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Cashless payment adoption in Vietnam's informal family-operated businesses and traditional market enterprises

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ABSTRACT

The study investigates the use of cashless payment behaviors in informal family businesses and traditional market organizations in Vietnam. A quantitative approach is employed, utilizing structured survey data collected from 969 valid respondents, comprising small traders operating within informal and traditional market settings in Ho Chi Minh City. Structural Equation Modeling (SEM) analysis is conducted on the survey data using SmartPLS, with a specific focus on the relationships among traditional payment behaviors, government support, and cashless payment behaviors. The results indicate that consumers find it challenging to transition from cash payment behaviors to cashless transactions, primarily because they have been using cash for a long time. Additionally, government support plays a significant role in encouraging consumers to adopt digital payments. Sellers also desire to use non-cash methods. This will significantly influence their success, provided that regulations and infrastructure are favorable. The findings suggest that tax incentives, investments in infrastructure, and financial incentives can help facilitate a faster transition to cashless payments. The study supports the idea that small businesses can develop solutions through targeted marketing and support programs, thereby improving their transition into the Vietnamese digital market. It explores the unique challenges faced by small sellers, contributing to the limited research on adaptation to cashless payments in informal markets and developing countries. Additionally, the study highlights the crucial role of government in supporting the digital transition.

Contribution/Originality: This study contributes to the literature by examining cashless payment adoption in Vietnam's informal family-run businesses and traditional markets, an under-researched area. It is one of the few studies to investigate the role of traditional payment habits and government support in this context. The primary finding is that government support reduces reliance on cash, thereby facilitating the adoption of cashless payments.

1. INTRODUCTION

Financial technology (fintech) has revolutionized financial services and banking worldwide, redefining how services are provided within the banking sector. Fintech offers greater convenience in banking services for developed markets, while it also creates new opportunities for populations that are unbanked or underbanked in developing markets (Namahoot & Jantasri, 2023). The growth and adoption of new digital payment technologies, in particular, have facilitated the transition from traditional payment methods to cashless and contactless forms of payment (Patil,

Tamilmani, Rana, & Raghavan, 2020). Cashless transactions have proliferated in everyday activities, including shopping, travel, bill payments, airline tickets, food delivery, charitable donations, and investing (Munikrishnan, Al Mamun, Kok Sue Xin, Ham, & Naznen, 2024). An example of the rapid advancement of digital payments can be observed in Vietnam, where the total transaction value is projected to reach USD 101.55 billion in 2025. This figure will account for approximately 0.5% of the global digital payments market, which is valued at USD 20.37 trillion (Statista, 2025). Vietnam's digital payments market is expected to have a compound annual growth rate (CAGR) of 18.92% between 2025 and 2029, which is higher than the global CAGR of 15.90% over the same period (Statista, 2025), indicating significant growth potential ahead.

The majority of research in Vietnam has so far focused almost exclusively on the consumer perspective (Dieu, Al Mamun, Nguyen, & Naznen, 2025; Wang, Nguyen, Jiang, Nguyen, & Saleem, 2023), as well as large institutions (Loh, Lee, Tan, Ooi, & Dwivedi, 2021; Trianto, Nik Azman, & Masrizal, 2025). However, there has been insufficient research specifically related to informal family-owned businesses or traditional markets, which are vital components of the national economy. These businesses may encounter challenges in adopting cashless payment methods, such as limited digital literacy, underdeveloped supporting infrastructure, and inadequate government support (Santoso et al., 2021; Trianto et al., 2025). One of the primary obstacles for informal family enterprises and marketplaces is the traditional nature of their payment methods, which hinders the adoption of cashless systems (Loh et al., 2021; Senyo, Karanasios, Gozman, & Baba, 2022). Recent studies in the area of cashless payments have predominantly employed the UTAUT model to examine technological variables; however, there remains a gap in understanding traditional payment methods (Gupta, Dhingra, Tanwar, & Aggarwal, 2023; Senyo et al., 2022). Additionally, although government support is crucial, it has not been sufficiently studied, particularly concerning small vendors in traditional marketplaces (Trianto et al., 2025). Furthermore, demographic factors such as age, wealth, and digital literacy influence attitudes and behaviors regarding changes in payment methods. This area remains under-researched, especially within the context of Vietnam.

Based on these gaps, this study aims to answer two research questions:

RQ1: How does the influence of traditional payment habits affect the intention to adopt cashless payments and the acceptance of cashless payments among small vendors in traditional markets?

RQ2: How do government support factors impact and moderate the relationships between traditional payment habits, the intention to adopt cashless payments, and the acceptance of cashless payments among small vendors in traditional markets?

The investigation of these research questions may assist in understanding the different dynamics and challenges small firms encounter when engaging in the process of digital transition. More specifically, their investigations will be necessary to better articulate those matters that inhibit growth, as well as identify factors that either render small firms adaptable or help them become adaptable. As the digital payment ecosystem continues to evolve, the report will propose practical recommendations for governments to create enabling frameworks and support businesses overall. Finally, the report will suggest policies to promote the growth and stability of cashless payments as part of the broader digital economy for small businesses and the economy at large.

