

# Digital Payment Platform Adoption and Economic Performance of Ghanaian SMEs: A Mixed-Methods Analysis

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## Abstract

Ghana's ambition to build a cash-lite economy, articulated in the National Financial Inclusion and Development Strategy (NFIDS 2018-2023) and reinforced by broader digitalization initiatives, has heightened interest in digital payment platforms as tools for strengthening small and medium-sized enterprises (SMEs). Despite rapid fintech growth, adoption among SMEs remains uneven, raising important questions about the factors shaping uptake and the extent to which digital payment use is associated with firm performance. This study investigates the determinants, barriers, and performance implications of digital payment adoption among Ghanaian SMEs using a mixed-methods design grounded in interpretivism and pragmatism. Quantitative data from 501 SME owners and managers were analyzed through exploratory and confirmatory factor analyses and regression analysis, while qualitative insights from nine semi-structured interviews were used to contextualize the statistical patterns. The findings indicate that digital payment adoption is positively associated with SME performance, with fintech usage explaining 32.4% of the variance in the performance construct. Higher levels of adoption were linked to improved sales growth, customer satisfaction, operational efficiency, and market reach within the study sample. Survey patterns and qualitative accounts further suggest that performance expectancy, effort expectancy, social influence, and facilitating conditions are particularly salient in shaping SME perceptions of digital payment platforms, while financial limitations, infrastructural deficits, cybersecurity concerns, low digital literacy, and entrenched cash preferences remain important perceived barriers. Because detailed multivariate outputs for the individual UTAUT2 constructs are not reported, these adoption-related interpretations are presented as descriptive rather than definitive estimates of relative effect size. The study recommends targeted financial incentives, expanded digital infrastructure, tailored capacity-building, and clearer regulatory frame-

works to foster more inclusive adoption among SMEs. By situating these findings within Ghana's policy agenda, the paper shows that digital payments have meaningful potential to support SME competitiveness, financial inclusion, and resilience, although their benefits depend on the broader structural and institutional conditions that shape adoption and sustained use.

### Keywords

Digital Payment Platforms, Small and Medium-Sized Enterprises (SMEs), Fintech Adoption, Technology Acceptance, Economic Performance, Ghana, Financial Inclusion, National Financial Inclusion and Development Strategy (NFIDS), Digital Agenda Initiatives, Bank of Ghana Fintech Guidelines, Cash-Lite Economy, Policy Frameworks, Mixed-Methods Research

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## 1. Introduction

The rapid diffusion of digital technologies has transformed financial transactions globally, catalyzing a shift from cash-dominated systems toward cash-lite economies in both advanced and developing contexts (Demircuc-Kunt et al., 2018; Manyika et al., 2016; UNCTAD, 2020). In this evolving landscape, small and medium-sized enterprises (SMEs) are central to economic growth, employment creation, and innovation, yet they often operate with thin margins, limited access to finance, and exposure to volatility that make efficiency-enhancing technologies particularly consequential (International Finance Corporation, 2025). Ghana exemplifies these dynamics: SMEs account for the majority of businesses and a substantial share of employment and GDP, but their participation in the digital financial ecosystem remains uneven. Despite the expansion of mobile money, internet banking, and other fintech solutions, the integration of digital payment platforms among Ghanaian SMEs remains uneven, trailing the pace of adoption reported in some more digitally mature settings (Ghana Statistical Service & Ministry of Finance, 2022).

Ghana's policy agenda explicitly promotes a cash-lite economy as a pathway to greater transparency, reduced transaction costs, and deeper financial inclusion, with initiatives such as the National Financial Inclusion and Development Strategy and regulatory support for digital financial services (Bank of Ghana, 2018; Ministry of Finance, Republic of Ghana, 2018; Ministry of Communications and Digitalisation, 2021; National Communications Authority, 2018). Digital payment platforms offer SMEs several potential advantages, including faster and more secure transactions, improved record-keeping, enhanced customer convenience, and the generation of transaction histories that can support access to formal credit (Boateng & Okoe, 2015; International Finance Corporation, 2025; Le, 2022). However, the actual realization of these benefits depends on SME owners' willingness and ability to adopt and sustain the use of such platforms, which in turn is shaped by technological readiness, perceived usefulness and ease of use, social influence,

cost considerations, infrastructure, and broader institutional and cultural conditions (Davis, 1989; Demircug-Kunt et al., 2018; Venkatesh & Davis, 2000).

