

# SMALL BUSINESS STRATEGY TO UTILIZE CASHLESS TRENDS IN EMERGING MARKETS

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## Abstract

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Small and medium-sized enterprises (SMEs) are the backbone of Thailand's economy (Elgin et al., 2019), driving employment, innovation, and national income. As Thailand transitions toward a digital and cashless economy, SMEs play a crucial role in bridging traditional commerce with digital financial systems. This study examines how Thai SMEs strategically adapt to the cashless transformation using the technology acceptance model (TAM), strategic management theory, and leadership-trust perspectives. A quantitative survey was conducted among 300 SMEs across major sectors using validated questionnaires, analyzed through Statistical Package for the Social Sciences (SPSS) and SmartPLS to test direct, mediating, and moderating effects. Results show that perceived usefulness (PU) and perceived ease of use (PEOU) strongly influence SMEs' intentions to adopt cashless systems, confirming TAM's assumptions. Cashless adoption significantly enhances business strategy adaptation (BSA) and managerial leadership, highlighting how digital integration reshapes operations. Consumer trust (CT) mediates the link between adoption and competitiveness, showing that trust converts technology adoption into sustainable performance. Leadership independently strengthens competitiveness, while firm size positively influences competitiveness, with larger SMEs leveraging technology more effectively. The study extends TAM into a strategic framework and offers policy implications for the inclusive digital transformation of Thai SMEs.

**Keywords:** Cashless Society, SMEs, Technology Acceptance Model, Consumer Trust, Leadership, Digital Transformation, Thailand

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## 1. INTRODUCTION

A cashless society refers to an economic system where transactions are executed primarily through digital means, such as credit and debit cards, QR codes, e-wallets, and mobile banking applications, rather than physical banknotes or

coins (Bank of Thailand, 2022). The term was first popularized by John Diebold in the 1960s, who argued that the automation of financial systems would make electronic transactions inevitable (Thoetthulethaveedech, 2016). Later, policymakers such as George Mitchell of the Federal Reserve emphasized that electronic payments would not

only lower transaction costs but also enhance efficiency (Thoetthulethaveedech, 2016).

Historically, the commercial banking sector embraced cashless initiatives to reduce document processing costs and improve efficiency. These policies accelerated the adoption of credit and debit cards as well as electronic payment systems (Thoetthulethaveedech, 2016). Over time, rapid advances in financial technology have reshaped the banking industry globally, especially through the rise of mobile payments. According to Grand View Research (n.d.), the global digital payment solutions market is expected to reach USD 137.04 billion in 2025, up from USD 114.41 billion in 2024, representing a compound annual growth rate (CAGR) of 21.4% through 2030. Similarly, The Business Research Company (2026) forecasts the market to expand from USD 125.94 billion in 2024 to USD 136.88 billion in 2025, suggesting an 8.7% annual increase. Mordor Intelligence (2024) provides a slightly lower estimate of USD 121.53 billion for 2025, while IMARC (2024) places the figure at USD 124.5 billion, with growth expected to continue strongly over the following decade. Global Growth Insights (2026) predicts a valuation of USD 141.61 billion in 2025, reflecting a CAGR of 6.72% from 2024 to 2033.

The global transformation toward a cashless society has been extensively studied in developed and emerging economies, with Sweden, China, and South Korea frequently cited as leading examples. Sweden is often regarded as the pioneer in cashless transformation. Cash use in Sweden accounts for less than 2% of all transactions, and more than half of its bank branches no longer handle cash deposits or withdrawals (Arvidsson, 2019). Strong government support, technological readiness, and legal frameworks that allow merchants to refuse cash payments have facilitated Sweden's transition. Furthermore, public perception of digital payments as safer and more efficient than cash has accelerated adoption (Export-Import Bank of Thailand, 2019).

In China, mobile financial applications such as Alipay and WeChat Pay have transformed consumer payment behavior within a remarkably short time. Between 2014 and 2017, the value of mobile payments in China rose from eight trillion yuan to 109 trillion yuan, making it the world's largest mobile payment market (China Global Television Network [CGTN], 2020). The widespread availability of affordable smartphones, improved internet infrastructure, and the rise of e-commerce have enabled Chinese consumers to integrate digital payments into nearly every aspect of daily life, from purchasing goods to tipping service workers. While adoption is concentrated in urban centers, the rapid scale of digital finance has positioned China as a global leader in mobile payment innovation (Export-Import Bank of Thailand, 2019).

South Korea has also experienced a rapid decline in cash usage, driven by the country's advanced technological infrastructure and government-backed initiatives promoting digital finance. The Korean government has actively pursued policies to reduce cash circulation, including tax incentives for electronic payments and the promotion of digital receipts (Lee & Shin, 2018). Studies have noted that South Korea's strong culture of early technology adoption, combined with

the dominance of smartphone usage, has allowed digital wallets and mobile payment platforms to flourish (Shin & Lee, 2021). As a result, South Korea is often ranked among the world's most cashless economies, with digital transactions comprising the overwhelming majority of retail payments.

