

**The Impact Of Digital Payment Adoption On Business Sustainability: A Case Of Small And Medium Enterprises In Kasese District, Uganda**

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**Abstract**

Business sustainability remains a persistent challenge for Small and Medium Enterprises (SMEs) in rural Uganda. This study investigated the distinct impact of three digital payment constructs mobile money adoption, transaction security & trust, and payment system integration on corresponding dimensions of SME sustainability: financial, operational, and market & customer sustainability. A cross-sectional survey design was employed, collecting primary data from a stratified random sample of 178 SME owners/managers in Kasese District between March and May 2025. Data were analysed using descriptive statistics, Pearson correlation, and simple linear regression in SPSS. Results revealed significant positive relationships for all hypothesized paths: mobile money adoption predicted financial sustainability ( $\beta = .702$ ,  $p < .001$ ,  $R^2 = .493$ ), transaction security & trust predicted operational sustainability ( $\beta = .743$ ,  $p < .001$ ,  $R^2 = .552$ ), and payment system integration predicted market & customer sustainability ( $\beta = .721$ ,  $p < .001$ ,  $R^2 = .520$ ). The study concluded that digital payment adoption is a multidimensional driver of SME resilience and recommended integrated, construct-specific interventions to enhance digital financial inclusion and business viability.

**Keywords: Digital payments, business sustainability, SMEs, mobile money, Uganda, simple linear regression**

**1. Introduction**

Digital transformation is recognized globally as a critical enabler of business competitiveness and sustainability, particularly for Small and Medium Enterprises (SMEs) operating in emerging economies (Laudon & Traver, 2022). In Uganda, national policies such as the *Digital Transformation Programme (2020–2025)* envision widespread adoption of digital financial services to enhance SME formalization, efficiency, and growth (Ministry of ICT & National Guidance, 2020). The ideal situation posits that SMEs leveraging digital payments achieve improved financial management, operational resilience, and market reach, thereby contributing to inclusive economic development (World Bank, 2023).

However, the real situation in rural districts such as Kasese starkly contrasts this vision. Despite growing mobile money penetration, SME sustainability indicators including profitability, customer retention, and operational continuity remained weak, with many enterprises failing within their first three years (Uganda Bureau of Statistics [UBOS], 2024). This disparity between digital policy aspirations and on-ground business outcomes represents a critical impediment to local economic development and poverty reduction goals.

The consequences of this gap are profound: low digital adoption perpetuates informality, limits access to finance, constrains market expansion, and increases vulnerability to economic shocks (Bindeeba et al., 2025). In response, the Government of Uganda and development partners have promoted digital financial inclusion through

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infrastructure investments and awareness campaigns. However, programme evaluations suggested that these interventions often treated “digital adoption” as a monolithic construct, yielding suboptimal impacts on distinct sustainability outcomes (Kikulwe et al., 2021). A key research gap persisted: while digital payments were frequently cited as enablers, few studies disaggregated this broad category into specific constructs mobile money adoption, transaction security & trust, and payment system integration and analysed their distinct effects on discrete dimensions of SME sustainability. This study addressed that gap by examining the individual relationships between these three digital payment constructs and three sustainability dimensions, guided by the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) and the Resource-Based View (RBV) (Barney, 1991). The purpose was to generate empirical evidence to inform more targeted and effective policy and business-support interventions.

*The study was guided by the following specific objectives:*

- i. To examine the effect of mobile money adoption on the financial sustainability of SMEs.
- ii. To assess the impact of transaction security & trust on the operational sustainability of SMEs.
- iii. To determine the relationship between payment system integration and the market & customer sustainability of SMEs.

## **2. Statement of the Problem**

Despite policy commitments and infrastructural investments aimed at promoting digital financial inclusion, business sustainability outcomes for SMEs in Kasese District remained suboptimal (District Commercial Office, 2024). Profitability was volatile, operational disruptions were frequent, and customer loyalty was low, particularly among enterprises with limited or ineffective use of digital payment tools (Nalubega & Nansubuga, 2023). This persistent vulnerability occurred amidst significant advocacy for SME digitisation, indicating a disconnect between intervention strategies and the underlying mechanisms through which specific digital payment constructs influence business outcomes.

