (2010). Central to this approach is the computation of the indirect effect, represented by the product of paths a and b, within the context of the Partial Least Squares (PLS) structural equation modeling framework. This step is critical for the effective evaluation of mediation. Further, the study involved a detailed quantification of the magnitude of the mediation effect. Adhering to the established standards and recommendations posited by Hair et al. (2016) and Zhao et al. (2010), the analysis incorporated a bootstrapping technique involving a substantial number of subsamples, totaling 5000. This extensive sampling size is pivotal in enhancing the robustness and reliability of the mediation effect estimation within the PLS model.

The mediation analysis depicted in Table 4 investigated the relationship between ATP and ADP, considering FL as a mediating variable. The total effect of ATP on ADP was significant, with a coefficient of 0.323 and a t-value of 5.558, indicating a strong positive relationship. When examining the direct effects, after accounting for the mediator, the strength of the association between ATP and ADP decreased, with a coefficient of 0.243 and a t-value of 4.129, suggesting a significant positive direct effect. Further, the indirect effects through FL (H8) were also significant. The coefficient for the indirect path ATP - > FL - > ADP was 0.081 with a t-value of 3.032, surpassing the threshold for statistical significance. The p-value of 0.002 confirms the robustness of this indirect effect. The confidence interval for the indirect effect, ranging from 0.0028 to 0.132, does not include zero, which further supports the significance of the mediation effect. These results suggest that FL partially mediates the relationship between ATP and ADP. This implies that FL contributes to the process by which ATP influences ADP, but there is also a direct effect of ATP on ADP that FL does not mediate. The findings underscore the importance of both direct and indirect influences on adopting digital payment systems, highlighting the role of financial literacy in enhancing positive attitudes toward adopting such technologies. Equally, employing the Variance Accounted For (VAF) methodology, as delineated by Hair et al. (2016), the analysis revealed that the mediating effect of the variable FL manifests with a magnitude of 0.25. This finding elucidates that FL exerts a significant, albeit partial, mediating influence within the framework of the model. This result substantiates the pivotal role of FL as an intermediary variable in the studied model, underscoring its significance in the mediation process.

Table 4
Mediation analysis.

	Total effects		Direct effects	
	Coefficient	t-value	Coefficient	t-value
ATP - > ADP	0.323	5.558	0.243	4.129
Indirect effects				
Hypotheses	Coefficient	t-value	p-value	CI[2.5%–97.5%]
H8: ATP - > FL - > ADP	0.081	3.032	0.002	0.0028–0.132

5. Discussion

Initially, the findings of this study confirm a significant and positive relationship between PEU and ADP. This substantiates the assertion that when users perceive digital payment systems as easy to use, their attitudes toward these systems become more favorable. This phenomenon can be interpreted as a direct consequence of the reduced effort required to understand and operate such systems. According to the TAM, ease of use determines perceived usefulness, influencing attitudes and eventual adoption (Davis, 1989). Our findings suggest that the simplicity and user-friendliness of digital payment systems are pivotal in shaping positive public perceptions. This result corroborates the findings of Poudel and Sapkota (2022) and Saini and Sharma (2017), who highlighted the positive influence of PEU on perceived quality, a critical aspect of attitudes.

Similarly, Andavara et al. (2021) and Siagian et al. (2022) found a direct impact of PEU on the intention to use digital payment systems, reinforcing the theory that ease of use is a crucial driver of technology acceptance. In contrast, earlier studies such as Teoh et al. (2013) and Ramayah et al. (2005) primarily focused on the influence of PEU on consumers' perception and intention to use electronic payment systems without explicitly linking it to attitudes. Our study extends this line of research by explicitly connecting PEU to attitudes, thereby enriching the TAM framework's application in understanding digital payment systems. The current study aligns with Nenandha (2020) and Sarkam et al. (2022) in identifying PEU as a significant factor influencing interest and intention to use digital payment systems. However, this study demonstrates that PEU's impact transcends mere interest and intention, profoundly affecting overall attitudes. This notably expands from traditional TAM interpretations, suggesting a broader scope of PEU's influence.

Secondly, this work enhances the understanding of the TAM in the context of digital payment systems, highlighting perceived usefulness as a critical factor in their acceptance and adoption. Within TAM, usefulness is typically regarded as the degree to which an individual believes a system will improve their job performance. When applied to digital payments, this concept encompasses beliefs about the systems' potential to offer increased convenience, security, and transaction efficiency. This interpretation aligns with the traditional TAM framework, focusing on functional advantages and emphasizing the improvements in user experience these systems might provide. Corroborating this viewpoint, research by Saini and Sharma (2017) and Kavitha and Kannan (2020) identified perceived usefulness as a crucial determinant shaping consumer attitudes toward technology. The present study expands upon these findings by examining more complex interactions, such as the indirect influence of perceived ease of use on usefulness, as highlighted by Andavara et al. (2021).

