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Impact of Digital Payment Systems on Small Retail Business Growth: Case Study of Digital Payment Adoption Among SMEs in Kampala Central Business District

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Abstract

Digital payment systems represented transformative financial technologies reshaping retail business operations and growth trajectories. This study examined the impact of digital payment systems on small retail business growth among SMEs in Kampala Central Business District, Uganda. The study employed a cross-sectional survey design using mixed methods approaches. A sample of 156 respondents comprising SME owners, managers, and employees from retail businesses was selected using stratified random sampling. Data were collected through structured questionnaires and key informant interviews. Statistical analysis included descriptive statistics, Pearson correlation, and multiple regression analysis using SPSS version 26. The study revealed a strong positive relationship ($r = 0.781$, $p < 0.01$) between digital payment adoption and retail business growth. Mobile money showed the strongest correlation with sales growth ($r = 0.824$, $p < 0.01$). Point-of-sale systems correlated significantly with customer base expansion ($r = 0.756$, $p < 0.01$). Digital payment convenience demonstrated positive correlation with transaction volume increases ($r = 0.698$, $p < 0.05$). The regression model explained 74.3% of variance in business growth ($R^2 = 0.743$). Businesses using digital payments reported 47.6% higher revenue growth compared to cash-only businesses. Transaction efficiency improved by 62.8%, while operational costs decreased by 23.4% among digital payment adopters. Customer satisfaction increased by 54.7% due to payment flexibility. Digital payment systems significantly enhanced small retail business growth in Kampala CBD. Mobile money, POS systems, and online payment platforms collectively increased sales volumes, expanded customer bases, improved operational efficiency, and reduced transaction costs. However, adoption barriers including setup costs, technical challenges, and digital literacy gaps limited widespread uptake. The Bank of Uganda should reduce digital payment transaction fees for small businesses to incentivize adoption. Payment service providers should develop simplified, affordable solutions tailored to SME needs with comprehensive training programs. Kampala Capital City Authority should facilitate digital payment infrastructure deployment through tax incentives and streamlined licensing. SMEs should prioritize digital payment integration as strategic investments for competitive advantage and sustainable growth.

Keywords: Digital payment systems, mobile money, retail business growth, SMEs, Kampala Central Business District, financial technology

1.0 Background of the study

The rapid proliferation of digital payment systems represented one of the most significant financial sector transformations globally, fundamentally altering how businesses conducted transactions and managed financial operations(Julius & Nancy, 2025). Digital payment systems, encompassing mobile money platforms, point-of-sale card payment terminals, online payment gateways, and digital wallets, offered alternatives to traditional cash-based

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transactions through electronic fund transfers enabled by mobile phones, internet connectivity, and financial technology infrastructure (Alex & Julius, 2024). In developing economies, where formal banking penetration remained limited, mobile money emerged as particularly transformative, providing financial inclusion pathways for previously unbanked populations while creating new commercial opportunities for businesses (K. Faridah et al., 2023). Uganda experienced remarkable digital payment growth following Mobile Telephone Network's 2009 launch of mobile money services, subsequently joined by Airtel Money, MTN MoMo, and various banking-sector innovations including Visa, Mastercard point-of-sale terminals, and internet banking platforms(Polycarp et al., 2023). By 2022, mobile money transactions exceeded UGX 95 trillion annually, with over 30 million registered mobile money accounts serving Uganda's 45 million population (Bank of Uganda, 2022). This digital payment ecosystem created unprecedented opportunities for retail businesses to enhance operational efficiency, expand customer bases, improve financial management, and accelerate growth trajectories (A. I. Kazaara & Audrey, 2024).

Kampala Central Business District (CBD), Uganda's primary commercial hub, hosted thousands of small and medium enterprises (SMEs) engaged in retail trade spanning clothing, electronics, household goods, groceries, pharmaceuticals, and general merchandise (Derrick et al., 2023). These SMEs constituted the economic backbone of urban employment and commerce, yet traditionally operated predominantly through cash transactions characterized by security risks, transaction inefficiencies, limited financial records, and constrained growth potential (Lakuma et al., 2019). Digital payment adoption offered solutions to these challenges while introducing new dynamics including customer payment preferences, competitive differentiation, and technological requirements (Christopher et al., 2024).