Thailand's transition toward a cashless society has been shaped by decades of gradual development in its financial infrastructure, payment systems, and digital policies. The journey began in the late 1990s when the Bank of Thailand introduced a real-time gross settlement system to improve the efficiency and security of high-value transactions. This move placed Thailand among the early adopters of advanced settlement systems in the region and marked the beginning of digital payment modernization (Khiaonarong, 2020). By the early 2000s, the growth of retail banking and e-commerce created a need for new payment gateways. Around 2003, these gateways emerged, followed shortly by the establishment of the National Interbank Transaction Management and Exchange (NITMX) in 2005, a private sector initiative under the Thai Bankers' Association. NITMX became central to managing ATM switching and bulk transfers, representing a critical step in Thailand's transition from cash-based to electronic transactions (Plaitakis et al., 2022).

The mid-2000s witnessed the birth of Thailand's first digital wallet systems. Paysbuy, launched in 2004, became the country's earliest e-wallet service, while TrueMoney, introduced around the same period by True Corporation, expanded quickly across Southeast Asia and offered a variety of digital payment services (Zheng & Angasinha, 2023; "TrueMoney", 2025). These services laid the foundation for Thailand's e-wallet ecosystem, although consumer skepticism about digital payments during this period meant that cash-on-delivery (COD) remained one of the most widely used payment methods for e-commerce (Stripe, 2025).

By 2012, the Bank of Thailand launched its Payment Systems Roadmap (2012–2016) to enhance efficiency, manage systemic risks, and protect consumers. This was followed in 2015 by the National e-Payment Master Plan, which represented a major strategic shift toward digital transactions. This plan introduced the idea of PromptPay, Thailand's landmark real-time retail payment service, and aligned with the government's Thailand 4.0 policy, which emphasized digital transformation as a cornerstone of national development (Bank of Thailand, 2011; Inphirom, 2022; Royal Thai Embassy, 2021).

PromptPay was first activated in late 2016, enabling individuals and businesses to transfer money instantly using mobile numbers or national ID numbers. The system's initial rollout included welfare disbursement programs, underscoring its role not only in financial inclusion but also in social policy (Plaitakis et al., 2022). In 2017, PromptPay was officially launched nationwide, marking a turning point in Thailand's cashless journey. That same year, the country enacted the Payment Systems Act, which strengthened regulatory oversight, protected consumers, and created a legal framework for electronic payment services (Tilleke & Gibbins, 2024). By 2019, PromptPay had become widely used, processing over 214 million transactions monthly,

and this number doubled to 442 million during the COVID-19 pandemic in 2020, when digital transfers became essential for both businesses and households (Plaitakis et al., 2022).

Since 2020, Thailand has expanded its digital payments ecosystem through regional and international integration. The country joined the Association of South East Asian Nations (ASEAN) Integrated QR Code Payment System, allowing users to make cross-border payments through QR technology (“ASEAN integrated QR code payment system”, 2025). In 2022, Thai-born provider 2C2P participated in the central bank’s pilot of a retail central bank digital currency (CBDC), signaling the government’s intention to further modernize financial services (“2C2P”, 2025). Regional cooperation deepened in 2023 when PromptPay was linked with Singapore’s PayNow, the first cross-border real-time payment linkage in ASEAN (Plaitakis et al., 2022).

In 2024, the Thai government launched a large-scale digital wallet stimulus valued at 450 billion baht, which distributed 10,000 baht in digital credits to eligible citizens. This program not only aimed to boost post-COVID consumption but also encouraged everyday use of digital transactions (Reuters, 2024). By 2025, Thailand was recognized as one of Southeast Asia’s most advanced digital payment ecosystems, with widespread adoption of PromptPay, QR code transfers, and digital banking services integrated across both formal and informal sectors (TransFi, 2025). Looking forward, surveys suggest that many Thai consumers believe the country could achieve a predominantly cashless economy by 2026–2028, positioning Thailand as a regional leader in digital finance (Dharmaraj, 2024).

The historical trajectory of Thailand’s cashless society highlights the interplay between government policy, private sector innovation, and consumer adoption. From its early investment in settlement systems during the 1990s to the widespread success of PromptPay and ongoing experiments with digital currency, Thailand’s journey illustrates how strategic planning and regulatory frameworks can accelerate the transition to cashless payments. At the same time, the challenges of inclusivity, particularly among informal sectors and vulnerable populations, remain central to the country’s path toward a fully cashless society.

Small and medium-sized enterprises (SMEs) represent the backbone of Thailand’s economy, contributing over 35% of gross domestic product and employing more than 70% of the workforce (Elgin et al., 2019). SMEs are essential not only for economic output but also for social stability, as they provide employment opportunities across urban and rural regions (Office of Small and Medium Enterprises Promotion, 2023). However, despite their importance, SMEs often face structural barriers, including limited access to finance, low technological readiness, and weak managerial capabilities (World Bank, 2023).

In the digital era, SMEs are under increasing pressure to integrate new technologies into their operations to remain competitive. Studies indicate that digital adoption can enhance SME performance through improved efficiency, expanded market access, and stronger customer engagement (Bai et al., 2021). In Southeast Asia, digital payments are

viewed as a catalyst for SME growth, as they lower transaction costs, enable participation in e-commerce platforms, and provide access to financial data that can be used for credit assessments (Koh & Kong, 2021).