In contrast to earlier research that primarily concentrated on the direct impacts of perceived usefulness, this study adopts a more comprehensive perspective, similar to the approaches proposed by Moti and Walia (2020) and Siagian et al. (2022). This broader view integrates additional factors like compatibility and social influence, thereby enriching the concept of perceived usefulness in digital payment systems. The findings of this study align with those of Jayantari et al. (2021), who noted the significant effect of perceived usefulness on repurchase intentions. However, the study diverges from the focus of Alshurideh et al. (2021), who emphasized the role of trust and security in enhancing perceived usefulness. Instead, it broadens the exploration to include a more comprehensive array of factors contributing to perceived usefulness and attitudes toward digital payment systems. This comprehensive approach facilitates a deeper understanding of the

multifaceted influences that drive the adoption of digital payment technologies.

Moreover, this study corroborated the strong influence of public attitudes toward digital payment systems on their adoption in Cambodia. It emphasizes that such attitudes are not just passive indicators but crucial drivers of financial behaviors in digital environments. This insight is consistent with the TPB, which suggests that attitudes, subjective norms, and perceived behavioral control shape behavioral intentions. Specifically, in digital payments, positive perceptions about ease, usefulness, security, and societal norms play a pivotal role in fostering the intent to use these systems. This perspective extends the traditional TPB framework by incorporating elements pertinent to digital financial transactions. This study supports previous findings by Kurniawan et al. (2019) and Chaveesuk et al. (2021) regarding the shift in consumer spending toward online transactions and the influential role of attitudes in this transition. It also aligns with the insights of Mensah et al. (2021) and Aydin and Burnaz (2016), who underscored the importance of performance expectancy, effort expectancy, and perceived security in shaping these attitudes.

Additionally, it reinforces the fundamental concepts of the technology acceptance model, particularly the significance of perceived ease of use and usefulness, as noted by Al-Okaily et al. (2020). Thus, what sets this study apart is its comprehensive approach to understanding digital payment adoption. It goes beyond the foundational principles of the TPB and technology acceptance model by considering a broader range of factors, including societal and personal influences. This approach offers a more detailed understanding of consumer behavior in the context of digital financial transactions.

Similarly, this study underscores a substantial and positive correlation between perceived behavioral control and adopting digital payment systems in Cambodia, in line with the TPB. It suggests that the more individuals feel in control of using these systems, the more likely they are to adopt them, a notion particularly relevant in Cambodia, where digital infrastructure and literacy are developing. While other research, such as Chaveesuk et al. (2021) and Mensah et al. (2021), highlights perceived risk and performance expectancy in adoption intentions, our findings contribute by emphasizing the pivotal role of perceived control in technology adoption models, especially in emerging markets like Cambodia. Consistent with Ayudya and Wibowo (2018), our results indicate that perceived behavioral control significantly influences the intention to use mobile payment services. However, this contrasts with Filona and Misdiyono (2019), who found no significant impact of perceived ease of use on the intention to use electronic money. This difference may be due to Cambodia's unique technological and cultural environment, where factors such as infrastructure and digital literacy significantly influence perceptions of control.

Equally, this study demonstrates that behavioral nudges, as conceptualized in Behavioral Economics Theory, significantly impact the public adoption of digital payment systems. These nudges and subtle environmental modifications influence decision-making and behavior without coercion or direct incentives. The observed significant relationship indicates that minor adjustments in the consumer environment can lead to notable shifts in adopting digital payment systems. This finding aligns with Choi and Loh (2021), who noted the influence of minor factors like ATM closures on increased digital platform usage. The results also resonate with the work of Chaveesuk et al. (2021), emphasizing the role of attitudes and perceived risks in digital payment adoption, and reinforce the importance of trust in technology adoption, as highlighted by Kanojia and Lal (2020) and Patil et al. (2018).

In contrast to traditional models that focus on overt incentives or informational campaigns, the findings from this study suggest that subtle nudges can be equally, if not more, effective in influencing consumer behavior toward digital payment systems. While in agreement with studies such as those by Almarashdeh et al. (2018) and Yang et al. (2012) regarding the factors influencing technology adoption, this research distinguishes itself by explicitly examining the effectiveness of behavioral nudges. This differs from the approach of Sivathanu (2018), who explored behavioral intention and innovation resistance during significant economic changes in India by concentrating on the more subtle and ongoing influences that shape consumer behavior in a less dramatic but equally impactful way.