2. THEORY AND HYPOTHESES DEVELOPMENT

2.1. Theory Background

Bansal, Taylor, and James (2005) created the Push-Pull-Mooring model illustrates how individuals transition from traditional payment methods to electronic payments, influenced by three primary factors: push, pull, and mooring. In this context, government support acts as a push factor, facilitating consumers' migration from conventional payment behaviors to digital systems. Measures such as tax reductions, incentives for technological investments, and infrastructure upgrades can significantly aid consumers especially microenterprises in this transition, as they perceive direct benefits from such government interventions (Loh et al., 2021). On the contrary,

traditional payment methods serve as a stabilizing factor, making the transition to electronic payments more challenging. Customers are often hesitant to move away from cash and adopt electronic payment services, primarily due to their familiarity with cash as a preferred payment method (Bansal et al., 2005). Thus, these factors collectively explain why some users remain hesitant to migrate, even when the government provides assistance.

2.2. Hypotheses Development

2.2.1. Cashless Payment Adoption

Cashless payments are transactions conducted using a payment system that does not require the exchange of physical currency (Esawe, 2022; Raj, Amilan, Aparna, & Swaminathan, 2024). Cashless payment methods can include, but are not limited to, credit/debit cards, e-wallets, QR codes, bank transfers, and other electronic payment options (Raj, Amilan, & Aparna, 2024). Cashless payment options simplify the process and reduce the time required to complete financial transactions, while also providing a more secure and trustworthy approach to financial dealings. Cashless payments illustrate a shift by individuals and organizations away from cash-based transactions toward electronic payment methods. This transition signifies a move towards a world where people are willing, capable, and open to using digital payment options in their daily business practices and transaction processes (Trianto et al., 2025).

Businesses are capable of and often expected to adopt current digital technologies and evolving consumer preferences. Cashless payment solutions are particularly relevant in this context. For organizations aiming to remain competitive and successful in today's e-commerce environment and digital payment systems, cashless payments are essential. The adoption of digital payments can transform the shopping experience by streamlining the transaction process. As a result, customers tend to be more satisfied, loyal, and more likely to repeat business (Barkhordari, Nourollah, Mashayekhi, Mashayekhi, & Ahangar, 2017). Cashless payment systems not only provide customer convenience but also streamline payment processes, reduce transaction costs, and improve operational efficiencies. This indicates that both merchants and consumers can conduct transactions more quickly, securely, and easily (Gupta & Prusty, 2024). The importance of Fintech in facilitating cashless payments through flexible methods that enable seamless digital transactions for both organizations and consumers has been extensive (Gomber, Koch, & Siering, 2017). E-wallets and payment application software, such as PayPal, Alipay, MoMo, and Apple Pay, have revolutionized the process of making purchases in various contexts, including the digital purchase of goods or services and in-person transactions (Trianto et al., 2025). On average, the B2C segment has been growing at a rate of 8.9% per month, surpassing the B2B segment. This growth is primarily driven by decreasing transaction costs, increased consumer purchases, and a rise in the use of cashless payments (Trianto et al., 2025).

The implementation of cashless payment systems has been analyzed through applied theory using the Technology Acceptance Model (TAM) (Davis, 1989) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis, & Davis, 2003). These models highlight the importance of embracing technology from both business and consumer perspectives, while considering the factors involved in their decision to adopt alternative forms of digital payment. By adopting these systems, businesses gain a competitive advantage over e-commerce and demonstrate their receptiveness to integrating new technologies and meeting consumer expectations, which is vital for their survival in a digital era. Governments and banks are facilitating the growth of electronic payments by reducing costs, enabling businesses, and implementing additional layers of security (Trianto et al., 2025). To this point, the widespread adoption of WeChat Pay and Alipay in China has contributed to a decline in the popularity of cash transactions (Trianto et al., 2025). E-commerce platforms and digital delivery services have also increased the ease of cashless payments by incorporating incentives, rewards, and payment systems into apps such as Grab and Gojek (Trianto et al., 2025).

Digital payments offer numerous advantages; however, they also pose challenges, including security vulnerabilities, financial fraud, and consumer readiness (Arner, Buckley, Zetzsche, & Veidt, 2020). Building trust in electronic transaction systems will depend on continued investments in payment infrastructure, educating the public,

and increasing security (Trianto et al., 2025). For firms, going cashless not only serves an economic rationale but is also necessary for sustainability, innovation, and growth in the digital economy.