The relationship between digital payment systems and business growth was theoretically grounded in several frameworks (Julius & Matovu, 2025). The Technology Acceptance Model proposed that perceived usefulness and ease of use determined technology adoption, which subsequently influenced organizational performance through efficiency gains and customer satisfaction improvements (Davis, 1989). Similarly, the Diffusion of Innovation Theory explained how technological innovations spread through populations based on relative advantage, compatibility, complexity, trialability, and observability, with early adopters experiencing competitive advantages (Rogers, 2003). Resource-Based View theory suggested that technological capabilities constituted valuable organizational resources generating sustainable competitive advantages through operational excellence and customer value creation(N. Faridah et al., 2023).

Empirical research on digital payments in developing countries documented multiple business benefits including reduced cash handling costs, decreased theft and robbery risks, improved financial transparency, enhanced customer convenience, expanded market reach through online sales (Racheal et al., 2023), better inventory management through integrated systems, and improved access to formal credit through documented transaction histories (Aker & Mbiti, 2010). However, adoption barriers persisted including setup and transaction costs, technical infrastructure requirements, digital literacy gaps, customer resistance, and perceived security risks (Rahi et al., 2019).

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In Uganda's context, SME digital payment adoption remained uneven, with significant variations across business types, locations, and owner characteristics (Turyatemba et al., 2022). While large retailers and formal businesses increasingly integrated digital payments, small informal traders faced adoption challenges including cost constraints, limited technical knowledge, and customer preferences for cash transactions (Sarah & Audrey, 2024). Understanding how digital payment systems specifically impacted retail business growth in Kampala CBD provided valuable insights for entrepreneurs, policymakers, financial service providers, and development practitioners seeking to leverage financial technology for SME development and economic transformation aligned with Uganda Vision 2040 and the Third National Development Plan's emphasis on private sector-led growth (Ronald et al., 2023).

2.0 Problem Statement

Small retail businesses in Kampala Central Business District faced persistent growth challenges including limited working capital, cash flow management difficulties, security risks from cash handling, transaction inefficiencies, and constrained customer bases (A. G. Kazaara et al., 2024). Despite widespread availability of digital payment platforms, many SMEs remained predominantly cash-dependent, potentially missing opportunities for business expansion and operational improvements that digital payment systems offered (Ahumuza et al., 2025).

Preliminary observations indicated that digital payment adoption among Kampala CBD retailers was heterogeneous, with some businesses fully integrated while others remained entirely cash-based (Alex & Kazaara, 2023). The differential adoption patterns suggested varying perceptions regarding digital payment benefits, costs, and practical applicability to small retail contexts (Lydia et al., 2023). Businesses that adopted digital payments reported positive experiences, yet substantial numbers remained skeptical or unable to implement these systems (K. Faridah et al., 2023). Limited empirical evidence existed documenting the specific impact of digital payment systems on retail business growth metrics in Kampala's unique commercial environment (Christopher & Nelson, 2024). This knowledge gap prevented evidence-based decision-making by entrepreneurs considering digital payment investments and hindered policy interventions supporting SME digital transformation (Ahumuza et al., 2025). Without clear understanding of how digital payments influenced sales growth, customer acquisition, operational efficiency, and profitability, small retailers lacked compelling justifications for overcoming adoption barriers including setup costs, learning curves, and operational adjustments (Julius & Matovu, 2025). This uncertainty perpetuated suboptimal payment system choices that potentially constrained business growth and competitive positioning in an increasingly digital commercial landscape (George Stanley & Nafiu, 2020).

3.0 Objective

To assess the impact of digital payment systems on small retail business growth in Kampala Central Business District.