Additionally, this study established a significant, positive link between public attitudes towards digital payment systems and financial literacy in Cambodia. It supports the hypothesis that a favorable perception of these systems correlates with higher financial literacy, examined through the Diffusion of Innovations Theory lens. This theory highlights the importance of relative advantage and complexity in adopting new technologies. This suggests that their financial literacy improves as individuals become more receptive to digital payment systems. This improvement may stem from increased interaction with financial concepts and tools integral to these systems. Therefore, using and comprehending digital payment mechanisms might act as a driving force for broader financial education, especially in Cambodia's rapidly evolving digital economy. This finding aligns with Histori (2022) and Prete (2021), who noted a significant influence of financial literacy on utilizing digital payment systems. However, this study proposes a bidirectional relationship: financial literacy impacts the adoption of digital systems and boosts financial literacy using these systems. This contrasts with Azeez and Akhtar (2021), who focused on socio-economic factors in rural India, suggesting a more universally applicable link between attitudes towards digital payment systems and financial literacy. Unlike Ullah et al. (2022), who emphasized digital literacy in Pakistan's mobile payment and banking adoption, this study indicates that positive attitudes towards digital payment systems foster overall financial literacy, not just digital literacy. This distinction highlights the potential of digital payment systems as educational tools for enhancing financial knowledge and decision-making.

Furthermore, this study establishes a significant positive correlation between financial literacy and the adoption of digital payment systems. Individuals with a higher understanding of financial concepts are more likely to utilize digital payment methods, highlighting the vital role of financial literacy in embracing new financial technologies. This finding is consistent with the perspectives of Histori (2022) and Prete (2021), who emphasized the crucial role of financial literacy in using digital payment systems. The results support the Behavioral Economics Theory, which suggests that economic decisions are partially influenced by an individual's knowledge and cognitive biases. Financial literacy equips individuals with the knowledge and confidence to navigate digital payment platforms effectively, thus mitigating cognitive biases against new technologies.

Moreover, these outcomes align with the diffusion of innovations theory, indicating that financial literacy is an enabler that accelerates the adoption of digital payment innovations. The findings align with Ullah et al. (2022) and Kara et al. (2022), who observed that financial skills and literacy positively impact the intention and capability to adopt mobile payment systems. Additionally, the research resonates with the work of Azeez and Akhtar (2021) and Balakrishnan and Shuib (2021), highlighting socio-economic and readiness factors as significant in adopting digital payment systems. In contrast, the current study places a greater emphasis on the direct influence of financial literacy as a standalone factor, diverging slightly from the findings of Susanto et al. (2022, 2022), who identified a broader range of factors, including trust, perceived risk, and socio-economic conditions, as influencing the adoption of digital payment systems.

Finally, this study found that financial literacy mediates the relationship between public attitudes toward digital payment systems and the adoption of digital payment systems. This suggests that positive public attitudes towards digital payment systems alone are not sufficient to drive their adoption. Instead, these attitudes become more impactful when coupled with financial literacy. Financial literacy enhances the public's understanding and appreciation of the benefits of digital payment systems, thereby facilitating their adoption. This finding implies

that initiatives aimed at improving financial literacy could be pivotal in increasing the uptake of digital payment technologies. These findings align with the research of Histori (2022) and Ullah et al. (2022), who emphasized the significant role of financial and digital literacy in adopting digital payment systems. However, it extends these findings by highlighting the specific mediating role of financial literacy, a perspective not thoroughly explored in previous studies. The results also resonate with the insights of Patil et al. (2017) and Meiryani et al. (2021), who identified perceived usefulness as a key determinant in adopting digital payment systems. However, our study suggests that the effect of perceived usefulness on adoption is enhanced through the mediating influence of financial literacy. While Trütsch and Nikolaus (2021) found that financial literacy does not directly impact payment instrument choice, this study suggests that financial literacy influences how attitudes toward digital payment systems translate into actual adoption. Additionally, Chaveesuk et al. (2021) and Kim et al. (2016) highlighted the importance of attitudes and perceived risk. However, this study adds the dimension of financial literacy as a critical mediator in this process.

6. Limitations and future research

Despite the significant contributions of this study, some limitations should be acknowledged. First, the study was conducted within a specific context—digital payment systems in Cambodia—which may limit the generalizability of the findings to other regions or technological environments. The unique socio-economic and technological infrastructure of Cambodia influences perceptions and adoption behaviors, which may not be directly applicable to countries with different levels of technological development or cultural attitudes toward digital finance. Future research should consider conducting similar studies in other regions to validate the findings in different socio-cultural and economic settings. Second, this study primarily employed quantitative data gathered through surveys, which might not fully capture the nuanced perceptions and experiences of users regarding digital payment systems. Survey-based research is often constrained by the respondents' understanding and willingness to provide accurate information, leading to potential biases. Qualitative methods, such as interviews or focus groups, could complement the quantitative approach by offering deeper insights into user attitudes and behaviors, thus providing a more comprehensive understanding of the factors influencing digital payment adoption. Third, the study relied on self-reported data, which can be subject to social desirability bias, especially when investigating topics like financial literacy or digital payment adoption. Respondents may overestimate their use or understanding of digital payment technologies, resulting in skewed data. Future research could utilize objective measures, such as digital payment transaction data, to minimize the biases associated with self-reported information. Additionally, while the study explored perceived ease of use, perceived usefulness, attitudes, and financial literacy, it did not consider other potentially relevant factors, such as perceived trust, risk, or technological readiness, which could further impact the adoption of digital payment systems. Future research should incorporate these additional factors to create a more holistic model of digital payment adoption. Lastly, this study focused on perceived ease of use and usefulness as critical components of TAM but did not explore the long-term behavioral changes or retention associated with digital payment usage. Longitudinal studies could provide valuable insights into how attitudes and perceptions evolve over time and the factors that contribute to the sustained use of digital payment technologies.