2.2.2. Intention to Switch to Cashless Payments

The intention to adopt cashless payments reflects customers' readiness to engage with and utilize electronic payment technologies, including contactless payments, in future transactions (Loh et al., 2021). The Unified Theory of Acceptance and Use of Technology (UTAUT) suggests that the intention to adopt technology predicts actual usage behavior; however, the intention to switch is also a crucial factor influencing real-world usage patterns. Several theoretical frameworks, such as the Technology Acceptance Model (TAM) (Davis, 1989), TAM2 (Venkatesh & Davis, 2000), and UTAUT (Venkatesh et al., 2003), have been employed to examine the transition to cashless transactions by enterprises. In the era of rapid digitalization, cashless payments facilitate easier, more cost-effective, and efficient transactions, providing customers with a faster, more convenient, and safer experience (Gupta & Prusty, 2024). The desire to transfer funds frequently indicates a broader trend of abandoning outdated services in favor of innovative options (Yusfiarto, Sunarsih, & Darmawan, 2023). Mu and Lee (2022) classified this behavior into complete or partial transitions. Venkatesh et al. (2003) argue that the intention to use is a significant factor influencing actual behavior, and Ajzen (1991) claims that the intention to use is a strong predictor of switching behavior. The shift to cashless payments demonstrates that businesses and their customers can adapt to evolving customer preferences and technological trends, which can enhance customer satisfaction and loyalty (Barkhordari et al., 2017). Additionally, various payment methods, such as online credit cards, cryptocurrencies, and e-banking, are essential for transactions between businesses and customers, among individuals, and within organizations (Nguyen & Huynh, 2018). The "intention to switch" motivates businesses to move away from traditional payment methods toward cashless options. Intentions are significant predictors of behavioral change (Ajzen, 1991). When businesses are committed to transformation, their likelihood of adopting cashless payments increases, thereby enhancing their competitiveness in the digital economy (Trianto et al., 2025). This progression ultimately benefits both businesses and consumers, fostering a more efficient and innovative financial environment.

H_1: The intention to switch to cashless payments has a positive impact on the adoption of cashless payments.

2.2.3. Traditional Payment Habits

Conventional payment practices include cash, debit, and credit card transactions that are ingrained in the habits of individuals and businesses (Visconti-Caparrós & Campos-Blázquez, 2022). Conventional payment habits or practices can create reluctance for people to experiment with previous payment options or payment options that are familiar or conventional, creating an aversion to new payment systems, including digital wallets or contactless payments (Loh et al., 2021). Why do people continue to use these older methods of payment? They do so because they believe these methods are safe, easy, and reliable, which leads to path dependence in non-cash payment systems (Gupta et al., 2023). Familiarity with conventional payment methods is one of the most significant factors contributing to inertia among individuals and businesses. Many people lack the inclination or interest in transitioning to digital payment methods, even when such systems offer better security and convenience. This reluctance is primarily due to comfort and trust in traditional payment methods, (Gupta et al., 2023; Visconti-Caparrós & Campos-Blázquez, 2022). The lounge is possibly the most impacted segment regarding inertia. People often have an ingrained reliance on cash because it is a considerable expense to invest in new technologies, enhance staff training and operational structure (Loh et al., 2021). Additionally, using traditional payment methods makes people feel as though they are mitigating risks associated with cybersecurity breaches, system and data misuse, and technology failures; these are already specific and common concerns associated with cashless shopping. Often, these perceptions of risk lead many merchants to prefer traditional payment options (Visconti-Caparrós & Campos-Blázquez, 2022) leaving consumers disinterested in trying new payment methods.

There exists a strong resistance to the adoption of electronic payment systems, as neither businesses nor consumers tend to adopt an unfamiliar payment system when there is a high level of comfort with the established means of payment. The comfort, security, and ease of transitioning to established payment systems contribute to consumer and business reluctance to adopt less-established systems (Loh et al., 2021). The research undertaken in the Push-Pull-Mooring (PPM) model identifies traditional payment systems as a 'mooring' factor that creates mental obstacles against alternative payment solutions (Gupta et al., 2023; Loh et al., 2021). The entrenched nature of these existing behaviors leads to a diminishing intention to adopt electronic payments and ultimately reduces the willingness to switch (Gupta & Prusty, 2024). Additionally, clients exhibit reluctance to incorporate electronic payments into their transactions because they tend to feel more comfortable and secure when making traditional payments, even if they are more inclined to use electronic payment systems (Bhuasiri, Zo, Lee, & Ciganek, 2016). These factors combined contribute to a decreased tendency to switch to other payment methods and reduce the likelihood of electronic payments for routine transactions (Gupta & Prusty, 2024; Trianto et al., 2025). Based on these factors, we synthesized the following hypotheses to make the appropriate assessments.

H_2: Traditional payment habits significantly decrease cashless payment adoption.

H_3: Traditional payment habits significantly decrease the intention to switch to cashless payment.