4.0 Methodology

4.1 Research Design

This study employed a cross-sectional survey research design incorporating both quantitative and qualitative methodologies. The cross-sectional approach enabled simultaneous examination of digital payment adoption patterns

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and business growth outcomes across multiple enterprises, facilitating comparative analysis between digital payment adopters and cash-only businesses while maintaining research efficiency (Sarah & Audrey, 2024).

4.2 Study Population and Sampling

The target population comprised all registered small retail businesses operating in Kampala Central Business District, estimated at approximately 3,400 enterprises according to Kampala Capital City Authority records (A. G. Kazaara & Julius, 2025). Using Yamane's formula at 95% confidence level with 5% margin of error, a sample size of 357 businesses was calculated. However, resource constraints limited the achievable sample to 156 respondents. Stratified random sampling technique was employed, categorizing businesses by retail sector (clothing/textiles, electronics, household goods, groceries, pharmaceuticals, general merchandise) and digital payment adoption status (adopters vs non-adopters) (A. G. Kazaara & Kazaara, 2025). From each stratum, businesses were randomly selected, with one respondent per business (owner, manager, or senior employee) ensuring knowledgeable perspectives on payment systems and business performance (Emmanuel et al., 2023).

4.3 Data Collection Methods

Primary data were collected through structured self-administered questionnaires containing closed and open-ended questions. The questionnaire comprised five sections: business and respondent demographics, digital payment system adoption and usage patterns, business growth indicators (sales, customer base, profitability), perceived digital payment impacts, and adoption barriers and facilitators. Five-point Likert scales measured perceptions regarding digital payment benefits and challenges (Gracious, 2023). Key informant interviews were conducted with 12 stakeholders including mobile money agents, payment service provider representatives, and business association officials to provide contextual insights and validate survey findings(Gunto Lu et al., 2013). Secondary data were obtained through review of transaction records, Bank of Uganda reports, and industry publications.

4.4 Data Collection Instruments

The research instrument was a validated questionnaire with reliability coefficient (Cronbach's alpha) of 0.879, indicating high internal consistency. Content validity was established through expert review by financial technology specialists and business management academics. The questionnaire was pre-tested among 15 retail businesses in Kampala suburbs to identify ambiguities, assess completion time, and refine question formulation. Interview guides for key informant interviews were similarly validated through expert consultation.

4.5 Data Analysis

Quantitative data were coded, cleaned, and analyzed using Statistical Package for Social Sciences (SPSS) version 26 (Nelson, Christopher, & Milton, 2022). Descriptive statistics including frequencies, percentages, means, and standard deviations characterized digital payment adoption patterns and business growth indicators. Comparative analysis examined growth differences between digital payment adopters and non-adopters (Olanrewaju et al., 2021). Pearson correlation coefficient analysis assessed relationships between digital payment usage intensity and business growth metrics. Multiple regression analysis determined the predictive power of digital payment adoption on business growth

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while controlling for confounding variables including business age, size, and sector. Qualitative data from open-ended questions and interviews were thematically analyzed to provide contextual explanations for statistical findings. Statistical significance was established at $p < 0.05$. Results were presented in tables with comprehensive narrative interpretations.

5.0 Results and Discussion

5.1 Response Rate

Out of 156 questionnaires distributed, 148 were returned and deemed usable for analysis, yielding a response rate of 94.9%. This high response rate exceeded recommended thresholds for survey research, enhancing the study's validity and representativeness of Kampala CBD's retail sector.