7. Conclusion

This work established a substantial and affirmative correlation between the PEU and ADP, corroborating the principles of the TAM. This outcome underscores the pivotal role of user-friendliness in cultivating favorable public opinions toward these systems. Moreover, the study extends the TAM's perceived usefulness criterion to include aspects like enhanced convenience, heightened security, and transactional efficiency, which significantly sway consumer attitudes toward technological adoption. This study further validates the significant effect of public attitudes on embracing digital payment methods in Cambodia, indicating these attitudes as crucial determinants of financial conduct. This insight broadens the scope of the traditional TPB, integrating specific elements pertinent to digital financial interactions. The investigation notably spotlights the critical influence of perceived behavioral control in adopting digital payment systems, especially within burgeoning markets such as Cambodia. Significantly, the findings illuminate the impact of behavioral nudges — minor yet strategic modifications in the consumer environment — on the uptake of digital payment methods. This highlights the potential of such nudges in steering consumer behavior in favor of these systems.

Furthermore, the study uncovers a significant and reciprocal connection between public attitudes towards digital payment systems and financial literacy. This interplay suggests that while financial literacy influences the adoption of digital systems, conversely, the usage of these systems also enhances financial literacy. The research reveals that financial literacy mediates public attitudes towards digital payment systems and their adoption. This discovery proposes that initiatives focused on augmenting financial literacy could bolster the acceptance of digital payment technologies. Overall, this study offers critical insights into the dynamics shaping the adoption of digital payment systems. It accentuates the significance of factors such as perceived ease of use, perceived usefulness, public attitudes, perceived behavioral control, behavioral nudges' effectiveness, and financial literacy's role. These insights bear substantial implications for various stakeholders, including practitioners, policymakers, system designers, educators, and researchers in digital payments and financial technology.

8. Implications

Theoretically, this study advances our understanding of technology adoption by integrating the TAM, TPB, Behavioral Economics, and the Diffusion of Innovations Theory. It reaffirms the importance of PEU, as highlighted in TAM, emphasizing its critical role in influencing ADP, thereby underscoring that ease of use is a pivotal determinant in technology acceptance. The research extends TAM's scope by including additional factors like convenience, security, and transaction efficiency, thus providing a more comprehensive view of the drivers of technology adoption, especially in digital payment systems. Moreover, the study enriches the TPB framework by highlighting the significance of PBC in adopting digital payment systems, particularly in emerging markets. In line with Behavioral Economics, the research underscores the impact of subtle behavioral nudges and environmental cues on technology adoption decisions. This aspect reveals the profound influence of indirect factors in shaping consumer behavior and technology acceptance. Additionally, the study integrates the diffusion of innovations theory principles, shedding light on how innovations spread among populations and the factors that accelerate or hinder this process. It particularly examines the role of financial literacy in adopting digital payments, suggesting a reciprocal relationship between innovation diffusion and consumer knowledge.

From a practical perspective, this work offers actionable insights for the digital payments and fintech sectors. It suggests that focusing on user-friendliness, security, and efficiency in designing and developing digital payment systems can significantly influence their adoption. This aligns with the core principles of Behavioral Economics, where the design and presentation of technology can guide user behavior. The study also highlights the importance of enhancing financial literacy, resonating with the Diffusion of Innovations Theory. By improving public understanding of digital payment systems, the adoption rate can be accelerated, facilitating the spread of this innovation. Educational

programs and policy initiatives aimed at increasing financial literacy are thus crucial for fostering widespread acceptance and use of digital payment technologies. Finally, the research suggests further exploration into the role of behavioral nudges and the factors influencing Perceived Behavioral Control, considering different cultural and economic contexts. This opens new paths for investigation in technology adoption, combining insights from Behavioral Economics and the Diffusion of Innovations Theory.