2.2.4. Government Support

The academic literature indicates that government support is essential for the effective utilization of innovations and the deployment of new technologies, especially for small and medium enterprises (SMEs), mobile payment applications, and micro-entrepreneurs. Initially, governments have assumed the role of funding and establishing policy frameworks to foster innovation and guide digital transformation processes. For instance, the South Korean government operates the SME Technology Development Fund (TDAF) to assist small and medium-sized businesses (SMEs). The government allocates substantial funding to TDAF to enhance the competitiveness of SMEs and facilitate their ability to secure patents (Doh & Kim, 2014). The Thai government improved security, which led to greater trust in e-tax services (Bhuasiri et al., 2016). The Malaysian government has also implemented incentives for mobile payment services. These incentives include legislative measures and financial assistance aimed at changing customers' attitudes and behaviors towards mobile payment systems (Ling, Lim, Wong, & Lee, 2025). Following the demonetization, India has created programs and laws to support retention of mobile payment systems (Verma, Chaurasia, & Bhattacharyya, 2020). The governments of Indonesia and Malaysia are assisting small business owners in scaling their enterprises by clearly demonstrating a supportive environment and robust technological infrastructure. These support programs have facilitated easier access for graduates to financial services (Trianto et al., 2025). Following these informal norms and the use of support systems has helped build inclusive financial ecosystems and advance sustainable business development. Consequently, these businesses competing in the market are better positioned. By developing appropriate technology in addition to enacting legislation that favors electronic payment platforms, governments can influence the adoption of electronic payment systems systematically. The QRIS initiative has facilitated small businesses throughout Indonesia to begin embracing electronic payments, while simultaneously incentivizing customers to utilize electronic methods of payment (Trianto et al., 2025). Likewise, ensuring that transactions are secure and legislating for the protection of personal information will foster trust among users, thereby encouraging the adoption of electronic payment methods. As Thailand's electronic tax security system has improved, the use of electronic payments has continued to increase, as citizens become more confident in their usage (Bhuasiri et al., 2016).

Governments can assist individuals in learning more about the value of electronic payments through effective communication, which will facilitate greater acceptance of contactless-based payments across different segments of society (Ling et al., 2025). The government's influence is significant in that it can determine how many individual users and organizations engage in electronic payments and the number of individuals interested in modifying their

payment practices. Through aid and incentives to individuals, the government can support a transition to electronic payment systems. Malaysia's e-Tunai Rakyat program is an example of financial assistance through vouchers for electronic wallets. The e-Tunai Rakyat program is likely to have increased the likelihood that individuals will shift from cash-based payments to electronic payments (Ling et al., 2025). Furthermore, the government can also significantly enhance security and assist in implementing legislation related to data protection for users, thereby building trust and reducing security concerns. Ultimately, this increases consumer satisfaction and improves their likelihood of using electronic payments (Bhuasiri et al., 2016). Governments can facilitate broad use of electronic payments by providing the necessary technologies and standards to make it easier for people to use them. An initiative in Indonesia known as the Quality Rating and Improvement System (QRIS) is an instance where the goal is to encourage the use of electronic payments by both small companies and their customers, and, as a result, will enable more people to make electronic payments (Trianto et al., 2025). Governments can also promote trust among consumers in electronic payment systems by implementing privacy laws and regulations that safeguard personal information. Such measures would help alleviate customer concerns regarding risks and financial fraud, thereby facilitating electronic payments from both consumer and business perspectives (Bhuasiri et al., 2016). So, pertaining to this, we would like to test the following hypothesis:

H_4: Government support significantly increases the intention to switch to cashless payments.

H_5: Government support significantly increases cashless payment adoption.

Financial support initiatives from the government, such as e-wallet vouchers, reduce electronic payment costs and encourage consumers to use alternatives to cash in adopting contactless payments (Ling et al., 2025). Moreover, transitioning from traditional payment systems to electronic payment systems offers businesses and consumers immediate financial benefits through government tax incentives and currency assistance programs (Trianto et al., 2025). By establishing policies and regulations concerning proprietary data and safety measures, the government can eliminate fears surrounding electronic payments and reduce reliance on cash and/or check payments (Bhuasiri et al., 2016). Government communication initiatives can serve as an opportunity for consumer education regarding the benefits of electronic payments. These initiatives can also influence consumer payment patterns, encouraging the integration of newer payment systems into everyday transactions (Ling et al., 2025). Therefore, we propose the following hypothesis.

H_6: Government support significantly decreases traditional payment habits.

The negative repercussions of traditional payment methods can be mitigated by providing cash to customers and establishing regulations that promote electronic payment platforms, such as electronic vouchers for e-wallets. These measures will create barriers to the transition from cash to electronic methods, making the shift easier by reducing the friction and costs associated with each payment method (Ling et al., 2025). Additionally, protection measures and data governance rules may provide consumers with a greater sense of safety when using electronic payments and reduce friction for those consumers who have previously paid in person (Bhuasiri et al., 2016). Finally, consumer communication initiatives that are government-driven can help consumers understand some of the friction associated with electronic payments; this can, in turn, reduce the barriers to transitioning from traditional methods to electronic payment systems (Ling et al., 2025). Any government initiatives aimed at improving necessary infrastructure, alongside a payment method incentive program, will reduce the impact that traditional payment methods have on cashless options. This approach will generate new hypotheses for further exploration.

H_7: Government support significantly moderates the negative impact of traditional payment habits on the intention to switch to cashless payment.

H_8: Government support significantly moderates the negative impact of traditional payment habits on the adoption of cashless payments.