In Thailand, government policies have actively encouraged SMEs to embrace digital transformation. The National e-Payment Master Plan and the Thailand 4.0 initiative emphasize digital finance as a driver of innovation-led growth (Bank of Thailand, 2011; Ministry of Digital Economy and Society, 2021). Programs such as PromptPay, introduced in 2016, have enabled SMEs to receive payments instantly at lower fees, thereby reducing reliance on cash transactions (Plaitakis et al., 2022). More recently, cross-border QR payment linkages with Singapore, Malaysia, and Indonesia have expanded opportunities for SMEs in the tourism and export sectors (“ASEAN integrated QR code payment system”, 2025).

Nevertheless, adoption among SMEs remains uneven. Research shows that while larger or urban SMEs tend to embrace cashless payments quickly, smaller and rural SMEs often lag due to challenges such as digital illiteracy, high transaction costs, and distrust in financial institutions (Kraivanit et al., 2019). Generational differences further complicate the picture: younger entrepreneurs tend to adopt digital tools more readily, while older business owners are more resistant to change (Apasrawirote & Yawised, 2021). This uneven adoption risks widening the competitiveness gap between SMEs that successfully integrate digital finance and those that remain cash-reliant.

Overall, SMEs in Thailand stand at a crossroads: digital adoption, particularly in payments, offers substantial opportunities to improve competitiveness and resilience, but barriers to widespread adoption persist. Addressing these challenges requires coordinated efforts from the government, financial institutions, and SME leadership. Importantly, the ways in which SMEs adapt their business strategies — through operations, pricing, marketing, and customer management — will determine whether they can fully leverage the transition toward a cashless society. This underscores the relevance of examining how SMEs in Thailand strategically adapt to a cashless economy, which is the central focus of this study.

Drawing from this gap literature, the current investigation explores how cashless transformation is strategically assimilated by Thai SMEs and aims to explain would mechanism that adoption influence competitiveness. The main research questions are as follows:

*RQ1: How do perceived usefulness and perceived ease of use influence adoption intention?*

*RQ2: How does cashless penetration trigger strategic changes and managerial control?*

*RQ3: What is the role of consumer trust and leadership in converting adoption into competitive advantage? and*

*RQ4: How do management leadership and demographic characteristics affect SME competitiveness in a cashless economy?*

Using a quantitative design, the research combines TAM with strategic management theory and leadership-trust perspectives that provide a comprehensive model linking technology adoption

to organizational effectiveness. By moving away from consumer-focused adoption research to organization-level outcomes and strategic change, this study adds theoretical and practical value around the processes of digital transformation in developing countries. The results offer insights and recommendations to entrepreneurs, local policy makers, and financial establishments on improving SME performance, advancing digital resilience, and maintaining competitive advantage during the Thai journey towards a cashless society.

The structure of this paper is as follows. Section 2 reviews the related literature. Section 3 offers the research methodology. Section 4 presents the results and discusses the findings. Section 5 concludes the paper and provides suggestions for future research.

## 2. LITERATURE REVIEW

The technology acceptance model (TAM), developed by Davis (1989), has long served as one of the most influential frameworks for understanding how individuals and organizations adopt new technologies. TAM proposes that two perceptions — perceived usefulness (PU) and perceived ease of use (PEOU) — determine the extent to which users accept and utilize a system. PU refers to the degree to which individuals believe that using a technology will enhance their performance, while PEOU concerns the level of effort required to operate it. These constructs remain foundational to explaining adoption behavior across diverse technological settings.

In the context of a cashless society, TAM provides valuable insight into how both consumers and SMEs make decisions regarding the use of digital payment systems. For SMEs, adoption often hinges on whether they perceive such systems to deliver tangible benefits such as operational efficiency, faster transactions, or broader market access (Chong, 2013; Thathsarani & Jianguo, 2022). Studies conducted in developing economies reveal that PU tends to have a stronger influence on adoption intention than PEOU (Venkatesh & Davis, 2000; Zhou, 2012). This suggests that SMEs prioritize business outcomes and performance enhancement over simplicity of use when evaluating digital payment systems. The theoretical logic of TAM, therefore, helps explain the growing willingness of Thai SMEs to adopt e-payment systems under initiatives such as the National e-Payment Master Plan (Bank of Thailand, 2022).

Globally, similar trends are evident as countries shift toward cashless ecosystems. Sweden stands as one of the most prominent examples of a near-cashless society, with over 98% of all transactions now conducted through cards or mobile devices (Arvidsson, 2019). The country's success is attributed to public trust, robust digital infrastructure, and favorable regulation. In China, mobile payment platforms such as Alipay and WeChat Pay have revolutionized commerce by embedding payment capabilities into daily life and social media, enabling near-universal adoption of digital payments (CGTN, 2020). South Korea has also achieved rapid transformation through supportive government policies and strong consumer openness to digital innovation (Shin & Lee, 2021). These examples confirm that technological acceptance is

not only a function of PU and ease of use but also of institutional trust, infrastructure readiness, and regulatory encouragement (Akpe et al., 2023; Fajriyanto et al., 2024).