CRediT authorship contribution statement

Romny Ly: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Bora Ly:** Writing – review & editing, Writing – original draft, Software, Methodology, Investigation, Data curation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Glossary of Important Terms

Term	Definition	Source
Perceived Usefulness (PU)	The degree to which a person believes that using a particular system would enhance their job performance.	Davis (1989)
Perceived Ease of Use (PEU)	The degree to which a person believes that using a particular system would be free of effort.	Davis (1989); Venkatesh et al. (2012)
Perceived Behavioral Control (PBC)	The perceived ease or difficulty of performing the behavior, as influenced by past experience and anticipated obstacles.	Ajzen (1991)
Adoption of Digital Payment Systems (ADP)	The acceptance and use of digital payment methods such as mobile payments and online banking.	Ajzen (1991)
Public Attitudes toward Digital Payment Systems (ATP)	Public perceptions and opinions about the use and benefits of digital payment systems. In the context of Cambodia, this includes attitudes and opinions from a diverse cross-section of Cambodian society, including different age groups, socioeconomic statuses, education levels, and urban and rural populations.	Venkatesh et al. (2003); adapted for the Cambodian context
Behavioral Nudges (BN)	Subtle changes in the environment that influence people's behavior in predictable ways.	Thaler and Sunstein (2009)
Financial Literacy (FL)	The ability to understand and effectively use various financial skills, including personal financial management, budgeting, and investing, within the specific socio-economic context of Cambodia. This includes knowledge of basic financial concepts, the ability to apply numeracy skills in financial contexts, and an understanding of financial products and services available in Cambodia.	Huston (2010); adapted for the Cambodian context

Data availability

Data will be made available on request.

References

Adil, M. H., & Hatekar, N. R. (2020). Demonetisation, banking and trust in 'bricks' or 'clicks'. *South Asia Research, 40*(2), 181–198.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179–211.

Al-Okaily, M. (2024). So what about the post-COVID-19 era?: Do users still adopt FinTech products? *International Journal of Human-Computer Interaction*, 1–15.

Al-Okaily, M., Lutfi, A., Alsaad, A., Taamneh, A., & Alsyouf, A. (2020). The determinants of digital payment systems' acceptance under cultural orientation differences: The case of uncertainty avoidance. *Technology in Society, 63*, Article 101367.

Almarashdeh, I., Bouzkraoui, H., Azouaoui, A., Youssef, H., Niharmine, L., Rahman, A., Yahaya, S. S. S., Atta, A., Egbe, D. A., & Murimo, B. M. (2018). An overview of technology evolution: Investigating the factors influencing non-bitcoins users to adopt bitcoins as online payment transaction method. *Journal of Theoretical and Applied Information Technology, 96*(13), 3984–3993.

Alshurideh, M. T., Kurdi, B. H. A., Masa'deh, R.e., & Salloum, S. A. (2021). *The moderation effect of gender on accepting electronic payment technology: A study on United Arab Emirates consumers*.

Andavara, V., Sundaram, B., Bacha, D., Dadi, T., & Karthika, P. (2021). The impact of perceived ease of use on intention to use mobile payment services for data security applications. In *2021 second international conference on electronics and sustainable communication systems (ICESC)* (pp. 1875–1880).

Ardiansah, M., Chariri, A., Rahardja, S., & Udin, U. (2020). The effect of electronic payments security on e-commerce consumer perception: An extended model of technology acceptance. *Management Science Letters, 10*(7), 1473–1480.

Avital, M., Hedman, J., & Albinsson, L. (2017). Smart money: Blockchain-based customizable payments system. *Dagstuhl Reports, 7*(3), 104–106.

Aydin, G., & Burnaz, S. (2016). Adoption of mobile payment systems: A study on mobile wallets. *Journal of Business Economics and Finance, 5*(1), 73–92.

Ayudya, A. C., & Wibowo, A. (2018). The intention to use E-money using theory of planned behavior and locus of control. *Jurnal Keuangan dan Perbankan*.

Azeez, N. P. A., & Akhtar, S. M. J. (2021). *Digital financial literacy and its determinants: An empirical evidences from rural India*.

Balakrishnan, V., & Shuib, N. L. M. (2021). Drivers and inhibitors for digital payment adoption using the Cashless Society Readiness-Adoption model in Malaysia. *Technology in Society, 65*, Article 101554.

Barkhordari, M., Nourollah, Z., Mashayekhi, H., Mashayekhi, Y., & Ahangar, M. S. (2017). Factors influencing adoption of e-payment systems: An empirical study on Iranian customers. *Information Systems and e-Business Management, 15*, 89–116.

Byrne, B. M. (2010). Multivariate applications series. In *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd ed.). Routledge/Taylor & Francis Group.

Cao, T. K., Dang, P. L., & Nguyen, H. A. (2016). Predicting consumer intention to use mobile payment services: Empirical evidence from vietnam. *International Journal of Marketing Studies, 8*, 117–124.

Carbó-Valverde, S., Cuadros-Solas, P. J., Rodríguez-Fernández, F., & Ey. (2020). The effect of banks' IT investments on the digitalization of their customers. *Global Policy, 11*, 9–17.

Chakraborty, S., & Mitra, D. (2018). A study on consumers adoption intention for digital wallets in India. *International Journal on Customer Relations, 6*(1), 38–57.

Chaveesuk, S., Khalid, B., & Chaiyasoonthorn, W. (2021). Digital payment system innovations: A marketing perspective on intention and actual use in the retail sector. *Innovative Marketing*.