Governments can also significantly influence the relationship between the desire to switch and the actual use of cashless payment systems. For example, when consumers demonstrate a strong desire to transition to electronic

payment systems, governments may facilitate this shift by providing financial support and improving technological infrastructure. Such measures can lead to a more efficient and accelerated adoption of cashless payment methods, ultimately fostering a more widespread acceptance and usage of digital financial services (Trianto et al., 2025). Tax incentives could also encourage businesses to adopt cashless payment systems, which facilitate electronic transactions. Once again, when the government provides assistance programs, a larger economic benefit to both consumers and businesses occurs with the switch, which suggests a higher likelihood of adopting cashless payment systems (Bhuasiri et al., 2016). Thus, this forms a mechanism by which the government not only provides a more definitive commitment to cashless payments but also ensures more effective and lasting change. Therefore, the following hypothesis is produced.

H_9: Government support positively moderates the effect of the intention to switch to cashless payment on cashless payment adoption.

3. METHODOLOGY

3.1. Research Scale

An important element of the research methodology was the implementation and adjustment of the measurement scale. The measurement scale was developed utilizing the frameworks established by Loh et al. (2021) and Trianto, Nguyen, and Hoang (2023) to ensure that it functions across a broad range of economic, social, and cultural circumstances. However, the measurement scale required adjustments for use in Vietnam, particularly with small businesses, in order to better align with the local context. The adjustment process included focus group discussions and individual interviews with experts, which assisted in clarifying meanings that were inconsistent and in maintaining the quality and integrity of the survey questions.

3.2. Sampling and Data Collection Method

The study involved a careful selection of research samples to accurately represent the target population, which consisted of business households in traditional markets and informal businesses across multiple districts in Ho Chi Minh City. A stratified convenience sampling method was employed to collect data, resulting in approximately 1,100 survey respondents from 21 districts throughout Ho Chi Minh City, thereby demonstrating the representativeness and generalizability of the research results. Data was collected in Ho Chi Minh City, Vietnam, from January to April 2025 through direct surveys conducted in traditional markets, spontaneous markets, and informal businesses. Paper-based questionnaires were utilized to gather survey responses. The collected data was then coded for analysis using SPSS for descriptive statistics and also processed in SmartPLS 4 for further data analysis.

3.3. Methodological Bias Testing

To mitigate problems associated with Common Method Bias (CMB), we employed techniques designed to isolate potential psychological influences. These included providing reverse-coded questions, utilizing separation techniques, collecting surveys across different contexts and time frames within the program, and employing various sources of inquiry (Nguyen-Viet, Nguyen-Duy, & Nguyen-Viet, 2025). The data collection method employed involved conducting online surveys across 232 established and developing markets in Ho Chi Minh City. These surveys covered a broad range of content and varied in program durations, resulting in a diverse dataset. The questionnaire items were reviewed and evaluated by industry professionals to improve internal consistency and effectively minimize common method bias (CMB) (Nguyen-Viet et al., 2025). In addition, a thorough exploration of multicollinearity contributes to the examination of the Variance Inflation Factor (VIF), which corroborates the identification of multicollinearity (Nguyen-Viet et al., 2025).

3.4. Data Collection and Processing Method

We collected data through direct surveys of merchants at traditional markets. A 5-point Likert scale, ranging from "Strongly Disagree" to "Strongly Agree," was employed to gauge participants' opinions. After collection, the data were cleaned by removing duplicate or incorrect responses to ensure consistency in answers across all questions. Paper-based questionnaires were distributed to both formal and informal businesses in Ho Chi Minh City, covering 232 traditional and spontaneous markets. Each market received between 6 and 8 surveys. The responses were coded into data and analyzed using SPSS for descriptive statistics and SmartPLS 4 for further data processing (Nguyen-Viet et al., 2025). This research method guarantees objectivity and precision in data collection and analysis, while establishing a robust theoretical and practical foundation for suggesting enhancements to electronic payment systems in Vietnam's digital economy.

The data collected included 969 valid survey responses from 1,100 distributed questionnaires that were examined and revised. Many responses were rejected due to issues such as identical answers for all questions or missing responses in certain sections of the paper-based questionnaires. Table 1 shows the descriptive statistics for the improved sample data.

Table 1. Demographic profiles.

Measure items	Frequency	%
Business type		
Fixed stall	220	22.7
Sidewalk	180	18.6
Home-based	185	19.1
Seasonal	195	20.1
Other	189	19.5
Business category		
Meat, seafood	210	21.7
Dried foods	180	18.6
Consumer goods	190	19.6
Food & beverage services	185	19.1
Other services	204	21.0
Business duration		
Less than 6 months	250	25.8
6 months to 1 year	230	23.7
1 to 3 years	240	24.8
Over 3 years	249	25.7
Bank account		
Have	530	54.7
Do not have	439	45.3

4. RESULT

4.1. Measurement Model Evaluation

Cronbach's alpha for the scale exceeded 0.6, indicating acceptable composite reliability (Hair & Alamer, 2022) Table 2). Hair and Alamer (2022) determined that the average variance extracted (AVE) convergence for all items exceeded 0.5. The external loadings of the measurement model surpassed 0.5, signifying convergence and internal consistency (Fornell & Larcker, 1981). Discriminant validity requires that the square root of a construct's Average Variance Extracted (AVE) exceeds its bivariate correlation with other components of the model (Hair & Alamer, 2022). Table 3 indicates that the square root of AVE values (bold diagonal elements) ranged from 0.844 to 0.898. Each variable exhibited a correlation below the square root of the Average Variance Extracted (AVE), and the indicators demonstrated discriminant validity. Consequently, discriminability was achieved.

