

## **ADOPTION OF DIGITAL PAYMENTS AND REVENUE PERFORMANCE OF SMALL CHAIN SUPERMARKETS IN NAIROBI AND KIAMBU COUNTIES, KENYA**

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### **ABSTRACT**

Kenya's retail sector has recorded near-universal uptake of mobile money and card-based payment platforms, yet small chain supermarkets continue to report weak and inconsistent financial returns from these investments. The purpose of this study was to assess the influence of the adoption of digital payments on revenue performance in small retail chain supermarkets in Nairobi and Kiambu Counties, Kenya. The problem addressed is the persistent disconnect between the widespread availability of digital payment platforms at the checkout counter and the ability of small chain retailers to translate that availability into measurable revenue gains, a gap attributed in earlier work to shallow integration, high transaction costs and reactive rather than strategic adoption. The study adopted a convergent parallel mixed-methods design anchored on Innovation Diffusion Theory and the Technology Acceptance Model. A sample of 117 employees was drawn from six branches of Magunas, Cleanshelf and Maathai supermarket chains using multi-stage stratified, purposive and random sampling, yielding 103 valid responses (88 per cent). Seventeen customers participated in qualitative interviews. Quantitative data were analysed using descriptive statistics and hierarchical multiple regression in SPSS version 28, while qualitative data were analysed thematically and integrated through triangulation. The findings show that all sampled branches had adopted at least two digital payment platforms, with M-Pesa accepted universally (100 per cent) and card payments in 84 per cent of branches, yet only 25 per cent had fully integrated these platforms with point-of-sale, inventory and accounting systems, and 67 per cent of managers described their adoption as reactive. Adoption was associated with a 36.6 per cent rise in daily transactions, a 32.1 per cent rise in monthly revenue and an increase in the customer repeat rate from 22 to 38 per cent. Regression results confirmed a statistically significant positive influence of adoption on revenue performance ( $\beta = 0.271$ ,  $t = 3.714$ ,  $p < 0.05$ ), leading to rejection of the null hypothesis. The study concludes that adoption of digital payments is a significant strategic driver of revenue performance, but that revenue gains are realised through depth of integration rather than mere availability of platforms. It recommends that retail SME owners integrate payment platforms with back-office systems, that fintech providers design

affordable integration tools for small chains, and that policy makers cap transaction fees and subsidise digital infrastructure for underserved retail enterprises.

**Keywords:** *digital payment adoption, revenue performance, small chain supermarkets, mobile money, payment integration, retail SMEs, Kenya*

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## 1. Introduction

The global digital payment ecosystem has undergone unprecedented transformation since 2020, fundamentally reshaping how retail businesses operate and generate revenue. The COVID-19 pandemic is estimated to have accelerated digital payment adoption by three to five years, with global digital payment transaction values reaching USD 8.49 trillion in 2022 and projected to exceed USD 14.78 trillion by 2027 (Statista, 2023). In developed economies, retail small and medium enterprises have increasingly leveraged digital payment platforms not merely as transaction facilitators but as strategic tools for revenue optimisation (OECD, 2021). McKinsey and Company (2021) reported that retailers implementing integrated digital payment systems experienced average revenue increases of 15 to 25 per cent within eighteen months of adoption, attributed to enhanced customer convenience, reduced transaction friction and improved operational visibility. Businesses offering multiple digital payment options have also been shown to achieve substantially higher purchase completion rates than cash-only establishments (MageComp, 2024).

Across Africa, digital financial services have emerged as catalysts for SME growth and financial inclusion, with mobile money platforms leading the transformation of retail payment ecosystems. Sub-Saharan Africa accounts for approximately 70 per cent of global mobile money transactions, processing over USD 490 billion in annual transaction values (GSMA, 2024). In Ghana, Boateng et al. (2021) demonstrated that retail SMEs adopting mobile money recorded 18 to 32 per cent improvements in daily sales volumes alongside stronger liquidity management. Beck et al. (2021) similarly found that digital payment adoption enabled more than 40 per cent of African retail enterprises to maintain operational continuity during pandemic-related restrictions. Regional constraints nonetheless persist, including infrastructure limitations, regulatory inconsistency and uneven digital literacy among merchants and consumers (Onileowo et al., 2024).