Theoretical perspectives such as the Theory of Planned Behaviour (TPB), the Technology Acceptance Model (TAM), and the Diffusion of Innovations framework provide useful lenses for understanding how SMEs evaluate and adopt digital payment technologies (Davis, 1989; Manyika et al., 2016; Venkatesh & Davis, 2000). These models highlight the roles of attitudes, perceived behavioural control, perceived usefulness, perceived ease of use, and social norms, as well as the characteristics of the innovation and communication channels that influence diffusion over time (Davis, 1989; Venkatesh & Davis, 2000). Empirical studies across developing economies have linked digital payment adoption with improved firm-level outcomes, including increased sales, better cash-flow management, market expansion, and greater inclusion in formal financial systems, but they also point to persistent barriers such as infrastructure gaps, high initial costs, cybersecurity risks, regulatory uncertainty, and resistance to change (Demircug-Kunt et al., 2018; International Finance Corporation, 2025; Le, 2022; UNCTAD, 2020).

Within Ghana, existing research on digital finance has tended to focus either on consumer use of mobile money or on broad financial inclusion indicators, often overlooking the specific organisational realities of SMEs and the interplay between digital payment adoption and measurable performance outcomes (Ghana Statistical Service & Ministry of Finance, 2022). Many studies offer limited integration of qualitative insights with quantitative analysis, and few engage deeply with the combined effects of technological, financial, behavioural, and policy factors in shaping SMEs' adoption choices (International Finance Corporation, 2025). As a result, important questions remain insufficiently answered: what proportion of Ghanaian SMEs are actually using digital payment platforms; which determinants most strongly influence adoption decisions; how adoption translates into economic performance; and what barriers and enabling policy levers are most salient from the perspective of SME owners and other stakeholders (Ghana Statistical Service & Ministry of Finance, 2022; International Finance Corporation, 2025).

Addressing these gaps, this study provides a mixed-methods analysis of digital payment platform adoption and its economic implications for Ghanaian SMEs, integrating large-scale survey evidence with in-depth qualitative interviews. The research pursues four core questions: 1) What is the current level of digital payment platform adoption among SMEs in Ghana? 2) Which determinants and barriers shape SME owners' adoption decisions? 3) To what extent does adoption of digital payment platforms influence SME performance in terms of growth, efficiency, competitiveness, and market reach? and 4) What practical and policy interventions can foster a more inclusive and robust transition to digital payment modalities? By combining established technology adoption theories with context-specific empirical evidence, the study aims to contribute to academic debates on fintech and SME performance, while also informing policymakers, financial institutions, and SME practitioners seeking to leverage digital payments for Ghana's

broader economic development (International Finance Corporation, 2025; Manyika et al., 2016).

## 2. Methods

This study adopted a mixed-methods research design that combined quantitative and qualitative approaches to provide a comprehensive understanding of digital payment platform adoption and its effects on the economic performance of SMEs in Ghana. The philosophical orientation drew on interpretivism to capture the subjective experiences and perceptions of SME stakeholders, and pragmatism to align methodological choices with the practical objective of generating actionable policy and managerial insights.

### 2.1. Research Design and Approach

A convergent mixed-methods strategy was employed, whereby quantitative and qualitative data were collected in parallel, analyzed separately, and then integrated at the interpretation stage. The quantitative component consisted of a structured survey of SME owners and managers, while the qualitative component comprised semi-structured interviews with key informants drawn from SMEs, government agencies, and financial institutions. This design facilitated triangulation of findings and allowed statistical patterns to be enriched and explained through detailed narrative accounts.

### 2.2. Population, Sampling, and Participants

The target population comprised small and medium-sized enterprises (SMEs) operating in Ghana across sectors such as retail, wholesale, manufacturing, agribusiness, hospitality, technology, and other services, and located within the Coastal, Middle, and Northern belts. In this study, SMEs were defined using Ghana-relevant criteria based on employee size and turnover thresholds, and firms of different ages, sectors, and locations were included to improve coverage of the SME landscape.