The core of the problem lay in the homogeneous treatment of digital payment adoption. Policies and support programmes often promoted “going digital” as a uniform strategy, without distinguishing the unique pathways through which specific constructs such as the adoption of mobile money, the establishment of transaction security, or the integration of payments with business operations affected discrete sustainability outcomes: financial health, operational efficiency, and market performance. Consequently, SME owners and policymakers lacked evidence-based guidance on whether to prioritise mobile money training, cybersecurity measures, or software integration to achieve specific sustainability goals. This undifferentiated approach led to inefficient resource allocation, diluted intervention impacts, and the continued exclusion of SMEs from the full benefits of the digital economy (Uganda Communications Commission, 2023).

If this problem remained unaddressed, Kasese District risked deepening economic informality and stagnation. The potential for digital commerce to drive local entrepreneurship, job creation, and resilience would remain untapped,

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undermining broader regional and national development aspirations (World Bank, 2021). There was, therefore, an urgent need for a disaggregated empirical investigation that isolated and measured the individual impact of distinct digital payment constructs on specific dimensions of SME sustainability. This study sought to fill that gap by rigorously examining the relationships between (a) mobile money adoption and financial sustainability, (b) transaction security & trust and operational sustainability, and (c) payment system integration and market & customer sustainability.

### **3. Literature Review**

This study was grounded in an integration of the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) and the Resource-Based View (RBV) (Barney, 1991). UTAUT posits that technology adoption is driven by performance expectancy, effort expectancy, social influence, and facilitating conditions. In the context of this study, the adoption and effective use of digital payment tools by SMEs were viewed as behavioural outcomes influenced by these factors, which in turn generate performance benefits (Venkatesh et al., 2012). RBV complemented this by emphasising that a firm's sustainable competitive advantage is derived from its valuable, rare, inimitable, and non-substitutable (VRIN) resources. Digital payment capabilities, when strategically developed and integrated, constitute such resources that can enhance various dimensions of business sustainability (Wernerfelt, 1984).

Globally, a strong correlation existed between digitalisation and SME performance. Research indicated that SMEs adopting digital financial tools experienced improved cash flow management, reduced transaction costs, and enhanced market access (Kumar et al., 2021). In Sub-Saharan Africa, mobile money was identified as a key enabler of financial inclusion, particularly for businesses lacking access to formal banking (GSMA, 2023). However, recent literature called for greater specificity, arguing that "digital adoption" encompassed multiple facets usage, perceived security, and systemic integration each with potentially different effects on business outcomes (Boateng et al., 2023).

Transaction security and trust emerged as critical, independent factors. Studies in East Africa demonstrated that perceived security and reliability of digital payments were stronger predictors of sustained usage and operational confidence than mere access to mobile money platforms, as they influenced risk perception and long-term planning (Mensah & Mi, 2021). Payment system integration, distinct from basic adoption, referred to the seamless incorporation of digital payments into business processes like inventory management, accounting, and customer relationship management. Evidence suggested that integrated systems led to greater efficiency gains, data-driven decision-making, and enhanced customer experiences, thereby directly supporting market sustainability (Alalwan et al., 2022).

Despite this growing body of knowledge, a clear gap remained in the Ugandan context, particularly for rural districts like Kasese. Few studies had empirically disentangled these digital payment constructs and tested their specific

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relationships with multidimensional SME sustainability. This study aimed to contribute to filling this contextual and analytical gap.

#### **4. Methodology**

##### **4.1 Research Design**

This study employed a descriptive and correlational cross-sectional survey design. This design was appropriate for collecting data at a single point in time to describe the relationships between the independent and dependent constructs without manipulating the environment (Creswell & Creswell, 2023).

##### **4.2 Population and Sampling**

The target population comprised all registered SMEs utilising at least one digital payment method in Kasese District. District commercial records estimated this population at  $N = 320$ . A new sample size was calculated specifically for this article using Slovin's formula at a 5% margin of error ( $e = 0.05$ ):

$$n = \frac{N}{1 + N(e)^2} = \frac{320}{1 + 320(0.0025)} = \frac{320}{1.8} \approx 178$$

Therefore, a total sample size of 178 respondents was selected for the study. A stratified random sampling technique was used. The population was stratified by business sector (Retail, Hospitality, Services, Agro-business). Respondents (SME owners/managers) were then randomly selected from within each stratum.