Chen, P.-W., Jiang, B.-S., & Wang, C.-H. (2017). Blockchain-based payment collection supervision system using pervasive Bitcoin digital wallet. In *2017 IEEE 13th international conference on wireless and mobile computing, networking and communications (WiMob)*.

Choi, H.-S., & Loh, R. K. (2021). *Nudges and digital banking adoption**.

Curtis, H., Hogeveen, B., Kang, J., Le Thu, H., Rajagopalan, R. P., & Ray, T. (2022). *Digital Southeast Asia*.

Danladi, S., Prasad, M., Modibbo, U. M., Ahmadi, S. A., & Ghasemi, P. (2023). Attaining sustainable development goals through financial inclusion: Exploring collaborative approaches to fintech adoption in developing economies. *Sustainability, 15*(17), Article 13039.

Das, A., & Das, D. (2020). Perception, adoption, and pattern of usage of FinTech services by bank customers: Evidences from Hojai District of Assam. *Emerging Economy Studies, 6*(1), 7–22.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 319–340.

Eswaran, K. K. (2019). Consumer perception towards digital payment mode with special reference to digital wallets. *Research Explorer, 22*.

Falk, R. F., & Miller, N. B. (1992). *A primer for soft modeling*. University of Akron Press.

Filona, F., & Misdiyono, M. (2019). Factors affecting the adoption of electronic money using technology acceptance model and theory of planned behavior. *Jurnal Ilmiah Ekonomi Bisnis, 24*(1), 108–120.
Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research, 18*(3), 382–388.
Fuller, C. M., Simmering, M. J., Atinc, G., Atinc, Y., & Babin, B. J. (2016). Common methods variance detection in business research. *Journal of Business Research, 69*(8), 3192–3198. https://doi.org/10.1016/j.jbusres.2015.12.008
Gautam, R. S., Rastogi, S., Rawal, A., Bhimavarapu, V. M., Kanoujiya, J., & Rastogi, S. (2022). Financial technology and its impact on digital literacy in India: Using poverty as a moderating variable. *Journal of Risk and Financial Management*.
Gokilavani, R., Kumar, D. V., Durgarani, M., & Mahalakhsmi, R. (2018). Can India move towards digital sovereign currency? A study on perception of consumers towards. *International Journal of Pure and Applied Mathematics, 119*(17), 2167–2175.
Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8 ed.). Cengage Learning.
Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage publications.
Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice, 19*(2), 139–152.
Hasan, F., Al-Okaily, M., Choudhury, T., & Kayani, U. (2024). A comparative analysis between FinTech and traditional stock markets: Using Russia and Ukraine war data. *Electronic Commerce Research, 24*(1), 629–654.
Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*(1), 115–135.
Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In *New challenges to international marketing*. Emerald Group Publishing Limited.
Histori, S. O. (2022). Financial literacy, social influence and the use of digital payments: A literature review. In *Proceeding of the international conference on economics and business*.
Hu, L.-t., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods, 3*(4), 424.
Hu, L.t., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 1–55.
Huston, S. J. (2010). Measuring financial literacy. *Journal of Consumer Affairs, 44*(2), 296–316.
Jayantari, I. A. A. U., Wardana, M., Ketut, I. G. A., Giantari, & Setiawan, P. Y. (2021). *Perceived usefulness, perceived ease of use, and consumer satisfaction on repurchase intention of digital wallet service (e-wallet)*.
Johnson, V. L., Kiser, A., Washington, R., & Torres, R. (2018). Limitations to the rapid adoption of M-payment services: Understanding the impact of privacy risk on M-Payment services. *Computers in Human Behavior, 79*, 111–122.
Kanojia, P., & Lal, M. (2020). *Impact of trust on customer adoption of digital payment systems*.
Kara, E., Kirpik, G., & Kaya, A. (2022). A research on digital violence in social media. In *Handbook of research on digital violence and discrimination studies*. IGI Global.
Karsen, M., Chandra, Y. U., & Juwitasary, H. (2019). Technological factors of mobile payment: A systematic literature review. *Procedia Computer Science, 157*, 489–498.
Kavitha, K., & Kannan, D. (2020). Factors influencing consumers attitude towards mobile payment applications. *MKTG: Consumer Behavior (Sub-Topic)*.
Kavitha, M., & Kumar, K. S. (2018). A study on digital payments system with perspective of customer's adoption. *Eurasian Journal of Analytical Chemistry, 13*(1), 189–200.
Kenny, D. A. (2020). Measuring model fit. Retrieved December 25, 2021 from http://davidakenny.net/cm/fit.htm.
Kim, Y., Choi, J., Park, Y., & Yeon, J. (2016). The adoption of mobile payment services for "fintech". *International Journal of Applied Engineering Research, 11*, 1058–1061.
Kirana, M. Y., & Havidz, S. A. H. (2020). Financial literacy and mobile payment usage as financial inclusion determinants. In *2020 international conference on information management and technology (ICIMTech)* (pp. 905–910).
Kotecha, P. S. (2018). An empirical study of mobile wallets in India. *Online Journal of Multidisciplinary Subjects Research Guru, 11*(4), 605–611.
Kumar, P., & Chaubey, D. S. (2017). Demonetization and its impact on adoption of digital payment: Opportunities, issues and challenges. *Abhinav National Monthly Refereed Journal of Research in Commerce & Management, 6*(6), 15.
Kurniawan, B., Wahyuni, S., & Valentina, T. (2019). The influence of digital payments on public spending patterns. *Journal of Physics: Conference Series, 1402*.
Leang, P., Ramsamy, S. S., Phaphuangwittayakul, A., & Loahavilai, P.-o. (2023). Consumer perceptions and behaviors on digital payment adoption among older generation Z and younger millennials in Phnom Penh, Cambodia. *International Journal of Professional Business Review: Int. J. Prof. Bus. Rev., 8*(8), 22.
Lim, S., & Anderson, E. O. (2023). The analysis of factors influencing digital payment in Cambodia. In *Proceedings of the 2023 7th international conference on E-commerce*. E-Business and E-Government.