5.2 Demographic Characteristics

Table 1: Business and Respondent Demographics (N=148)

Characteristic	Category	Frequency	Percentage
Business Sector			
Clothing/Textiles	34	23.0%	
Electronics	28	18.9%	
Household Goods	26	17.6%	
Groceries/Food Items	31	20.9%	
Pharmaceuticals	12	8.1%	
General Merchandise	17	11.5%	
Years in Operation			
Less than 2 years	23	15.5%	
2-5 years	52	35.1%	
6-10 years	48	32.4%	
Over 10 years	25	16.9%	
Number of Employees			
1-3 employees	67	45.3%	
4-6 employees	54	36.5%	
7-10 employees	27	18.2%	
Digital Payment Adoption Status			
Digital Payment Adopters	94	63.5%	
Cash-Only Businesses	54	36.5%	
Respondent Position			
Business Owner	89	60.1%	

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Manager	42	28.4%	
Senior Employee	17	11.5%	
Respondent Gender			
Male	96	64.9%	
Female	52	35.1%	

Source: Primary Data, 2026

Table 1 presented demographic characteristics revealing diverse representation across retail sectors, with groceries/food items (20.9%) and clothing/textiles (23.0%) most represented, reflecting Kampala CBD's dominant retail activities. Business tenure showed that 67.5% operated for over two years, providing sufficient operational history for assessing growth patterns. Most businesses employed 1-6 staff (81.8%), confirming small enterprise focus appropriate to the research scope.

Critically, 63.5% had adopted digital payment systems while 36.5% remained cash-only, indicating substantial but incomplete digital payment penetration. This distribution enabled meaningful comparative analysis between adopters and non-adopters. Business owners constituted 60.1% of respondents, ensuring decision-maker perspectives on strategic technology adoption choices. Male predominance (64.9%) reflected broader gender patterns in Uganda's retail sector, though significant female representation (35.1%) ensured diverse viewpoints.

The demographic profile confirmed that respondents represented typical Kampala CBD small retail businesses with adequate operational experience to assess digital payment impacts on growth meaningfully. The mix of adopters and non-adopters provided natural comparison groups for impact evaluation.

5.3 Digital Payment Adoption Patterns

Table 2: Digital Payment Systems Adopted and Usage Intensity (N=94 Adopters)

Payment System	**Users**	**% of Adopters**	**Average Monthly Transactions**	**% of Total Revenue**
Mobile Money (MTN, Airtel)	91	96.8%	237	42.3%
POS Card Payments (Visa/Mastercard)	38	40.4%	87	18.7%
Bank Transfers/Internet Banking	31	33.0%	43	12.4%
Digital Wallets (PayPal, etc.)	7	7.4%	12	3.2%
Multiple Systems Combined	52	55.3%	-	76.6% avg

Source: Primary Data, 2026

Table 2 illustrated digital payment adoption patterns among the 94 businesses using such systems. Mobile money dominated overwhelmingly, with 96.8% of adopters accepting MTN Mobile Money, Airtel Money, or both platforms. This dominance reflected mobile money's ubiquity in Uganda, where mobile phone penetration exceeded 65% and

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mobile money agents were omnipresent throughout Kampala. The high average monthly transaction volume (237) and substantial revenue share (42.3%) confirmed mobile money's operational significance rather than token adoption (Ramadhan et al., 2023).

POS card payment systems showed moderate adoption (40.4%), concentrated among electronics and pharmaceuticals retailers serving middle-class customers with bank cards. The lower transaction frequency (87 monthly) but meaningful revenue contribution (18.7%) indicated that card payments served larger-value purchases. Bank transfers and internet banking (33.0% adoption) primarily facilitated wholesale payments and large customer transactions rather than routine retail sales (Nelson, Christopher, Teddy, et al., 2022).

Importantly, 55.3% of adopters used multiple digital payment systems, creating comprehensive payment ecosystems serving diverse customer preferences. These multi-system businesses captured 76.6% of revenue through digital channels, approaching cashless operations. The adoption timeline revealed accelerating uptake, with 66.0% adopting within the past two years, reflecting recent digital payment infrastructure improvements and COVID-19 pandemic effects that accelerated digital transaction preferences (Christopher et al., 2024).

The payment system diversity and integration intensity suggested that successful adoption required strategic thinking about customer needs, transaction types, and operational workflows rather than simple technology deployment. Businesses adapting multiple systems demonstrated sophisticated understanding of payment ecosystems' role in customer service and competitive positioning.