For the quantitative strand, a combination of probability-based outreach and convenience recruitment was used to access SME owners and managers through business associations, SME networks, and digital platforms. A total of 536 questionnaires were distributed, of which 501 were completed and retained after data cleaning, providing an adequate sample for multivariate analysis. Respondents were distributed across Ghana's three main ecological belts, with 31.3% located in the Coastal belt, 36.3% in the Middle belt, and 32.4% in the Northern belt. Sectoral representation included retail/wholesale (28.2%), manufacturing (13.1%), agribusiness (13.3%), hospitality (15.5%), technology (15.1%), and other services (14.8%). Because survey dissemination partly relied on online platforms and networks, the findings should be interpreted with some caution, as digitally connected firms may have been more likely to participate.

For the qualitative strand, purposive and convenience sampling were used to identify nine key informants, including SME owners, government representatives,

and financial sector actors with direct involvement in digital payment initiatives. This combination of perspectives was intended to capture both firm-level experiences and institutional views on adoption barriers, enabling conditions, and policy responses.

### 2.3. Instruments and Measures

The quantitative survey instrument was structured into three main sections: demographic and firm characteristics, determinants of digital payment adoption, and SME performance indicators. Determinant constructs were operationalized using validated scales primarily adapted from the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) and related models, including performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit (Davis, 1989; Venkatesh & Davis, 2000). Items were measured on a 7-point Likert scale ranging from “strongly disagree” to “strongly agree”.

A firm was classified as a digital-payment adopter if the respondent indicated that the business used at least one electronic payment channel, such as mobile money, card-based point-of-sale payment, internet banking, or an online payment gateway, as part of its regular business operations. This operational definition was used to distinguish firms that had incorporated digital payments into routine transactions from those that remained primarily cash-based.

SME performance was captured through self-reported measures of sales growth, profitability, customer satisfaction, market expansion, and innovation. The SME performance construct was operationalized as a composite index derived from these items, which were averaged to form a single performance score after analyses confirmed unidimensionality, high factor loadings, and Cronbach’s alpha values exceeding 0.8, indicating strong internal consistency.

The qualitative interview guide was semi-structured and designed to elicit rich narratives on the status of digital payment adoption, perceived benefits and risks, practical challenges, regulatory and policy environments, and suggestions for improving adoption among SMEs. Open-ended questions allowed participants to introduce issues they considered important, while ensuring coverage of core themes aligned with the research questions.

### 2.4. Data Collection Procedures

Quantitative data collection was conducted primarily through an online survey platform, with links disseminated via email, social media, and SME networks to maximize reach across regions and sectors. Participation was voluntary, and respondents provided consent before accessing the questionnaire. Qualitative data were collected through in-person and virtual interviews, each lasting approximately 30 - 45 minutes, depending on participant availability and depth of discussion. All interviews were audio-recorded with permission and subsequently transcribed verbatim for analysis.

## 2.5. Data Analysis

Quantitative data were cleaned, coded, and analyzed using SPSS version 28. Initial screening included checks for missing values, multivariate outliers using Mahalanobis distance, and assessment of normality through skewness and kurtosis statistics. The results indicated that the variables fell within acceptable thresholds for subsequent multivariate analysis.

Exploratory Factor Analysis (EFA) was conducted to examine the underlying structure of the adoption and performance measures, with sampling adequacy assessed through the Kaiser-Meyer-Olkin statistic and Bartlett's test of sphericity. Confirmatory Factor Analysis (CFA) was then used to validate the measurement model by examining standardized factor loadings, average variance extracted (AVE), composite reliability, and model fit indices including  $\chi^2/df$ , GFI, CFI, TLI, IFI, NFI, AGFI, and RMSEA. EFA and CFA were conducted sequentially to assess and confirm the measurement structure of the study constructs, and the resulting fit statistics and validity measures provide evidence of internal measurement consistency within this sample.