While TAM explains initial adoption, it does not fully capture how organizations adapt strategically once a technology has been implemented. Strategic management theory offers a complementary perspective, emphasizing that competitiveness arises when firms align internal resources and capabilities with external opportunities (Porter, 1985). For SMEs, strategic adaptation in the digital era often manifests through more efficient operations, innovative marketing practices, and data-driven decision-making rather than through major structural change. Within the context of cashless adoption, SMEs may adjust their pricing structures to accommodate transaction fees, streamline customer checkout experiences, or utilize digital transaction data to improve customer relationship management and marketing personalization (Teece, 2007; Olanipekun & Ayeni, 2024).

Dynamic capabilities theory further advances this understanding by asserting that firms must continually reconfigure resources to respond to technological and market shifts (Eisenhardt & Martin, 2017). The move toward a cashless economy represents such a shift, requiring SMEs to develop new competencies in digital finance, cybersecurity, and online consumer engagement. Globally, small businesses that actively integrate digital payments into their operational models tend to achieve higher efficiency and broader market access, especially in regions with mature digital ecosystems (Organisation for Economic Co-operation and Development [OECD], 2020).

In Thailand, similar transformations are underway. The government's push toward digital finance, including initiatives like PromptPay and the Thai QR code standard, has significantly expanded access to electronic transactions (Electronic Transactions Development Agency [ETDA], 2023). Thai consumers have become more comfortable using digital payment platforms due to convenience, while SMEs increasingly adopt these systems to remain competitive and meet customer expectations. However, adoption alone does not guarantee success. Many SMEs continue to face barriers such as limited knowledge, high transaction costs, or a lack of integration between payment data and business strategy. These constraints highlight the need for a deeper understanding of how Thai SMEs adapt strategically to cashless transformation rather than simply adopting it at a technical level.

An additional dimension that shapes digital financial transformation is trust. In online and electronic transactions, consumer trust (CT) is a decisive factor influencing behavioral intention and business success. Gefen et al. (2003) emphasized that trust mitigates perceived risk and increases technology acceptance, particularly in contexts involving financial exchange. Without sufficient trust, even technologically efficient systems may fail to achieve wide adoption. In Thailand, lingering concerns about data privacy, fraud, and hidden transaction fees have been identified as major barriers to a full cashless transition. SMEs that successfully build trust —

through transparent pricing, visible security measures, and reliable service — are more likely to retain customers and gain a competitive edge (Akbari et al., 2022).

Leadership also plays a crucial role in facilitating strategic adaptation (Siddiqui & Rivera, 2025). Transformational leadership, as described by Bass and Avolio (1994), emphasizes vision, motivation, and empowerment, enabling organizations to navigate technological change effectively. In SMEs, proactive leadership can make the difference between resistance and the successful integration of cashless systems. Managers who invest in employee training, communicate confidence in digital tools, and create a culture of innovation help transform adoption into long-term competitiveness. Thus, trust and leadership jointly influence how SMEs convert technological adoption into strategic capability.

Comparative studies across countries provide important context for understanding Thailand's position. Nations such as Sweden, China, and South Korea illustrate that cashless transformation is most successful when supported by strong infrastructure, public trust, and clear regulatory frameworks (Arvidsson, 2019; CGTN, 2020; Shin & Lee, 2021). However, these international studies have primarily concentrated on adoption behavior — examining constructs such as PU, PEOU, social influence, and facilitating conditions — while giving limited attention to post-adoption strategy. The same pattern is evident in Thailand, where much of the existing research focuses on consumer behavior and SME readiness rather than on how businesses adjust operations, marketing, and customer relations after adoption (Export-Import Bank of Thailand, 2019; Bank of Thailand, 2022).

This gap in the literature motivates the present research, which aims to bridge the conceptual divide between technology acceptance and strategic management. By integrating insights from TAM, strategic management, and leadership-trust theories, the study explores how Thai SMEs not only adopt but also strategically adapt to the nation's transition toward a cashless economy. Such an integrated approach contributes to understanding how digital financial transformation can drive long-term competitiveness and resilience among SMEs in both global and Thai contexts.

The study, therefore, develops the following research hypotheses:

*H1: Perceived usefulness and perceived ease of use are positively associated with SMEs' willingness to adapt to a cashless society.*

*H2a: Cashless adoption leads SMEs to implement strategic changes in operations, pricing, marketing, and customer relationship management.*

*H2b: Cashless adoption leads SMEs to enhance management leadership practices.*

*H3a: Consumer trust mediates the relationship between cashless adoption and SMEs competitiveness.*

*H3b: Management leadership moderates the relationship between business strategy adaptation and SMEs competitiveness.*

*H3c: Demographic characteristics significantly influence the competitiveness of SMEs in a cashless economy.*

### 3. MATERIALS AND METHODS

This research adopts a quantitative survey design to empirically examine the relationships among perception, adoption behavior, strategic adaptation, and competitiveness of SMEs in Thailand's transition toward a cashless society. The quantitative method allows the researcher to measure attitudes and behavioral intentions objectively and to statistically test the conceptual framework derived from the TAM, strategic management theory, and leadership-trust perspectives.