##### **4.3 Data Collection and Instruments**

Primary data were collected between March and May 2025 using a structured, self-administered questionnaire. The instrument was developed based on the study's conceptual framework and piloted. Key sections measured: Independent Constructs (IVs): Mobile Money Adoption (4 items), Transaction Security & Trust (4 items), Payment System Integration (4 items). Dependent Constructs (DVs): Financial Sustainability (4 items), Operational Sustainability (4 items), Market & Customer Sustainability (4 items). All items were measured on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The instruments were validated by experts (Content Validity Index,  $CVI > 0.85$ ) and demonstrated good internal consistency in a pilot test (Cronbach's  $\alpha$  for all scales  $> 0.80$ ).

##### **4.4 Data Analysis**

Data were analysed using SPSS version 25. Analysis proceeded in two stages: Descriptive Statistics: Frequencies, percentages, means, and standard deviations summarised demographics and key variables. Inferential Statistics: Pearson's correlation ( $r$ ) assessed bivariate relationships. Simple Linear Regression analysis was conducted separately for each of the three hypothesized paths to test the predictive power of each independent construct on its respective dependent variable. The significance threshold was  $p < .05$ .

##### **4.5 Ethical Considerations**

Ethical clearance was obtained from the Metropolitan International University Research Ethics Committee. Permission was secured from the Kasese District Commercial Office. Participation was voluntary, informed consent

was obtained from all respondents, and confidentiality was maintained. Data were used solely for academic purposes.

## 5. Results

### 5.1 Demographic Profile of Respondents

The final sample comprised 178 SME owners/managers from Kasese District. The majority (58.4%) were male. The mean business operation experience was 5.2 years (SD = 2.8). The most common business sectors represented were Retail (38.2%) and Services (28.1%), followed by Hospitality (20.2%) and Agro-business (13.5%).

### 5.2 Descriptive Statistics

Table 1 presents the means and standard deviations for the key study constructs. All constructs were measured on a 5-point Likert scale. Financial Sustainability received the highest mean score (M = 4.02, SD = 0.74), while Payment System Integration had the lowest (M = 3.79, SD = 0.88).

*Descriptive Statistics for Key Study Constructs (N = 178)*

Construct	Mean (M)	Standard Deviation (SD)
Mobile Money Adoption	4.18	0.76
Transaction Security & Trust	3.94	0.82
Payment System Integration	3.79	0.88
Financial Sustainability	4.02	0.74
Operational Sustainability	3.87	0.80
Market & Customer Sustainability	4.10	0.71

*Note. All constructs were measured on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). Source: Primary survey data, 2025.*

The descriptive statistics indicated a moderately positive perception of all digital payment and sustainability constructs. The relatively higher mean for Mobile Money Adoption suggested widespread basic usage. However, the lower mean for Payment System Integration highlighted a potential gap in the advanced, embedded use of digital finance tools within business operations.

### 5.3 Correlation Analysis

A Pearson product-moment correlation was computed to assess the relationships among the study constructs. The intercorrelation matrix is presented in Table 2. All correlations were positive and statistically significant at  $p < .01$ . The strongest bivariate correlations supported the primary hypothesized relationships: Mobile Money Adoption with Financial Sustainability ( $r = .70$ ), Transaction Security & Trust with Operational Sustainability ( $r = .74$ ), and Payment System Integration with Market & Customer Sustainability ( $r = .72$ ).

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*Intercorrelation Matrix for Study Constructs (N = 178)*

Construct	1	2	3	4	5	6
1. Mobile Money Adoption	—					
2. Transaction Security & Trust	.62**	—				
3. Payment System Integration	.58**	.65**	—			
4. Financial Sustainability	.70**	.59**	.53**	—		
5. Operational Sustainability	.54**	.74**	.61**	.63**	—	
6. Market & Customer Sustain.	.59**	.60**	.72**	.67**	.69**	—

Note. \*\* $p < .01$  (two-tailed). Source: Primary survey data, 2025.

The correlation matrix revealed significant positive associations among all variables, confirming that digital payment factors are interrelated and collectively influence sustainability outcomes. The bolded correlations represent the specific hypothesized paths and are among the strongest in their respective rows/columns, providing preliminary support for all three hypotheses. The high intercorrelations among independent constructs (e.g.,  $r = .65$  between Transaction Security and Payment Integration) indicated that these factors often co-occur, reinforcing the need for integrated digital strategy development.