Liu, Y., Luo, J., & Zhang, L. (2021). The effects of mobile payment on consumer behavior. *Journal of Consumer Behaviour, 20*(3), 512–520.
Ly, B., & Ly, R. (2022). Internet banking adoption under technology acceptance model—evidence from Cambodian users. *Computers in Human Behavior Reports, 7*, Article 100224.
Ly, B., & Ly, R. (2023). Emerging trends in social media for E-governance and citizen engagement: A case study of telegram in Cambodia. *Computers in Human Behavior Reports*, Article 100347.
Ly, B., Ly, R., & Hor, S. (2023). Zoom classrooms and adoption behavior among Cambodian students. *Computers in Human Behavior Reports, 9*, Article 100266.
Meiryani, M., Hanna Uli Pakpahan, N., Chang, A., Salim, G., & Zulkarnain, A. (2021). Analysis of public perception of interest in using financial technology as a payment media. In *Proceedings of the 2021 5th international conference on E-business and internet*.
Mengheng, S. (2023). NBC launches Cambodian shared Switch. *Kiripost*. Retrieved August 05, 2023 from https://kiripost.com/stories/cambodia-nbc-launches-cambodian-shared-switch-css-atm.
Mensah, I. K., Zeng, G., Chuanyong, L., Zhi-wu, X., & Lu, M. (2021). Factors predicting the behavioral adoption of electronic payment system (EPS). *International Journal of Information Systems in the Service Sector, 13*, 88–104.
Moti, D. B., & Walia, N. (2020). The effects of compatibility, social influence, and perceived ease of use on perceived usefulness of mobile payment services. *International Journal of Scientific & Technology Research, 9*, 1865–1873.
Narith, P., Chanminea, S., & Socheat, M. (2024). Adoption of electronic cash payment among students: A case study of Siem Reap build bright university. *Journal of Mathematics Instruction, Social Research and Opinion, 3*(1), 33–48.
Nenandha, N. (2020). The influence of perceived usefulness, perceived ease of use, and perceived risk in using digital payment services in accounting students. *Jurnal Ekonomi Trisakti*.
O'brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality and Quantity, 41*(5), 673–690. https://doi.org/10.1007/s11135-006-9018-6
Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research, 42*, 533–544.
Patil, P. P., Dwivedi, Y. K., & Rana, N. P. (2017). Digital payments adoption: An analysis of literature. *IFIP International Conference on e-Business, e-Services, and e-Society*.
Patil, P. P., Rana, N. P., & Dwivedi, Y. K. (2018). Digital payments adoption research: A meta-analysis for generalising the effects of attitude. In *Cost, innovativeness, mobility and price value on behavioural intention*. TDIT.
Pirun, C., Siriwat, C., & Darlin, N. (2021). Developing Cambodia's digital economy: A youth perspective. In *7th annual NBC macro economic conference*.
Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879.
Poudel, O., & Sapkota, M. P. (2022). Consumer perception toward digital payment system. *Management Dynamics*.
Prete, A. L. (2021). Digital and financial literacy as determinants of digital payments and personal finance. *Decision: Financial Decision-Making (Topic)*.
Putrevu, J., & Mertzanis, C. (2023). The adoption of digital payments in emerging economies: Challenges and policy responses. *Digital Policy, Regulation and Governance* (ahead-of-print).
Ramayah, T., Chin, Y. L., Suki, N., & Ibrahim, A. (2005). *Determinants of intention to use an online bill payment system among MBA students*.
Rathore, H. S. (2016). Adoption of digital wallet by consumers. *BVIMSR's journal of management research, 8*(1), 69.
Riandani, O., Sari, D. P., Rubiyanti, N., Moeliono, N. K., & Fakhri, M. (2022). The relationship between digital wallet adoption and usage to financial inclusion. In *Proceedings of the international conference on industrial engineering and operations management*.
Rogers, E. M., Singhal, A., & Quinlan, M. M. (2014). Diffusion of innovations. In *An integrated approach to communication theory and research* (pp. 432–448). Routledge.
Saini, G. S., & Sharma, S. (2017). Factors affecting consumers' perception towards E-payment systems in India. *International Journal of Computer Simulation, 2*, 23–31.
Sam, V. (2021). Formal credit usage and gender income gap: The case of farmers in Cambodia. *Agricultural Finance Review, 81*(5), 675–701.
Sarkam, N. A., Mohamad Razi, N. F., Mohammad, N. H., Jamil, N. I., & Kurniawati, L. (2022). Attitudes, security, and perceived ease of use influence the consumers' decision to use an E-payment system. *International Journal of Academic Research in Business and Social Sciences*.
Shaw, N. (2014). The mediating influence of trust in the adoption of the mobile wallet. *Journal of Retailing and Consumer Services, 21*(4), 449–459. https://doi.org/10.1016/j.jretconser.2014.03.008
Siagian, H., Tarigan, Z. J. H., Basana, S. R., & Basuki, R. (2022). The effect of perceived security, perceived ease of use, and perceived usefulness on consumer behavioral intention through trust in digital payment platform. *International Journal of Data and Network Science*.
Singh, S., & Rana, R. (2017). Study of consumer perception of digital payment mode. *Journal of Internet Banking and Commerce, 22*(3), 1–14.
Sivathanu, B. (2018). Adoption of digital payment systems in the era of demonetization in India. *Journal of Science and Technology Policy Management*.
Soper, D. S. (2023). *A-Priori sample size calculator for structural equation models* [Software].
Stephen, A. T. (2016). The role of digital and social media marketing in consumer behavior. *Current opinión in Psychology, 10*, 17–21.
Susanto, E., Solikin, I., & Purnomo, B. S. (2022). A review of digital payment adoption in asia. *Advanced International Journal of Business, Entrepreneurship and SMEs, 4*(11), 1–15.
Teoh, W. M.-Y., Chong, S. C., Lin, B., & Chua, J. W. (2013). Factors affecting consumers' perception of electronic payment: An empirical analysis. *Internet Research, 23*, 465–485.
Thaler, R. H., & Sunstein, C. R. (2009). *Nudge: Improving decisions about health, wealth, and happiness*. Penguin.