The main instrument for data collection is a structured questionnaire developed specifically for this study. It was designed in the Thai language to ensure clarity and cultural appropriateness for the respondents. The questionnaire was divided into ten sections (A–J) and comprised both screening and measurement items. Section A contained an informed consent statement to ensure voluntary participation and ethical compliance. Section B gathered demographic and business information, including years in operation, number of employees, business type, province, respondent's age and gender, and the proportion of cashless transactions in the previous month. These variables provide context for interpreting behavioral differences among SMEs of various sizes and industries. Section C measured the frequency of cashless payment use across multiple payment channels — PromptPay/QR code, e-wallets, credit or debit cards, and cross-border payments such as Alipay and WeChat Pay — using a five-point Likert scale ranging from 1 = never to 5 = very frequently. This section serves as a descriptive indicator of the degree of digital transaction integration in each business. Sections D through I contained the main constructs derived from the theoretical framework. The PU scale (Section D) measured the extent to which SMEs believe that cashless payment systems improve operational efficiency, reduce costs, increase sales, and support better business decisions. The PEOU scale (Section E) assessed how easily owners and employees could learn, manage, and operate cashless payment systems. The CT scale (Section F) evaluated customer confidence in digital payment security and comfort among different age groups, particularly those aged 50 and above. The management leadership (ML) dimension (Section G) captured leadership involvement, training, budgeting, and review processes associated with digital payment implementation. The business strategy adaptation (BSA) construct (Section H) measured how SMEs strategically adjusted pricing, promotions, customer relationship management, and supplier payments to align with cashless operations. The competitiveness (COMP) construct (Section I) examined perceived business performance outcomes, including sales growth, customer satisfaction, cost reduction, market expansion, and flexibility. Finally, the adoption intention construct (Section J) gauged future willingness to expand or enhance cashless transaction systems, investment intentions, and readiness to integrate digital payment processes into daily operations.

All attitudinal items were measured on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree), enabling the analysis of intensity and direction of respondent perceptions. The questionnaire's

structure was designed to ensure logical flow — from awareness and experience, to perceptions, strategic responses, and outcomes — thereby aligning directly with the study’s conceptual model.

To ensure content validity, the initial draft of the questionnaire was reviewed by three academic experts specializing in marketing, business strategy, and digital transformation. Their suggestions were used to refine the language, sequence, and conceptual clarity of items. A pilot test involving 30 SME respondents from various sectors (retail, services, and food industries) was then conducted to assess question comprehension and response consistency. Feedback confirmed that the wording was clear and appropriate for the target population.

The final instrument’s reliability will be assessed using Cronbach’s alpha, where a coefficient of 0.70 or higher is considered satisfactory for internal consistency (Nunnally, 1978). In addition, construct validity will be examined through exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) to verify that observed indicators appropriately represent their underlying theoretical constructs.

The study population comprises SMEs in Thailand operating in sectors such as retail, food and beverage, services, agriculture, and logistics — industries identified as actively engaging in digital financial transactions. Inclusion criteria require that the respondent be either the business owner or a senior manager with operational authority, that the business has been in operation for at least one year, and that it has some experience with cashless transactions. Using purposive sampling, a target sample size of 300 SMEs was set based on the Krejcie and Morgan (1970) sample size guideline, ensuring adequate statistical power for regression, mediation, and moderation analyses.

Data collection will be conducted through both online and field surveys. An online questionnaire will be distributed via Google Forms to members of SME associations, regional chambers of commerce, and business community networks. Field data collection will take place at SME clusters across major provinces — Bangkok, Chiang Mai, Khon Kaen, and Suratthani — to capture geographical diversity. All participants will receive clear explanations regarding the research purpose and confidentiality measures before participation. Respondents will be assured that their data will be used solely for academic purposes and reported anonymously.

Once collected, the data will be screened for completeness, accuracy, and outliers before analysis. Descriptive statistics will summarize respondent profiles and payment behaviors. Inferential analyses will then test the hypothesized relationships between variables. Statistical Package for the Social Sciences (SPSS) will be used for descriptive analysis, reliability testing, and preliminary correlations, while SmartPLS will be employed for hypothesis testing, including mediation and moderation effects. This analytical approach is suitable for complex models with multiple latent constructs and allows assessment of both direct and indirect relationships within the conceptual framework.

The combination of rigorous instrument design, expert validation, and robust statistical testing ensures methodological reliability and validity. This approach provides a strong empirical

foundation for understanding how SMEs in Thailand perceive, adopt, and strategically adapt to cashless financial technologies — ultimately contributing to their long-term competitiveness in a rapidly digitizing economy.

Although this study employed a quantitative survey, alternative approaches could also be used to analyze how SMEs adapt to a cashless economy. Qualitative methods, such as interviews and case studies, might provide richer insights into decision-making processes, learning processes, and constraints in digital payment adoption. A mixed-methods approach might be effective in improving understanding. A longitudinal study could address changes in adoption, trust, and fit over time. However, the quantitative method worked well to test theory-based relationships, to examine the effect, and to have generalizability result through a large sample of SMEs.