To examine adoption-related perceptions, the study drew on UTAUT2 as a conceptual framework for organizing survey responses around performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit. These constructs were used descriptively to interpret patterns in SME owners' attitudes toward digital payment platforms rather than to report a fully specified determinants model with separate coefficients for each predictor. The relationship between digital payment adoption and SME performance was examined through regression analysis, with particular attention to the reported positive association between adoption and performance.

Because adoption and performance were both self-reported by the same respondents, common-method bias was considered in interpreting the findings. Measurement validation procedures and the multi-construct structure of the instrument help reduce this concern, although the possibility of shared-method variance cannot be eliminated completely.

Qualitative data were analyzed using Braun and Clarke's thematic analysis approach. Interview transcripts were read repeatedly for familiarization, coded inductively and deductively, grouped into candidate themes, and refined to ensure coherence and analytic distinctiveness (Braun & Clarke, 2006). Representative quotations were used to illustrate the themes and to enrich interpretation of the quantitative results.

## 2.6. Validity, Reliability, and Ethical Considerations

To enhance content and construct validity, survey items were adapted from established instruments and reviewed by subject matter experts in fintech and SME research before pilot testing. Reliability was assessed using Cronbach's alpha and composite reliability, with coefficients exceeding commonly accepted thresholds, and convergent and discriminant validity were supported by AVE statistics and

inter-construct correlations. Given that adoption and performance were both self-reported, procedural and statistical steps were taken to reduce and assess common-method bias, and the available evidence suggests that no single source factor fully accounts for the observed relationships. For the qualitative component, trustworthiness was promoted through detailed documentation of procedures, reflexive engagement with the data, and triangulation between quantitative and qualitative evidence.

All procedures adhered to institutional and national research ethics guidelines. Participants were informed about the purpose of the study, assured of anonymity and confidentiality, and reminded of their right to withdraw at any time without penalty. Data were stored securely and used solely for academic purposes, and identifying information was removed from reports and publications.

### **3. Results**

#### **3.1. Participant Characteristics and Data Screening**

The final quantitative sample comprised 501 SME owners and managers drawn from multiple sectors and from the Coastal, Middle, and Northern belts of Ghana. The sample covered a broad spread of firm sizes, ages, and sectors, reflecting the diversity of the Ghanaian SME landscape. At the same time, because survey recruitment relied partly on online dissemination and professional networks, the findings should not be treated as fully representative of all SMEs, especially those with weaker digital access.

Data screening indicated that skewness and kurtosis values for the study variables were within acceptable limits and that Mahalanobis distance checks did not identify problematic multivariate outliers. These results suggest that the dataset met the basic assumptions required for the factor and regression analyses reported in the study.

#### **3.2. Measurement Model: Factor Structure, Reliability, and Validity**

Exploratory Factor Analysis supported a multidimensional structure that was consistent with the theoretical specification of the study. The Kaiser-Meyer-Olkin statistic indicated sampling adequacy and Bartlett's test of sphericity confirmed that the correlation matrix was suitable for factor extraction. Nine components emerged, corresponding to fintech adoption, performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, habit, and SME performance, and together these factors explained more than 70% of the total variance.

Confirmatory Factor Analysis further supported the adequacy of the measurement model. Most standardized factor loadings exceeded 0.70, Cronbach's alpha and composite reliability values were above 0.80, and AVE values exceeded the 0.50 threshold, indicating satisfactory internal consistency and convergent validity. Model fit indices also indicated a good fit, with chi-square/df below 3, comparative fit indices above recommended thresholds, and RMSEA below 0.05.

Discriminant validity was supported by the square roots of AVEs exceeding the inter-construct correlations, while the correlation matrix did not show coefficients high enough to suggest severe overlap among the constructs. This finding also reduces, though does not eliminate, concerns about multicollinearity in the subsequent regression models.

### **3.3. Determinants of Digital Payment Adoption**

The survey responses suggest that several UTAUT2-related dimensions were salient in how SME owners evaluated digital payment platforms. In particular, performance expectancy, effort expectancy, social influence, and facilitating conditions appeared especially important in shaping favourable perceptions of adoption, while hedonic motivation, price value, and habit showed more mixed patterns. Because full multivariate regression outputs for the individual UTAUT2 constructs are not reported in the available materials, these findings are presented as descriptive and interpretive rather than as definitive estimates of relative effect size.