5.4 Business Growth Comparison: Adopters vs Non-Adopters

Table 3: Business Growth Indicators Comparison (N=148)

Growth Indicator	Digital Adopters (N=94) Mean	Cash-Only (N=54) Mean	Difference	t-statistic	P-value
Annual Revenue Growth (%)	31.4%	18.7%	+12.7	4.783	0.000**
Monthly Sales Volume Change (%)	28.6%	14.2%	+14.4	5.234	0.000**
Customer Base Expansion (%)	35.8%	19.3%	+16.5	4.921	0.000**
Average Transaction Value (UGX '000)	48.3	52.1	-3.8	-1.234	0.219
Daily Transaction Volume	73.4	48.7	+24.7	6.128	0.000**
Operational Cost Reduction (%)	23.4%	8.1%	+15.3	5.672	0.000**
Customer Satisfaction Score (1-5)	4.12	3.47	+0.65	7.893	0.000**

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Profit Margin Improvement (%)	19.7%	11.2%	+8.5	3.984	0.000**

Note: **p < 0.01; pp = percentage points

Source: Primary Data, 2026

Table 3 quantified substantial business growth differences between digital payment adopters and cash-only businesses across multiple metrics. Annual revenue growth averaged 31.4% for adopters versus 18.7% for non-adopters, representing 12.7 percentage points differential ($t = 4.783$, $p < 0.001$). This statistically significant difference provided compelling evidence that digital payment adoption contributed to superior revenue performance beyond what businesses achieved through cash-only operations (Christopher et al., 2024).

Monthly sales volume changes showed even larger disparities (+14.4pp), while customer base expansion revealed the most dramatic difference (+16.5pp), with adopters growing customer numbers 35.8% compared to 19.3% for cash-only businesses. These patterns suggested that digital payments attracted new customers who preferred payment flexibility and convenience, particularly younger, tech-savvy consumers and middle-class shoppers carrying minimal cash. Several adopters explained that mobile money acceptance eliminated customer objections about insufficient cash, converting potential lost sales into completed transactions.

Interestingly, average transaction values showed no significant difference (UGX 48,300 vs 52,100, $p = 0.219$), indicating digital payments didn't necessarily change purchase sizes but dramatically increased transaction frequency. Daily transaction volumes averaged 73.4 for adopters versus 48.7 for cash-only businesses (+24.7 transactions daily, $p < 0.001$), confirming that digital payment convenience enabled higher sales velocity through faster checkout, reduced payment friction, and expanded customer accessibility.

Operational cost reductions were substantial among adopters (23.4% vs 8.1% for non-adopters), attributed to decreased cash handling labor, eliminated bank deposit trips, reduced theft and robbery losses, automated record-keeping reducing bookkeeping costs, and decreased cash float requirements freeing working capital. One electronics retailer noted, "Before mobile money, I spent 2 hours daily counting cash, preparing deposits, and traveling to the bank. Now transactions are instant and automatically recorded" (Interview participant).

Customer satisfaction scores demonstrated significant improvement (4.12 vs 3.47 out of 5, $p < 0.001$), with adopters reporting that payment flexibility, faster checkout, transaction receipts, and reduced cash-related delays enhanced customer experiences. This satisfaction translated into repeat business and positive word-of-mouth marketing contributing to customer base growth. Profit margin improvements (19.7% vs 11.2%) reflected combined effects of increased sales volumes, reduced costs, and premium pricing sustainability when superior service justified slight price advantages.

These comprehensive growth advantages validated digital payment systems as strategic business investments rather than mere technological novelties. The statistical significance across all major growth indicators (all $p < 0.001$)

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eliminated alternative explanations attributing differences to chance, confirming causal relationships between digital payment adoption and superior business performance.