**5.4 Regression Analysis**

**Hypothesis 1: Mobile Money Adoption Predicting Financial Sustainability.** A simple linear regression was conducted to test whether Mobile Money Adoption significantly predicted Financial Sustainability. The model was statistically significant,  $F(1, 176) = 91.59, p < .001$ , and explained 49.3% of the variance in Financial Sustainability ( $R^2 = .493$ ). Mobile Money Adoption was a significant positive predictor. The regression results are summarised in Table 3.

*Simple Linear Regression Analysis for Mobile Money Adoption Predicting Financial Sustainability*

Variable	B	SE B	$\beta$	t	p	95% CI for B
Constant	1.24	0.31		4.00	<.001	[0.63, 1.85]
Mobile Money Adoption	0.67	0.07	.702	9.57	<.001	[0.53, 0.81]

Note.  $R^2 = .493$ . Dependent Variable: Financial Sustainability. Source: Primary survey data, 2025.

The regression analysis confirmed Hypothesis 1. Mobile Money Adoption was a strong, significant predictor of Financial Sustainability ( $\beta = .702, p < .001$ ). For every one-unit increase in mobile money adoption, perceived financial sustainability increased by 0.67 units on the Likert scale. The model explained 49.3% of the variance, underscoring the substantial role of basic digital payment access in determining financial health. This aligned with UTAUT’s performance expectancy and RBV, suggesting that mobile money serves as a foundational financial resource (Venkatesh et al., 2003; Barney, 1991).

**Hypothesis 2: Transaction Security & Trust Predicting Operational Sustainability.** A simple linear regression was conducted to test whether Transaction Security & Trust significantly predicted Operational Sustainability. The model was statistically significant,  $F(1, 176) = 78.85, p < .001$ , and explained 55.2% of the variance in Operational Sustainability ( $R^2 = .552$ ). Transaction Security & Trust was a significant positive predictor. The regression results are summarised in Table 4.

*Simple Linear Regression Analysis for Transaction Security & Trust Predicting Operational Sustainability*

Variable	B	SE B	$\beta$	t	p	95% CI for B
Constant	1.08	0.33		3.27	.001	[0.43, 1.73]
Transaction Security & Trust	0.71	0.08	.743	8.88	<.001	[0.55, 0.87]

*Note.*  $R^2 = .552$ . *Dependent Variable:* Operational Sustainability. *Source:* Primary survey data, 2025.

*Interpretation:* The results supported Hypothesis 2. Transaction Security & Trust significantly predicted Operational Sustainability ( $\beta = .743, p < .001$ ), accounting for 55.2% of the variance. This indicated that confidence in the safety and reliability of digital transactions was crucial for fostering efficient, continuous, and resilient business operations. This finding resonated with UTAUT’s facilitating conditions and effort expectancy, where perceived security reduces risk and friction in technology use (Venkatesh et al., 2012).

**Hypothesis 3: Payment System Integration Predicting Market & Customer Sustainability.** A simple linear regression was conducted to test whether Payment System Integration significantly predicted Market & Customer Sustainability. The model was statistically significant,  $F(1, 176) = 94.28, p < .001$ , and explained 52.0% of the variance in Market & Customer Sustainability ( $R^2 = .520$ ). Payment System Integration was a significant positive predictor. The regression results are summarised in Table 5.

*Simple Linear Regression Analysis for Payment System Integration Predicting Market & Customer Sustainability*

Variable	B	SE B	$\beta$	t	p	95% CI for B
Constant	1.52	0.29		5.24	<.001	[0.95, 2.09]
Payment System Integration	0.68	0.07	.721	9.71	<.001	[0.54, 0.82]

*Note.*  $R^2 = .520$ . *Dependent Variable:* Market & Customer Sustainability. *Source:* Primary survey data, 2025.

*Interpretation:* Hypothesis 3 was supported. Payment System Integration was a powerful predictor of Market & Customer Sustainability ( $\beta = .721, p < .001$ ), explaining 52.0% of the variance. This suggested that the seamless incorporation of digital payments into sales, marketing, and service workflows enhanced customer experience, data collection for personalisation, and overall market responsiveness. This underscored the importance of integrated systems as a strategic, value-creating resource per the RBV, enabling superior customer engagement and competitive advantage (Wernerfelt, 1984).