Table 2. Constructs with items and reliability and validity.

Research constructs	OL	CA	CR	AVE
Cashless payment adoption (AE) adopted from Trianto et al. (2023)				
My store intends to accept cashless payments.	0.875	0.905	0.907	0.724
My store intends to regularly accept cashless payments over the next six months.	0.830			
In the future, my store intends to continue accepting cashless payments.	0.869			
My store will strongly promote the use of cashless payment applications to others.	0.843			
My store will use cashless payments in daily transactions.	0.836			
Intention to switch to cashless payments (SE) adopted from Loh et al. (2021)				
My store is considering transitioning from cash to cashless payments.	0.898	0.881	0.893	0.738
My store plans to transition from cash payments to cashless payment methods in the future.	0.792			
The likelihood of my store transitioning from cash to cashless payments is high.	0.890			
My store is determined to switch from cash to cashless payments.	0.852			
Traditional payment habit (TH) adopted from Loh et al. (2021)				
Whenever payment is required, my store subconsciously requests cash payments.	0.892	0.920	0.920	0.806
Whenever a payment is required, my store recommends using cash without considering other available options.	0.900			
It will be difficult to control the tendency to use cash when my store suggests paying or receiving payments.	0.901			
My store does not need to focus much thought on deciding whether to suggest using cash for payments or receiving payments.	0.898			
Government support (GS) adopted from Trianto et al. (2023)				
My store received an initiative from the government due to the use of cashless payment applications.	0.846	0.901	0.943	0.712
The government provides tax exemptions to businesses that utilize cashless payment applications.	0.881			
The government encourages and supports the adoption of cashless payments.	0.799			
The government has established comprehensive regulations and laws to facilitate the use of information technology.	0.812			
The government ensures the availability of adequate infrastructure for online payments, including cashless payment systems.	0.878			

Note: OL: Outer loading, CR: Composite reliability, AVE: Average variance extracted.

Table 3. Results of test for discriminant validity.

Concept	Fornell-Lacker criterion				HTMT			
	AE	GS	SE	TH	AE	GS	SE	TH
AE	**0.851**							
GS	0.382	**0.844**			0.406			
SE	0.751	0.432	**0.859**		0.834	0.464		
TH	-0.653	-0.252	-0.655	**0.898**	0.714	0.249	0.722	

Note: The bold diagonal elements are the square root of the variance shared between the constructs and their measures; off-diagonal elements are the correlations among constructs.

4.2. Structural Model Assessment and Hypothesis Outcomes

We assessed potential associations utilizing structural equation modeling. We employed R^2 and cross-validated residual (Q^2) bootstrapping for the structural model sampling test (Hair & Alamer, 2022). The R^2 values in this study indicated that three factors cashless payment adoption (0.564), inertia (0.275), and the intention to transition to cashless payments (0.618) explained the variance in the respective variables. Specifically, the R^2 values were 0.622 for cashless payment adoption, 0.063 for traditional payment habits, and 0.519 for the intention to transition to cashless payments. These results suggest that these factors account for a significant proportion of the variation within the model. Subsequently, the Q^2 values were calculated using the blindfolding procedure, yielding 0.160 for cashless payment adoption, 0.153 for the intention to switch to cashless payments, and 0.060 for traditional payment habits. These values indicate that the model possesses satisfactory predictive relevance. Additionally, the normalized mean-squared residual was employed to calibrate the model. The SRMR for this model was 0.057, which indicates a good fit, as it is below the commonly accepted threshold of 0.08 (Nguyen-Viet et al., 2025). Additionally, our examination

of CMB revealed that the VIF values, which ranged from 1.793 to 3.433, were below the threshold of 5 (Hair & Alamer, 2022). This study did not examine the issues associated with multicollinearity.

Path coefficients and t-values were estimated using bootstrapping with 5,000 subsamples at a significance level of α=0.05 to evaluate the measurement model's precision and to test the proposed hypotheses. A comprehensive summary of the correlations is presented in Figure 1.