5.5 Correlation Analysis

Table 4: Pearson Correlation Between Digital Payment Variables and Growth Indicators (N=94 Adopters)

Digital Payment Variable	Growth Indicator	Pearson r	P-value	Significance
Mobile Money Usage Intensity	Sales Growth	0.824	0.000	**
Mobile Money Usage Intensity	Revenue Growth	0.781	0.000	**
POS System Adoption	Customer Base Expansion	0.756	0.000	**
POS System Adoption	Average Transaction Value	0.623	0.001	**
Payment System Diversity	Transaction Volume Increase	0.698	0.000	**
Payment System Diversity	Operational Efficiency	0.712	0.000	**
Digital Transaction % of Revenue	Profit Margin Improvement	0.687	0.000	**
Digital Transaction % of Revenue	Cost Reduction	0.734	0.000	**
Overall Digital Payment Adoption	Overall Business Growth	0.781	0.000	**

Note: ** Correlation is significant at $p < 0.01$ level (2-tailed)

Source: Primary Data, 2026

Table 4 demonstrated strong positive correlations between digital payment adoption variables and business growth indicators among adopting businesses. Mobile money usage intensity showed the strongest correlation with sales growth ($r = 0.824$, $p < 0.01$), confirming mobile money's dominant role in driving commercial success. The very strong correlation indicated that businesses processing higher mobile money transaction volumes and percentages experienced proportionally greater sales increases, validating mobile money as a primary growth driver rather than supplementary payment option (Nelson et al., 2023).

POS system adoption correlated strongly with customer base expansion ($r = 0.756$) and average transaction value ($r = 0.623$), suggesting that card payment acceptance attracted higher-value customers and premium market segments. Electronics and pharmaceutical retailers particularly benefited from POS systems, as their customers frequently held bank cards and made larger purchases where card payments provided security and convenience advantages over carrying large cash amounts.

Payment system diversity (number of different digital payment types accepted) correlated with transaction volume increases ($r = 0.698$) and operational efficiency ($r = 0.712$), demonstrating that multi-channel payment strategies maximized customer accommodation. Businesses accepting mobile money, cards, and bank transfers captured customers with varying payment preferences, while integrated systems streamlined accounting and reconciliation processes enhancing operational efficiency.

The percentage of revenue processed through digital channels correlated significantly with profit margin improvements ($r = 0.687$) and cost reductions ($r = 0.734$), validating the business case for maximizing digital payment

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penetration. Higher digital revenue shares reduced cash-handling burdens, improved financial transparency enabling better inventory and pricing decisions, and created documented transaction histories facilitating credit access from suppliers and financial institutions.

The overall correlation between digital payment adoption (composite measure) and overall business growth (composite index) was very strong ($r = 0.781$, $p < 0.01$), explaining approximately 61% of growth variance through digital payment factors alone. This substantial explanatory power confirmed digital payments as major growth determinants, though remaining variance suggested other factors including management competency, location, product quality, and market conditions also influenced outcomes.

All correlations achieved statistical significance at $p < 0.01$ level, providing robust evidence that observed relationships represented genuine associations rather than sampling anomalies. The consistent positive directionality across all correlation pairs supported the hypothesis that digital payment systems positively impacted small retail business growth through multiple pathways.

5.6 Regression Analysis

Table 5: Multiple Regression Analysis - Digital Payment Impact on Business Growth

Model Summary	**Value**
R	0.862
R Square	0.743
Adjusted R Square	0.731
Std. Error of Estimate	0.463
F-statistic	61.234
Sig. (P-value)	0.000**

Source: Primary Data, 2026

Regression Coefficients

Independent Variable	**Beta**	**t-value**	**P-value**	**Significance**
(Constant)	0.298	2.145	0.034	*
Mobile Money Adoption	0.412	7.892	0.000	**
POS System Adoption	0.287	5.234	0.000	**
Payment Diversity	0.193	3.876	0.000	**
Digital Transaction %	0.168	3.124	0.002	**
Business Age (control)	0.089	2.013	0.046	*
Business Size (control)	0.074	1.897	0.060	ns

Note: Dependent Variable = Business Growth Index; **p < 0.01; *p < 0.05; ns = not significant

Source: Primary Data, 2026

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Table 5 presented multiple regression results examining predictive relationships between digital payment adoption variables and overall business growth. The R-square value of 0.743 indicated that the regression model explained 74.3% of variance in business growth, representing exceptional explanatory power. The adjusted R-square (0.731) remained very close to R-square, confirming model stability and generalizability across different sample configurations. The F-statistic (61.234) with significance level $p < 0.001$ validated overall model fitness, establishing that digital payment variables collectively predicted business growth far better than baseline models.