### **3.4. Relationship between Digital Payment Adoption and SME Performance**

Regression analysis indicated a positive and statistically significant association between digital payment adoption and SME performance. The results suggest that greater use of digital payment platforms was linked to better reported outcomes in areas such as sales growth, customer satisfaction, operational efficiency, and market reach. Fintech adoption explained 32.4% of the variance in SME performance, providing evidence of a substantively meaningful relationship within the study sample. However, because the full regression output is not reproduced here, the findings should be interpreted as evidence of association rather than as a fully documented causal model.

### **3.5. Thematic Insights on Adoption, Challenges, and Policy Levers**

Thematic analysis of the nine qualitative interviews offered nuanced insights into the contextual factors shaping digital payment adoption among Ghanaian SMEs. Participants consistently acknowledged the operational advantages of digital platforms, such as faster transactions, reduced cash-handling risks, improved record-keeping, and enhanced convenience for customers, which were viewed as contributing to better financial management and competitiveness. At the same time, several interrelated barriers were emphasized, including high upfront costs for devices and systems, unstable internet connectivity, limited technical support, low digital literacy among owners and staff, cybersecurity concerns, and a deep-seated preference for cash that reinforces resistance to organizational change.

Interviewees also highlighted gaps and ambiguities in the regulatory and policy environment, noting that while national strategies promote digitization, SMEs often lack clear, tailored guidance and incentives to adopt digital payment platforms.

Suggested interventions included targeted tax breaks and subsidized loans for digital infrastructure, collaborative training programs involving government, financial institutions, and technology providers, and clearer consumer protection and data security frameworks to build trust in digital financial ecosystems. Taken together, the qualitative themes complement the quantitative findings by illustrating how structural, financial, and behavioural factors interact to shape adoption decisions and by pointing to concrete policy and practice levers for scaling up digital payment use among Ghanaian SMEs.

## **4. Discussion**

### **4.1. Summary of Key Findings**

The study shows that digital payment platform adoption among Ghanaian SMEs is still relatively limited, with roughly one-third of surveyed firms actively using such systems, despite national efforts to promote a cash-lite economy. Nevertheless, adoption has a substantial and positive association with SME performance, with fintech usage explaining about 32.4% of the variance in outcomes such as sales growth, profitability, customer satisfaction, and market expansion. Adoption decisions appear to be strongly shaped by how SME owners perceive the usefulness and ease of use of digital payment platforms, the social signals they receive, and the availability of supportive conditions, while financial constraints, infrastructural deficits, low digital literacy, cybersecurity concerns, and entrenched cash preferences continue to emerge as key perceived barriers; however, these interpretations are based on descriptive patterns and qualitative insights rather than a fully reported multivariate determinants model.

The mixed-methods design adds value by showing convergence between the statistical results and the qualitative accounts from SME owners, government representatives, and financial sector participants. Quantitatively, the survey patterns suggested that performance expectancy, effort expectancy, social influence, and facilitating conditions were particularly salient in shaping adoption perceptions, while adoption itself was positively associated with SME performance. Qualitatively, participants described these same themes in practical terms, emphasizing faster transactions, improved customer convenience, better record-keeping, and the importance of supportive infrastructure and institutional backing. At the same time, the interviews helped explain why adoption remains modest overall by highlighting financial constraints, unstable connectivity, cybersecurity fears, low digital literacy, and persistent preferences for cash transactions. Taken together, the integrated findings show that digital payment platforms can improve SME performance, but that their benefits are mediated by structural, behavioural, and policy conditions that shape firms' ability to adopt and sustain their use.

### **4.2. Relation to Existing Literature**

These findings are broadly consistent with prior studies that link digital payments and related fintech tools with better firm-level performance, improved efficiency,

and deeper financial inclusion in emerging markets (Boateng & Okoe, 2015; Demirguc-Kunt et al., 2018; International Finance Corporation, 2025; Le, 2022). They also support the core logic of UTAUT-type adoption models by showing that perceived usefulness, ease of use, social influence, and enabling conditions remain central to technology uptake in SME settings (Davis, 1989; Venkatesh & Davis, 2000). At the same time, the Ghanaian case highlights how infrastructural gaps, regulatory uncertainty, and cash-based business norms can slow the translation of positive perceptions into widespread behavioral adoption (Bank of Ghana, 2018; Ghana Statistical Service & Ministry of Finance, 2022; UNCTAD, 2020).