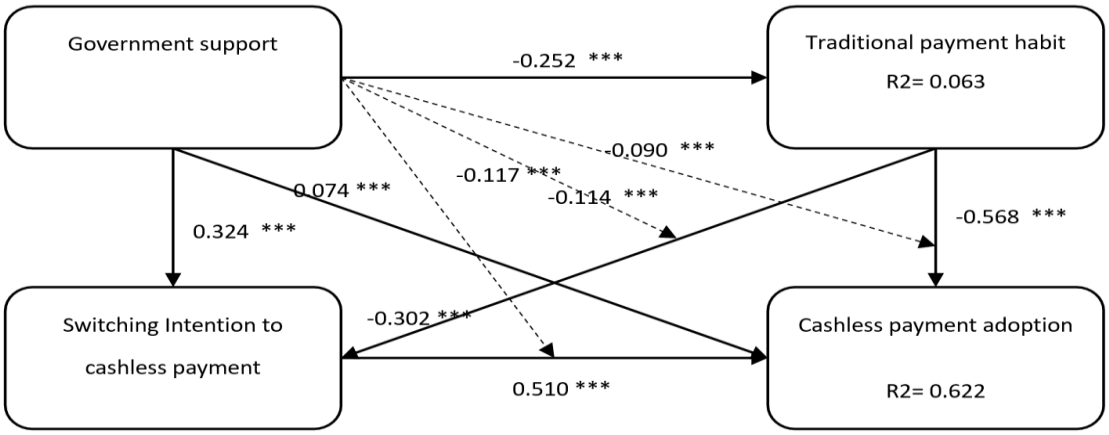

Figure 1. Structural model test results.

Note: ***Significant at 1% level (p-value < 0.01); n.s: non-significant.

5. DISCUSSION AND IMPLICATIONS

5.1. Discussion

The findings reveal a significant relationship between the desire to change and cashless payment behavior (β = 0.510, P-value = 0.000). In other words, when businesses opt to accept cashless payments, the adoption of such payment methods can typically be implemented smoothly without much difficulty (Trianto et al., 2025). Businesses are quickly recognizing how effective cashless payments can be, and are therefore implementing cashless payment systems. This will make paying for both businesses and customers much easier (Gupta & Prusty, 2024). The desire to change is an important factor that helps businesses address issues and consider new technologies (Loh et al., 2021).

Based on conventional payment methods, individuals are less likely to abandon them in favor of cashless payment options (β = -0.302, P-value = 0.000). Additionally, they are less inclined to abandon traditional payment methods for any alternative in the future (β = -0.568, P-value = 0.000). This tendency is primarily driven by their preference for more conventional payment methods, such as cash, which serve as a "mooring" factor within the Push-Pull-Mooring theory by Bansal et al. (2005). Moreover, in previous studies, organisational inertia, derived from conventions and past practices, might suppress motivation and serve as a barrier to the acceptance of electronic payment systems (Gupta et al., 2023; Loh et al., 2021). Even though organizations are aware of the advantages of cashless systems, this has made it more difficult for them to implement these systems effectively (Loh et al., 2021).

Assistance from the government has demonstrated a positive impact on both switching intentions (β = 0.324, P-value = 0.000) and the adoption of cashless payments (β = 0.074, P-value = 0.008). In essence, public policy can support organizations in overcoming challenges associated with transitioning from cash to electronic payments (Trianto et al., 2025). The study indicates that government assistance significantly and negatively influences reliance on cash payments (β = -0.252, p-value = 0.000), suggesting that effective public policies may reduce dependence on cash transactions. Government initiatives, whether through incentives, infrastructure investments, or direct support for small businesses, are likely to facilitate the transition to electronic payment systems, making it easier for organizations to consider, test, and adopt such systems (Gupta & Prusty, 2024). Furthermore, government support appears to mitigate the negative effects of reliance on cash payments on plans to switch and the use of cashless payments (β = -0.114, P-value = 0.000 and β = -0.090, P-value = 0.002; (Trianto et al., 2025)). Overall, the

government plays a crucial role in creating supportive environments that can enhance business confidence during the transition and reduce anxiety related to adopting new technologies (Gupta & Prusty, 2024).

The findings of this research suggest that government assistance may decrease the likelihood of individuals receiving cashless payments. The beta value of -0.090 and the P-value of 0.002 indicate that government assistance may slow the implementation or utilization of cashless payments. This analysis implies that government support could help alleviate challenges associated with traditional payment methods, which some perceive as cumbersome or less efficient. Essentially, government or community programs, or services perceived as mobile application support, may create dependence on assistance, leading to an unwillingness among consumers and businesses to shift to electronic payment methods.

Businesses might avoid changing longstanding payment practices or expectations when they associate such assistance or incentives with government backing; they have learned to expect this type of support from the government. Additionally, government assistance may help lower mental barriers to adopting cashless payment options and increase confidence and trust among businesses to utilize new payment methods, as evidenced by the beta value of -0.252 and a P-value of 0.000. Therefore, well-designed government policies are crucial to mitigate the drawbacks of reliance on traditional payment methods while simultaneously promoting electronic payments through programs supported by the government. However, these policies must be carefully crafted to prevent the development of dependency while encouraging businesses to develop and adopt new technologies (Gupta & Prusty, 2024; Trianto et al., 2025).

5.2. Theoretical Implications

The results of this study regarding the first research question have significant implications for the development of theories explaining the role of habitual payment behaviors in the transition to cashless payments. The continued prevalence of cash usage and other habitual payment behaviors among the general population may impede the adoption of various cashless payment systems. According to the Push-Pull-Mooring (PPM) model, habitual payment behaviors function as part of the "mooring" component, which is defined as a critical factor that creates resistance to adopting new technologies. This perspective aligns with existing literature on customer inertia and reluctance to disrupt established business practices (Polites & Karahanna, 2012). The findings of this study indicate that these types of behaviors contribute to restricting consumer use of cashless payments (Bansal et al., 2005). The findings of this study extend the PPM framework concerning consumer attitudes towards cashless payments. The results suggest that continued reliance on habitual behaviors contributes significantly to resistance against adopting digital alternatives. This emphasizes the importance of habitual behaviors and inertia in influencing acceptance behaviors for new technologies (Samuelson & Zeckhauser, 1988).