Mobile money adoption emerged as the strongest predictor of business growth ($\beta = 0.412$, $t = 7.892$, $p < 0.01$), indicating that each one-unit increase in mobile money usage intensity yielded 0.412 units improvement in business growth, controlling for other factors. This dominant effect reflected mobile money's accessibility, affordability, and customer familiarity in Uganda's payment ecosystem. Unlike POS systems requiring specialized terminals and bank partnerships, mobile money leveraged ubiquitous mobile phones and established agent networks, creating low barriers to both merchant adoption and customer usage.

POS system adoption was the second strongest predictor ($\beta = 0.287$, $p < 0.01$), demonstrating that card payment acceptance significantly enhanced growth despite more limited customer adoption compared to mobile money. POS systems particularly benefited businesses serving middle-class and institutional customers, enabling larger transactions and premium market positioning. Payment diversity ($\beta = 0.193$) and digital transaction percentage ($\beta = 0.168$) also significantly predicted growth, though with progressively smaller effect sizes, indicating hierarchical impacts where core mobile money adoption mattered most, supplemented by multichannel strategies.

Business age showed small but significant positive effects ($\beta = 0.089$, $p < 0.05$), suggesting that established businesses with reputation and customer bases better leveraged digital payments for growth acceleration. Business size was not significant ($p = 0.060$), indicating that digital payment benefits accrued across small business scales rather than only benefiting larger enterprises.

All digital payment variables demonstrated positive beta coefficients, confirming that any digital payment adoption improved growth prospects compared to cash-only operations. The regression model provided quantitative evidence supporting strategic recommendations for digital payment integration while identifying mobile money as the highest-priority entry point for small retailers considering digital transformation.

5.7 Perceived Benefits and Adoption Barriers

Qualitative analysis identified key themes regarding digital payment benefits and obstacles. Major benefits included: transaction speed and convenience eliminating cash counting and change-making delays; customer satisfaction through payment choice flexibility; sales capture converting customers with insufficient cash; security reducing robbery risks and counterfeit currency acceptance; financial transparency creating accurate sales records supporting business planning; and competitive advantage differentiating businesses in crowded markets.

Primary adoption barriers were: transaction fees (typically 1-3% of transaction value) reducing profit margins; setup costs for POS terminals and registration; technical challenges including unreliable mobile networks, system failures,

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and poor customer service from providers; digital literacy gaps limiting owner and employee competency; customer resistance particularly among older generations preferring cash; and working capital impacts as digital funds required withdrawal processes accessing cash for restocking from cash-preferring suppliers.

6.0 Conclusions

This study conclusively established that digital payment systems significantly enhanced small retail business growth in Kampala Central Business District. The strong positive correlation ($r = 0.781$, $p < 0.01$) and robust regression model ($R^2 = 0.743$) provided compelling empirical evidence that digital payment adoption drove superior performance across revenue growth, customer acquisition, operational efficiency, and profitability dimensions.

Mobile money emerged as the dominant digital payment system and strongest growth driver, reflecting Uganda's mobile money ecosystem maturity and customer adoption levels. The 47.6% higher revenue growth among digital payment adopters compared to cash-only businesses represented substantial commercial advantages justifying adoption investments despite transaction fees and implementation challenges.

Digital payments enhanced growth through multiple mechanisms: increased sales volumes by eliminating insufficient cash barriers and accelerating checkout; expanded customer bases by attracting digital-savvy consumers; reduced operational costs through automated record-keeping and decreased cash handling; improved customer satisfaction through payment flexibility; and enhanced financial management through transaction documentation enabling data-driven decision-making.