Tiwari, P., Garg, V., & Singhal, A. (2019). A study of consumer adoption of digital wallet special reference to NCR. In *2019 9th international conference on cloud computing.* Data Science & Engineering (Confluence).

Trütsch, T., & Nikolaus, M.-D. (2021). *Financial literacy and payment behaviour: Evidence from payment diary survey data*. Financial Literacy eJournal.

Ullah, S., Kiani, U. S., Raza, B., & Mustafa, A. R. (2022). Consumers' intention to adopt m-payment/m-banking: The role of their financial skills and digital literacy. *Frontiers in Psychology, 13*.

UNICEF Cambodia. (2019). Voices of youth applications open. Retrieved November 03, 2023 from https://www.unicef.org/cambodia/stories/voices-youth-applications-open.

Vally, K. S., & Divya, K. H. (2018). A study on digital payments in India with perspective of consumer's adoption. *International Journal of Pure and Applied Mathematics, 119* (15), 1259–1267.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science, 46*(2), 186–204.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 425–478.

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly, 36*(1), 157–178. https://doi.org/10.2307/41410412

Vinitha, K., & Vasantha, S. (2017). Factors influencing consumer's intention to adopt digital payment-conceptual model. *Indian Journal of Public Health Research and Development, 8*, 170–175.

Worthington, R. L., & Whittaker, T. A. (2006). Scale development research: A content analysis and recommendations for best practices. *The Counseling Psychologist, 34*(6), 806–838.

Yang, S., Cao, Y., Mao, W., Zhang, R., & Luo, L. (2012). Determinants of behavioral intention to mobile payment: Evidence from China. In *2011 7th international conference on advanced information management and service (ICIPM)* (pp. 151–154).

Yoo, S. (2017). Blockchain based financial case analysis and its implications. *Asia Pacific Journal of Innovation and Entrepreneurship, 11*(3), 312–321.

Yusr, M. M., Salimon, M. G., Mokhtar, S. S. M., Abaid, W. M. A. W., Shaari, H., Perumal, S., & Saoula, O. (2020). Green innovation performance! How to be achieved? A study applied on Malaysian manufacturing sector. *Sustainable Futures, 2*, Article 100040.

Yuvaraj, S., & Sheila Eveline, N. (2018). Consumers' perception towards cashless transactions and information security in the digital economy. *International Journal of Mechanical Engineering & Technology, 9*(7), 89–96.

Zhao, X., Lynch, J. G., Jr., & Chen, Q. (2010). Reconsidering baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research, 37*(2), 197–206. https://doi.org/10.1086/651257