In response to RQ2, theoretical contributions enhance our understanding of the impacts of government-sponsored aid on traditional payment behaviors, transitions to cashless payment behaviors, and cashless payment behaviors in practice. Underlying important factors that could assist in addressing issues surrounding normal payment behaviors include government-assisted programs such as tax incentive programs and infrastructure support initiatives, which are becoming increasingly essential. Government policies support the transition from traditional payments to digital payments by acting as a "push" factor, consistent with the general theory of technology adoption in emerging economies (Doh & Kim, 2014). This finding highlights the importance of extrinsic factors such as government intervention in the design process. This paper elaborates on and provides some relevance to government policy, and how policy solutions could dramatically accelerate the digital transformation of small firms. Additionally, this paper contributes to the emerging body of literature that illustrates government involvement in the diffusion of technology, especially in informal sectors where traditional behaviors and activities persist around cash-only payments due to logistical, infrastructural, and functional issues (Bhuasiri et al., 2016).

5.3. Managerial Implications

This research offers essential managerial implications for small business owners, particularly those operating within traditional and informal markets. The key finding indicates that traditional payment options, especially cash, exert significant control over resistance to cashless payment systems. The deeply ingrained nature of these traditional options presents substantial psychological barriers, which hinder small merchants from adopting new technologies (Gupta et al., 2023). To mitigate this situation, managers should focus on strategies that would alleviate such barriers. This entails demonstrating the benefits of cashless payment systems. Specifically, these benefits include enhanced customer satisfaction, reduced transaction costs, and increased efficiency (Barkhordari et al., 2017; Trianto et al., 2025). Training sessions or training that address the safety and convenience of cashless payments may ultimately alleviate the fear factor. This may lead small businesses to embrace new technological advancements.

The engagement of governments must also be an essential factor in the transition to cashless payments. The financial burden and technical barriers associated with providing digital payment systems would be less of an obstacle for small businesses if they can participate in government programs (e.g., tax credits) and leverage infrastructure and marketing initiatives (Trianto et al., 2025). More importantly, simply participating in government programs will help small businesses adopt cashless payment systems (e.g., access to financial support, digital infrastructure). If they can incorporate these programs into their plans, they will be able to engage in cashless payments at a lower cost (Bhuasiri et al., 2016). This government support would create a more conducive environment for growth and competition, as well as help organizations adopt new technologies.

Beyond government support, owners of small businesses may offer consumers and vendors a combination of both financial and non-financial signals to encourage the adoption of cashless payment systems. For example, if merchants provide loyalty rewards or slightly lower prices for cashless payments to consumers and vendors, these users may be more inclined to transition to a cashless payment system (Raj et al., 2024). Trust can also be built between businesses and customers through educational workshops that teach individuals about the safety of cashless payment systems and the risks of fraud often associated with digital payments. Collectively, this approach will likely lead to an increase in users of the service and the development of a loyal customer base, which can create either a new revenue stream or provide a competitive advantage against rivals (Gupta & Prusty, 2024).

To successfully implement cashless payments, it is essential to invest in digital skills and infrastructure. Small businesses must ensure that their employees and key vendors possess adequate digital skills for basic computer use to effectively manage electronic payments. Investing in digital skills and infrastructure, such as mobile payment terminals and reliable Internet access, will not only facilitate the digital adoption process but also enhance an organization's operational efficiency (Trianto et al., 2025). Firms that invest in these levels of the digital economy will, firstly, become more operationally efficient and will also develop a working environment recognized as innovative and customer-focused, which will become increasingly important in a digital ecosystem. Once small businesses begin their digital journey in these areas, they will be able to transition successfully to cashless payment options in a seamless and productive manner, supporting their success in today's ever-evolving marketplace.

5.4. Limitations and Future Research

There are several important considerations in this research. Firstly, the study focused on constructs related to Traditional Payment Behavior and Government Support for the adoption of cashless payment acceptance, while neglecting other significant constructs such as Inertia or Switching Costs, which warrant further investigation. Secondly, the research was conducted in Ho Chi Minh City; therefore, its findings are not generalizable to other regions of Vietnam or to other countries. Future research could expand the scope to include additional regions within Vietnam or other Southeast Asian countries to better understand regional and cultural differences. This study employed a cross-sectional design, providing a snapshot in time, but lacking longitudinal insights into cashless payment intentions. Future studies should consider longitudinal approaches to observe changes in business attitudes

and behaviors over time toward cashless acceptance. The research also outlines potential next steps, emphasizing the importance of exploring additional constructs and utilizing longitudinal designs to deepen understanding of the cashless payment adoption process among small businesses.

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