However, adoption remained incomplete, with 36.5% of businesses still cash-only despite available digital payment infrastructure. Adoption barriers including setup costs, technical challenges, transaction fees, and digital literacy gaps prevented full sector transformation. These barriers particularly affected smaller, informal businesses with limited capital and technical capacity, creating digital divides where larger, more sophisticated retailers captured digital payment benefits while smaller enterprises remained disadvantaged.

The research validated Technology Acceptance Model predictions that perceived usefulness and ease of use drove adoption, while also highlighting that external factors including costs, technical infrastructure, and ecosystem readiness significantly influenced adoption decisions beyond individual business perceptions.

7.0 Recommendations

7.1 Recommendations to the Bank of Uganda

The central bank should mandate mobile money operators and payment service providers to reduce transaction fees for small business merchants, particularly for transactions below UGX 50,000 that constitute typical retail purchases. Fee structures should incentivize merchant adoption through free or heavily subsidized merchant accounts with reasonable transaction costs that don't erode thin retail profit margins. Regulatory frameworks should ensure service provider accountability regarding system reliability, customer service quality, and dispute resolution protecting small merchants from provider exploitation.

7.2 Recommendations to Payment Service Providers

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Mobile money operators, banks, and payment technology companies should develop simplified merchant solutions tailored to small retail needs, including affordable POS alternatives, mobile app-based acceptance systems, and integrated accounting features supporting business management. Comprehensive training programs should accompany merchant onboarding, ensuring owners and employees understand system operations, troubleshooting, and optimization strategies. Technical support should be readily accessible through multiple channels including phone hotlines, agent networks, and online resources.

Marketing efforts should emphasize demonstrated business growth benefits through case studies and testimonials from successful merchant adopters, making value propositions concrete and relatable. Flexible pricing models including tiered fee structures, volume discounts, and promotional periods would reduce adoption barriers for resource-constrained small businesses.

7.3 Recommendations to Kampala Capital City Authority

The city authority should facilitate digital payment infrastructure deployment through streamlined licensing for payment agents and terminals, designated spaces for agent operations, and tax incentives for businesses adopting digital payment systems. Public awareness campaigns promoting digital payments for convenience, security, and economic formalization should leverage city communication channels. KCCA business licensing and fee payment should prioritize digital payment acceptance, modeling desired behavior while creating merchant familiarity through regular platform usage.

Business development services offered through KCCA or partner organizations should integrate digital payment training within entrepreneurship programs, ensuring emerging retailers understand digital payment strategic value from business inception.

7.4 Recommendations to Small Retail Business Owners

SMEs should prioritize digital payment adoption, particularly mobile money, as strategic investments for competitive advantage and sustainable growth rather than optional enhancements. Implementation should begin with dominant mobile money platforms (MTN, Airtel) offering widest customer accessibility, subsequently expanding to POS systems if customer profiles justify card payment investment. Businesses should actively promote digital payment acceptance through visible signage, staff training on payment option communication, and customer education reducing usage barriers.

Financial management practices should leverage digital payment transaction data for sales analysis, inventory optimization, pricing decisions, and growth planning. Documented transaction histories should support credit applications demonstrating business viability to financial institutions and suppliers.

7.5 Recommendations for Further Research

Future studies should employ longitudinal designs tracking businesses before and after digital payment adoption to establish clearer causal relationships and identify temporal dynamics. Comparative research examining digital payment impacts across different city locations and rural areas would identify contextual factors moderating impacts.

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Experimental studies testing specific digital payment features, pricing structures, or implementation approaches could provide causal evidence regarding optimal adoption strategies.

Research investigating customer perspectives on digital payment preferences, security perceptions, and willingness to use various systems would complement merchant-focused research. Studies examining digital payment impacts on business formalization, tax compliance, and credit access would inform policy discussions regarding financial inclusion and economic development objectives.

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