Kenya represents a global reference point in mobile financial services, with M-Pesa having fundamentally reshaped retail commerce. The Central Bank of Kenya (2023) reported that digital payment transactions reached KES 47.4 trillion in 2022, a 22 per cent increase over the previous year, with retail trade accounting for approximately 35 per cent of transaction volumes. Jepchumba and Simiyu (2021), surveying 120 retail establishments in Nairobi, found that digital payment adoption improved record-keeping accuracy for 89 per cent of respondents and raised customer satisfaction for 76 per cent of businesses. Mue (2021) documented that Lipa Na M-Pesa and bank POS terminals reduced revenue leakage by 12 to 18 per cent during peak shopping seasons. However, implementation challenges persist, including transaction fees consuming 2 to 4 per cent of transaction values, intermittent connectivity and uneven staff digital competency (Tiony, 2023).

Small chain supermarkets occupy a strategic yet understudied position in Kenya's retail ecosystem, operating between independent single-store retailers and large national chains. These enterprises typically run two to twenty branches under unified brand management and generate annual revenues ranging from KES 100 million to KES 2 billion (Kenya Association of Manufacturers, 2024). They face distinctive challenges in implementing digital payment

strategies because they must standardise operations across multiple locations while remaining cost-efficient and locally responsive (Musa & Njeru, 2023). It is against this background that this paper examines the first specific objective of a larger study, namely the influence of the adoption of digital payments on revenue performance among small retail chain supermarkets in Nairobi and Kiambu Counties.

### **1.1 Statement of the Problem**

Retail small chain supermarkets in Kenya face mounting pressure to adopt digital payment systems yet struggle to translate this adoption into measurable revenue performance improvements. Despite Kenya's digital payment transactions reaching KES 47.4 trillion in 2022, with retail trade accounting for 35 per cent of total volumes (Central Bank of Kenya, 2023), many small chain supermarkets report suboptimal financial returns from their digital payment investments. Tiony (2023) found that 68 per cent of retail SMEs experienced transaction fee burdens consuming 2 to 4 per cent of revenue, while only 23 per cent achieved meaningful integration with core business systems. Mue (2021) documented that poorly implemented digital payment systems resulted in 15 to 20 per cent revenue leakage during peak seasons due to reconciliation errors and system downtimes, and K et al. (2024) reported that 47 per cent of small chain supermarkets abandoned digital payment expansion for lack of demonstrable revenue justification.

The existing literature compounds rather than resolves this problem. Current research predominantly examines adoption determinants and operational efficiency metrics while neglecting the analysis of revenue optimisation outcomes (Alauddin & Chowdhury, 2021). Studies by Beck et al. (2021) and Asongu and Boateng (2021) focus on financial inclusion impacts rather than strategic business performance. Most empirical investigations concentrate on either large corporate retailers or informal micro-enterprises, creating a knowledge vacuum regarding formalised small chain supermarkets that operate between these extremes (Sahi et al., 2021). Work by Onileowo et al. (2024) and GSMA (2024) emphasises transaction volumes and user uptake but does not establish linkages between adoption depth and revenue performance. This study therefore sought to assess the influence of the adoption of digital payments on revenue performance in small retail chain supermarkets in Nairobi and Kiambu Counties, Kenya.

### **1.2 Objective of the Study**

To assess the influence of the adoption of digital payments on revenue performance in small retail chain supermarkets in Kenya.

### **1.3 Research Hypothesis**

**H<sub>01</sub>:** There is no significant influence of the adoption of digital payments on revenue performance in small retail chain supermarkets in Nairobi and Kiambu Counties, Kenya.

## **2. Literature Review**

### **2.1 Theoretical Review**

Two theories anchor the examination of digital payment adoption and its revenue consequences in this study: Innovation Diffusion Theory and the Technology Acceptance Model. Together they explain both the organisational patterning of adoption decisions and the behavioural mechanisms through which adopted technologies convert into business outcomes.

### **2.1.1 Innovation Diffusion Theory**

Rogers (1962) advanced Innovation Diffusion Theory to explain how new technologies spread through social systems. The theory classifies adopters into innovators, early adopters, the early majority, the late majority and laggards, each denoting a different risk posture and adoption timing (García-Avilés, 2020). It further identifies five attributes that determine the rate and success of adoption: relative advantage, compatibility with existing values and practices, complexity, trialability and observability of benefits. Applied to retail payments, these attributes explain why some supermarkets readily accept mobile money and card platforms while others adopt them reluctantly or only superficially.

Innovation Diffusion Theory serves as the anchor theory for this objective because it addresses both the timing and the depth of digital payment adoption and links these to strategic outcomes. In the Kenyan context, where M-Pesa disrupted the payment landscape well ahead of formal retail digitalisation, the theory permits classification of supermarkets by adopter category and explains why differing degrees of adoption produce differing revenue results.