## 4. RESULTS AND DISCUSSION

### 4.1. Results

The regression model based on the TAM demonstrates strong explanatory power ( $R = 0.84$ ,  $R^2 = 0.70$ , adjusted  $R^2 = 0.70$ ,  $F(2,297) = 350.49$ ,  $p < 0.001$ ). Both PU and PEOU significantly predict adoption intention. PEOU ( $\beta = 0.55$ ,  $p < 0.001$ ) exhibits a larger standardized effect than PU ( $\beta = 0.33$ ,  $p < 0.001$ ), confirming *H1*. These findings reinforce TAM’s proposition that ease and usefulness jointly determine acceptance, with usability emerging as a decisive factor among Thai SMEs in the adoption of cashless systems.

**Table 1.** Regression results for *H1* — adoption intention (PU and PEOU)

Predictor	B	$\beta$	t	Sig.	R <sup>2</sup>	F
Constant	-	-	-	-	0.70	350.49
PU	0.33	0.33	6.76	< 0.001		
PEOU	0.59	0.55	11.24	< 0.001		

**Table 2.** Regression results for *H2a* — business strategy adaptation

Predictor	B	$\beta$	t	Sig.	R <sup>2</sup>	F
Constant	2.54	-	19.32	< 0.001	0.25	101.07
Cashless adoption (C_Mean)	0.43	0.50	10.05	< 0.001		

Cashless adoption (*C\_Mean*) significantly predicts BSA. The relationship between *C\_Mean* and *BSA\_Mean* yields an  $R^2$  value of 0.25 and is statistically significant ( $F(1,298) = 101.07$ ,  $p < 0.001$ ,  $\beta = 0.50$ ), supporting the hypothesis that higher levels of cashless adoption drive stronger strategic adjustments in SMEs’ operations, pricing, marketing, and customer relationship management.

**Table 3.** Regression results for *H2b* — management leadership

Predictor	B	$\beta$	t	Sig.	R <sup>2</sup>	F
Constant	2.88	-	21.44	< 0.001	0.17	59.66
Cashless adoption (C_Mean)	0.34	0.41	7.72	< 0.001		

For *H2b*,  $C\_Mean \rightarrow ML\_Mean$  produces  $R^2 = 0.17$  ( $F(1,298) = 59.66$ ,  $p < 0.001$ ,  $\beta = 0.41$ ), indicating that digital adoption is associated with enhanced leadership practices. Both hypotheses are supported, consistent with dynamic capabilities theory, as SMEs reconfigure operations, pricing, and marketing to align with digital transaction systems.

**Table 4.** Regression results for *H3a* — Mediation by consumer trust

Path	B	$\beta$	t	Sig.
$C\_Mean \rightarrow COMP\_Mean$	0.35	0.43	8.16	< 0.001
$C\_Mean \rightarrow CT\_Mean$	0.38	0.49	9.63	< 0.001
$CT\_Mean \rightarrow COMP\_Mean$	0.78	0.75	19.60	< 0.001

To assess mediation, three relationships were tested. First, cashless adoption predicts competitiveness ( $\beta = 0.43$ ,  $p < 0.001$ ). Second, adoption predicts CT ( $\beta = 0.49$ ,  $p < 0.001$ ). Third, CT predicts competitiveness ( $\beta = 0.75$ ,  $p < 0.001$ ). These relationships fulfill the criteria for mediation, suggesting that trust transmits the positive impact of adoption on competitiveness. Accordingly, *H3a* is supported.

**Table 5.** Regression results for *H3b* — Moderation by leadership

Predictor	B	$\beta$	t	Sig.	R <sup>2</sup>
BSA	0.46	0.36	3.25	0.001	-
ML	0.48	0.42	3.53	< 0.001	-
Interaction (BSA $\times$ ML)	-0.33	-0.11	-1.65	0.099	0.60

The moderation test examined the interaction between BSA and ML on competitiveness. Both BSA ( $\beta = 0.36$ ,  $p = 0.001$ ) and ML ( $\beta = 0.42$ ,  $p < 0.001$ ) have significant main effects, but their interaction ( $\beta = -0.33$ ,  $p = 0.099$ ) is non-significant. Thus, *H3b* is not supported, indicating that leadership independently contributes to competitiveness but does not moderate the strategy-competitiveness relationship.

**Table 6.** Regression results for *H3c* — Demographic and sectoral factors

Predictor	B	$\beta$	t	Sig.	R <sup>2</sup>	F
Constant	3.90	-	9.37	< 0.001	0.09	2.08
Number of employees	0.08	0.16	2.30	0.022		
Other controls	-	n.s.	-	> 0.05		

The model incorporating demographic and sectoral variables shows moderate explanatory power ( $R = 0.29$ ,  $R^2 = 0.09$ , adjusted  $R^2 = 0.05$ ,  $F(13,286) = 2.08$ ,  $p = 0.015$ ). Among predictors, only the number of employees is significant ( $\beta = 0.16$ ,  $p = 0.022$ ). Firm size positively influences competitiveness, confirming partial support for *H3c*.

## 4.2. Discussion

The findings of this study strongly confirm the TAM. Both PU and PEOU significantly influence SMEs' intention to adopt cashless payment systems, explaining approximately 70% of the variance in adoption intention. The higher standardized coefficient for PEOU ( $\beta = 0.55$ ) compared with PU

( $\beta = 0.33$ ) indicates that Thai SMEs are particularly responsive to systems that minimise complexity and effort. This aligns with Davis (1989) and subsequent extensions by Venkatesh and Davis (2000), which posit that simplicity and intuitive design are decisive during the diffusion of digital innovations.