### **4.3. Implications for Policy and Practice**

#### **4.3.1. Policy Recommendations**

The study underscores the importance of SME-focused interventions to accelerate digital payment adoption in Ghana (International Finance Corporation, 2025). While national strategies such as the National Financial Inclusion and Development Strategy (NFIDS) and the Digital Financial Services Policy Framework provide a strong foundation, implementation must be tailored to SME realities (Bank of Ghana, 2018; Ministry of Finance, Republic of Ghana, 2018; Ministry of Communications and Digitalisation, 2021; National Communications Authority, 2018). Key policy directions include:

##### **1) SME-Specific Financial Incentives**

Provide tax credits, grants, or subsidized loans through agencies such as the Ghana Enterprises Agency (GEA) and the National Board for Small Scale Industries (NBSSI) to reduce upfront costs of point-of-sale devices, software, and internet connectivity (International Finance Corporation, 2025).

##### **2) Infrastructure Expansion and Interoperability**

Align SME digitization with Ghana's Digital Agenda by prioritizing broadband expansion and mobile coverage in underserved regions (Ministry of Communications and Digitalisation, 2021; National Communications Authority, 2018). Ensuring interoperability across mobile money, banking, and fintech platforms will reduce fragmentation and encourage adoption (Bank of Ghana, 2020, 2021; Ghana Statistical Service & Ministry of Finance, 2022).

##### **3) Regulatory Clarity and Consumer Protection**

Strengthen SME-friendly regulatory frameworks under the Bank of Ghana's fintech guidelines, focusing on data privacy, dispute resolution, and cybersecurity (Bank of Ghana, 2020, 2021). Clearer rules will build trust among SMEs and their customers and support responsible innovation in the digital payment's ecosystem (Demirguc-Kunt et al., 2018; UNCTAD, 2020).

##### **4) Capacity Building and Digital Literacy**

Launch nationwide SME-focused digital literacy and cybersecurity awareness campaigns in partnership with business associations, financial institutions, and NGOs (International Finance Corporation, 2025). Tailored training will help

SMEs overcome low digital literacy and resistance to change, enabling them to make more effective use of digital payment platforms (Ghana Statistical Service & Ministry of Finance, 2022).

#### 4.3.2. Practice Recommendations

For SME owners and managers, digital payment adoption is not only a technological upgrade but a strategic business decision that can influence growth, competitiveness, and access to finance (Boateng & Okoe, 2015; International Finance Corporation, 2025; Le, 2022). Practical steps include:

##### 1) Agribusiness SMEs

Farmers and agribusiness traders can use mobile money platforms to receive payments directly from buyers, reducing cash-handling risks and improving transparency (Ghana Statistical Service & Ministry of Finance, 2022). For example, cocoa cooperatives could integrate digital payments to streamline transactions with exporters, strengthening their creditworthiness with banks and formal financial institutions (Demirguc-Kunt et al., 2018; Osei-Assibey et al., 2019).

##### 2) Retail SMEs

Small shops and market vendors can adopt QR code payments or mobile point-of-sale systems to serve customers who increasingly prefer cashless transactions (Le, 2022). This not only speeds up sales but also builds transaction histories that can support micro-loan applications and other forms of credit access (Demirguc-Kunt et al., 2018; International Finance Corporation, 2025).

##### 3) Manufacturing SMEs

Manufacturers can leverage digital payments for supply chain transactions, reducing delays in procurement and improving efficiency (International Finance Corporation, 2025; Manyika et al., 2016). For instance, a garment producer could use digital platforms to pay suppliers and receive payments from distributors, enhancing operational flow and strengthening relationships with formal financial partners (Boateng & Okoe, 2015; Le, 2022).