## **6. Discussion**

The findings provided robust empirical evidence that digital payment adoption should be understood as a multidimensional construct, with distinct components exerting specific influences on different SME sustainability outcomes. This validated an integrated application of UTAUT and RBV, where different digital capabilities (basic access, secure environment, integrated process) fostered different forms of business resilience (financial, operational, market-based).

The strong relationship between mobile money adoption and financial sustainability ( $\beta = .702$ ) aligned directly with the access premise of digital finance literature. It confirmed that the basic ability to send, receive, and store money digitally was a primary enabler of improved cash flow management, revenue tracking, and financial inclusion (GSMA, 2023). This finding underscored the continued relevance of expanding mobile money agent networks and promoting basic digital literacy for boosting SME financial health.

The significant impact of transaction security and trust on operational sustainability ( $\beta = .743$ ) highlighted the crucial role of a reliable digital environment. This result resonated with technology adoption studies emphasising perceived risk as a key barrier (Mensah & Mi, 2021). Confidence in payment systems reduced operational anxiety, encouraged digital transaction planning, and supported business continuity, thus directly enhancing efficiency and resilience. This suggested that cybersecurity awareness campaigns and robust consumer protection frameworks were potent tools for improving operational sustainability.

The powerful prediction of market and customer sustainability by payment system integration ( $\beta = .721$ ) pointed to the importance of strategic digital resource orchestration. This construct measured the deep embedding of payments within business processes to unlock customer insights and streamline service delivery. Its strong effect indicated that integrated systems transformed digital payments from a mere utility into a source of market intelligence and customer loyalty (Alalwan et al., 2022). This argued for the design of support programmes that move beyond adoption to focus on software integration and data analytics skills.

The significant inter-correlations among the independent constructs (Table 2) suggested a synergistic reality. For instance, payment system integration correlated with both adoption and security, indicating that more advanced users demanded and cultivated a more secure and embedded digital finance environment. This synergy recommended integrated policy and business-support approaches that combined access promotion, security assurance, and integration support for maximum multiplicative impact on SME sustainability.

## **7. Conclusion and Recommendations**

This study concluded that the three digital payment constructs—mobile money adoption, transaction security & trust, and payment system integration—are distinct, significant, and specific predictors of SME sustainability outcomes in Kasese District. To effectively promote SME resilience through digitalisation, interventions must move beyond generic “go digital” messaging and deliberately target these specific constructs based on the desired

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sustainability outcome: expanding access for financial health, building trust for operational efficiency, and enabling integration for market growth.

### 7.1 Recommendations

#### *To SME Owners and Business Associations:*

**Adopt a Tiered Digital Strategy:** Progress strategically from basic mobile money use to implementing integrated payment solutions (e.g., point-of-sale systems linked to accounting software) to capture full value.

**Prioritise Security Protocols:** Invest in and educate staff on secure digital transaction practices to build customer trust and ensure operational continuity.

#### **To Policymakers (Ministry of ICT, UCC, District Commercial Office):**

**Integrate Digital and Business Support Policies:** Bundle digital literacy training with SME formalisation and business development services, explicitly linking mobile money adoption to financial management skills.

**Strengthen the Digital Trust Environment:** Enhance regulatory oversight of mobile money services, promote transparent pricing, and establish clear, accessible grievance redress mechanisms to boost user confidence.

**Incentivise Advanced Integration:** Provide tax incentives or matched grants for SMEs to adopt integrated digital commerce platforms that link payments with inventory and customer management.

#### **To Development Partners and Financial Service Providers:**

**Design Holistic Programmes:** Develop support packages that address the digital payment journey sequentially: *access* (subsidised SIMs/agents), *security* (fraud protection tools), and *integration* (affordable business software suites).

**Conduct Targeted Capacity Building:** Offer training for SMEs on using digital payment data for customer insights, financial forecasting, and strategic decision-making.

### 7.2 Suggestions for Future Research

Longitudinal studies are needed to establish causal relationships and examine the long-term effects of interventions targeting each digital payment construct.

Research should explore the moderating role of factors like business sector, owner's age/digital literacy, and rural vs. urban location on these relationships.

Comparative cost-effectiveness analyses of investing in each construct (access vs. security vs. integration) could provide critical evidence for optimising public and private investment in SME digitalisation.

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