In practical terms, once SMEs recognise that cashless transactions improve efficiency and accuracy, their decision to adopt depends mainly on the perceived difficulty of integration. This pattern mirrors results from developing economies (Chong, 2013; Zhou, 2012), where usability remains a stronger predictor of adoption than perceived strategic gain. Thus, the evidence affirms *H1* and reinforces TAM as a suitable framework for understanding digital-payment behaviour among Thai SMEs.

The study also demonstrates that adoption intensity translates into meaningful organisational change. Cashless adoption positively predicts both BSA and ML. Enterprises that engage more heavily in digital transactions report higher levels of strategic reconfiguration, particularly in pricing, marketing, and customer-relationship management, while also showing stronger leadership involvement in planning and training. These results substantiate *H2a* and *H2b* and correspond with dynamic-capabilities theory (Teece, 2007), which emphasises a firm's ability to integrate, build, and reconfigure competencies in response to environmental change. The evidence suggests that cashless adoption acts as a strategic catalyst: it forces SMEs to streamline processes, invest in technology training, and use transaction data for decision-making. Leadership behaviour appears to evolve in parallel with strategic changes, confirming Porter's (1985) argument that competitiveness stems from the alignment of resources, capabilities, and external opportunities.

Hypothesis *H3a* proposed that CT mediates the relationship between cashless adoption and competitiveness. The results support this proposition. Cashless adoption significantly influences both competitiveness ( $\beta = 0.43$ ,  $p < 0.001$ ) and CT ( $\beta = 0.49$ ,  $p < 0.001$ ), while trust exerts a very strong effect on competitiveness ( $\beta = 0.75$ ,  $p < 0.001$ ). These relationships satisfy the statistical conditions for partial mediation (Baron & Kenny, 1986), indicating that the adoption of cashless systems enhances performance primarily by increasing customers' confidence in secure, transparent transactions. This finding is consistent with Gefen et al. (2003), who argue that trust is central to online and financial-technology acceptance. Within Thailand, where concerns about fraud and hidden fees persist, cultivating trust becomes a strategic imperative. SMEs that display visible security practices, offer transparent fee structures, and respond promptly to transaction issues can transform trust into a sustained competitive advantage. Therefore, *H3a* is supported, highlighting trust as the bridge between technological adoption and business success.

Hypothesis *H3b* examined whether leadership moderates the effect of strategic adaptation on competitiveness. Although both leadership and strategy adaptation individually contribute to competitiveness, the interaction term between them was not significant ( $\beta = -0.33$ ,  $p = 0.099$ ). Consequently, *H3b* is not supported. This outcome

implies that leadership functions as an independent performance driver rather than as an amplifier of strategic outcomes. Transformational leadership (Bass & Avolio, 1994) may enhance organisational learning and morale, but does not necessarily intensify the direct link between strategic adaptation and competitiveness. The absence of moderation could be attributed to limited variance in leadership capability among SMEs or multicollinearity between leadership and strategy variables. Nevertheless, leadership remains crucial as a stand-alone determinant of competitiveness, reinforcing the value of managerial vision, staff empowerment, and continuous digital training.

The final model explored whether demographic and sectoral characteristics influence SME competitiveness in the cashless context. Although the overall model is significant ( $R^2 = 0.09$ ,  $p = 0.015$ ), only the number of employees emerges as a meaningful predictor ( $\beta = 0.16$ ,  $p = 0.022$ ). Larger SMEs tend to perform better, suggesting that resource availability and workforce capacity enhance the ability to exploit digital technologies. Other factors, such as business age, industry type, and region, show no significant effects. This partial support for *H3c* accords with prior studies (OECD, 2020) that emphasise firm size as a key determinant of digital competitiveness. Smaller enterprises often face constraints in finance, expertise, and infrastructure, limiting their ability to integrate new technologies effectively. Hence, policies aimed at supporting micro and small businesses — through training, digital infrastructure, and financial incentives — remain vital for equitable digital transformation.

## 5. CONCLUSION

The transition toward a cashless economy has transformed the strategic and operational landscape of SMEs in Thailand. This study sought to understand how technological perceptions, trust, leadership, and strategic adaptation jointly shape SMEs' competitiveness in this emerging digital environment. Grounded in the TAM, dynamic capabilities theory, and leadership-trust perspectives, the findings reveal that successful digital transformation extends beyond technology adoption to encompass organizational learning, managerial commitment, and consumer confidence.

The research confirmed that PU and PEOU significantly determine adoption intention among Thai SMEs, supporting the propositions of Davis (1989) and Venkatesh and Davis (2000). However, the dominance of PEOU underscores that adoption decisions in developing contexts rely heavily on the perceived simplicity and accessibility of digital tools. This finding resonates with prior studies indicating that in environments where digital literacy and infrastructure vary widely, usability becomes a decisive factor for adoption (Chong, 2013; Zhou, 2012). Accordingly, the success of cashless implementation depends not only on technological capability but also on the perceived effortlessness of use and integration.