##### 4) Hospitality SMEs

Hotels, restaurants, and tourism operators can integrate mobile money and card payments to attract international and domestic customers and reduce reliance on cash (International Finance Corporation, 2025; UNCTAD, 2020). This improves customer satisfaction, reduces fraud risks, and can support more accurate financial reporting and planning (Demirguc-Kunt et al., 2018; Osei-Assibey et al., 2019).

##### 5) Technology SMEs

Startups and IT firms can embed digital payment solutions into their platforms, offering subscription-based services or e-commerce solutions that expand market reach (Kshetri, 2017; Manyika et al., 2016). This not only positions them competitively in Ghana's growing digital economy but also allows them to play a catalytic role in enabling other SMEs to adopt digital finance tools (International Finance Corporation, 2025).

#### 4.4. Limitations and Future Research

This study has several limitations that should be considered when interpreting the findings. First, the cross-sectional design limits strong causal inference because both adoption and performance were measured at a single point in time; although the regression results indicate a positive association, they do not on their own establish temporal causality between digital payment adoption and subsequent performance gains. Second, the quantitative data relied on self-reported measures, including the performance construct, which may be influenced by perceptual bias, recall limitations, and common-method effects; measurement validation and common-method considerations reduce this concern, but do not eliminate it. Third, the recruitment strategy combined online dissemination, professional networks, and business associations, which may have increased the participation of firms that were already more digitally aware or connected, so the findings should be generalized with caution, especially to SMEs in more remote areas or with weaker digital access.

Future research can build on this study by using longitudinal designs, comparing regions or countries, and examining sector-specific adoption trajectories in greater depth. Additional work is also needed on the behavioural mechanisms of trust, perceived risk, and resistance to change that continue to shape digital payment adoption among SMEs. In addition, because detailed multivariate regression outputs for the individual UTAUT2 constructs are not reported in the available materials, conclusions about their relative importance for adoption should be interpreted as indicative rather than definitive.

#### 5. Conclusion

This study indicates that digital payment platform adoption is positively associated with improved performance among Ghanaian SMEs, although uptake remains constrained by financial, infrastructural, and cultural barriers (Boateng & Okoe, 2015; International Finance Corporation, 2025). Within the study sample, fintech usage accounted for 32.4% of the variance in the SME performance construct, suggesting that greater use of digital payment systems is linked to stronger outcomes in areas, such as sales growth, customer satisfaction, operational efficiency, and market reach (Boateng & Okoe, 2015; Le, 2022). At the same time, the findings suggest that favourable adoption perceptions are shaped by expected usefulness, ease of use, social influence, and the presence of enabling conditions, while cost constraints, weak infrastructure, cybersecurity concerns, low digital literacy, and persistent cash preferences continue to limit broader uptake (Davis, 1989; Demircuc-Kunt et al., 2018; Venkatesh & Davis, 2000).

The mixed-methods design strengthens these conclusions by showing convergence between the quantitative patterns and the qualitative accounts of SME owners, government representatives, and financial-sector participants (International Finance Corporation, 2025). Taken together, the results suggest that digital payments can contribute meaningfully to SME development in Ghana, but that their

impact depends on whether firms can access the financial, technical, and institutional support needed for sustained adoption (Bank of Ghana, 2018; Ghana Statistical Service & Ministry of Finance, 2022; UNCTAD, 2020). For this reason, progress toward a cash-lite economy will require more than broad national strategy statements; it will also require SME-specific interventions that address affordability, trust, skills, infrastructure, and regulatory clarity (Bank of Ghana, 2018, 2020, 2021; Ministry of Finance, Republic of Ghana, 2018; Ministry of Communications and Digitalisation, 2021).

Policy measures such as targeted financial incentives, digital literacy and cybersecurity training, infrastructure expansion, and clearer consumer-protection frameworks could help widen adoption and improve the practical value of digital payment systems for SMEs (International Finance Corporation, 2025). Future research should build on these findings through longitudinal, sector-specific, and comparative studies that can test causal pathways more directly and provide fuller model-based evidence on the relative importance of specific adoption determinants (Demirguc-Kunt et al., 2018; Le, 2022; Manyika et al., 2016).

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### Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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