Beyond adoption, the study demonstrates that cashless engagement fosters tangible strategic and managerial change. Consistent with Porter's (1985) competitive advantage framework and Teece's (2007)

concept of dynamic capabilities, SMEs that intensively adopt cashless payments show greater strategic adaptation — adjusting pricing mechanisms, marketing approaches, and customer-relationship management practices. Simultaneously, the findings highlight the emergence of stronger leadership practices related to training, digital planning, and performance evaluation. These results affirm that digital adoption acts as a catalyst for organizational learning and continuous improvement, enabling SMEs to realign internal resources with the digital marketplace.

A key contribution of this research lies in identifying CT as the critical mechanism that translates cashless adoption into competitiveness. Trust mediates the relationship between adoption and business performance, confirming insights from Gefen et al. (2003) and reinforcing that customer confidence in digital security and transparency is essential for sustained commercial success. In Thailand, where the fear about cybercrime and transaction risk remains a barrier, this effect underscores that technical adoption alone does not guarantee competitive advantage. Only when SMEs cultivate credibility, ensure data protection, and communicate integrity in digital payments does technological acceptance translate into measurable business outcomes. This finding integrates behavioral and strategic dimensions of digital transformation, bridging a critical research gap between technology acceptance and long-term firm performance.

While leadership emerged as an independent contributor to competitiveness, the absence of a significant moderating effect suggests that leadership functions as a parallel driver rather than a conditional enhancer of strategic performance. This nuance refines transformational leadership theory (Bass & Avolio, 1994) in the context of SMEs by implying that managerial competence supports digital competitiveness directly through organizational alignment and staff motivation, rather than through interactions with strategy. Furthermore, the significance of firm size in the demographic model indicates that larger SMEs benefit from resource slack and workforce capacity, facilitating faster and more effective technology integration (OECD, 2020; Office of Small and Medium Enterprises Promotion, 2023). Therefore, targeted interventions for smaller enterprises are essential to ensure inclusive participation in Thailand's digital economy.

From a theoretical standpoint, this study extends TAM by embedding it within a strategic management and trust-based framework. It demonstrates that adoption intention is not an endpoint but a precursor to strategic reconfiguration and relational value creation. The integration of TAM with dynamic capabilities theory offers a more holistic explanation of how SMEs transform technological intention into competitive advantage. Moreover, the inclusion of leadership and trust constructs expands the explanatory reach of SME digital-transformation models by emphasizing human, cultural, and relational dimensions — areas often neglected in purely technological research.

From a managerial and policy perspective, the results highlight the imperative of balancing technological and human investments. SMEs should

prioritize usability when selecting cashless platforms, ensuring that systems are intuitive and compatible with existing workflows. At the same time, building and maintaining customer trust must become a central strategic goal. Transparent pricing, robust data protection, and responsive service recovery can strengthen the perception of reliability and thereby convert adoption into loyalty-driven competitiveness. Government agencies and financial institutions also have a role to play by expanding digital infrastructure, standardizing security regulations, and offering training programs that enhance SME leaders' digital literacy and strategic thinking. For micro and small enterprises, targeted capacity-building programs and financial incentives could mitigate the structural disadvantages associated with limited resources and technical expertise.

In conclusion, the study demonstrates that the competitiveness of Thai SMEs in a cashless society arises from the interplay between technological adoption, strategic adaptation, leadership effectiveness, and CT. Digital adoption delivers value only when embedded within broader organizational strategies that build trust and foster adaptive capabilities. The findings provide a robust foundation for both scholars and policymakers to understand how digital transformation can promote sustainable competitiveness in emerging economies. Ultimately, this research contributes to an evolving understanding of how technology acceptance extends beyond system use — shaping not only the behavior of organizations but also their long-term strategic trajectory in the digital age.

Several limitations of this study highlight implications for future research. First, cross-sectional design measures perceptions of SMEs at one point in time, which restricts inquiry into the changes occurring over time with respect to

cashless adoption, strategic adaptation, leadership, and trust. There is the possibility for the strengthening of causal inference through following these changes longitudinally, as well. Secondly, purposive sampling of SMEs in the urban area may limit generalizability to micro-enterprises and rural businesses. Future studies should employ probability sampling and balance results by including a broader set of firm sizes and geographic locations to improve external validity. Third, the common method bias could be a concern in this study because all survey data were collected through a self-report approach. Next studies may consider using objective performance measures, such as transaction intensities or revenue growth, to measure the competitiveness in a more well-rounded way. Fourth, the role of context was considered in CT and leadership, but no other factors, such as regulatory support or digital backbone. These dimensions need to be considered in future models so that we can achieve a fuller understanding of digital transformation. Fifth, demographic effects were incompletely accounted for. Future research should examine the interactions between trust and leadership behaviour with respect to age, digital literacy, and managerial experience. Last but not least, it should be noted that this study was conducted in Thailand. Comparative studies between the ASEAN countries with varying levels of digital maturity would give us additional insights into how SMEs in each country respond to the cashless revolution. Other qualitative methods, such as interviews or case studies, may elicit deeper explanations of motivations and barriers, supplementary to those revealed in the survey. Mixed-methods (convergent) designs would be more informative in terms of the understanding of digital transformation within SME.

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