### **2.1.2 Technology Acceptance Model**

Davis (1985) developed the Technology Acceptance Model, which holds that perceived usefulness and perceived ease of use jointly determine behavioural intention to adopt a technology and its eventual use. In the context of digital payment systems, perceived usefulness encompasses transaction speed, accuracy, security and the capacity to simplify business activity, while perceived ease of use covers interface simplicity, reduced training requirements and compatibility with existing business systems (Davis, 2021). The model also admits external variables including system design features, user characteristics and organisational factors that moderate both core constructs.

The model is relevant to this objective because it explains why adoption at the till does not automatically translate into deep organisational use. Where staff perceive digital payment platforms as useful and easy to operate, checkout throughput and error rates improve measurably (Riquelme & Rios, 2010). Venkatesh and Davis (2000) further demonstrated that perceived usefulness sustains continued use over time, which is the condition under which adoption becomes revenue-generating rather than merely available.

## **2.2 Empirical Review**

McKinsey and Company (2021) conducted a multi-country comparative industry analysis of digital payment adoption among retailers, using checkout speed, basket size, transaction value and revenue improvement as performance indicators. The study found that embedding digital payment systems in core business processes delivered average revenue increases of 15 to 25 per cent within eighteen months of implementation, attributed to reduced transaction friction, improved purchase completion rates and better access to real-time financial information. Retailers offering more payment methods captured more impulse purchases and higher customer retention. The study concluded that integration, rather than adoption alone, determines the magnitude of revenue gains.

Beck et al. (2021) surveyed African retail SMEs to assess the effect of digital payment adoption on operational continuity, liquidity and revenue during the COVID-19 pandemic. Using structured financial performance surveys and transaction data analysis, the researchers found that digital payment systems allowed more than 40 per cent of retail enterprises to continue transacting under mobility restrictions, preserving revenue. Their regression results

showed a significant positive association between digital transaction volume and monthly revenue growth. The authors concluded that digital payments function as drivers of revenue stability when built into the financial and operational cycles of SMEs.

Boateng et al. (2021) examined the effect of mobile payment integration on daily revenue performance among Ghanaian small retailers using a mixed-method survey and financial review of more than 200 SMEs. Structured questionnaires and transaction audits revealed daily sales increases of 18 to 32 per cent among firms that had integrated payment platforms with inventory and reconciliation systems. Thematic interviews indicated that integration minimised lost sales arising from customers lacking cash, while automated revenue reporting strengthened managerial control. Their findings emphasised that payment technology must be embedded in back-office functions rather than operated as a standalone till instrument.

Jepchumba and Simiyu (2021) studied 120 retail outlets in Nairobi using a descriptive survey design, focusing on accuracy of revenue capture, sales growth and customer spending. Their correlation analysis showed that incorporating M-Pesa and card systems into point-of-sale tools improved record-keeping accuracy for 89 per cent of respondents and raised customer satisfaction for 76 per cent, both of which positively influenced sales growth. They further found that electronic transaction records improved access to credit, enabling reinvestment in stock expansion that contributed to revenue outcomes.

Mue (2021) applied a case study methodology to small chain supermarkets in Kenya, comparing checkout transaction logs, reconciliation reports and revenue leakage indicators before and after digital payment adoption. The study reported a 12 to 18 per cent reduction in revenue leakage during peak shopping periods, attributed to the elimination of manual cash-handling errors and pilferage. Transaction times fell and customer flow improved, raising the number of transactions completed per hour. Managers reported stronger accountability because automated reconciliation surfaced discrepancies more quickly.

Tiony (2023) used a cross-sectional survey of Kenyan retail SMEs to identify the conditions under which digital payment adoption yields revenue gains. The study established that shallow integration, transaction costs of 2 to 4 per cent of transaction value and frequent system failures diminish the financial gains anticipated from digital payments. Partial or isolated platform use produced no statistically significant revenue improvement relative to non-adopters. The findings reinforce the proposition that depth of integration, rather than the presence of a payment platform, determines revenue effectiveness.

### **2.3 Research Gap**

The reviewed literature establishes that digital payment adoption is associated with improved revenue outcomes, but three gaps persist. First, most studies measure adoption as a binary condition, whether a platform is accepted or not, and therefore cannot distinguish between superficial availability at the till and genuine integration with business systems. Second, the evidence base is concentrated on either large corporate retailers or informal micro-enterprises, leaving formalised small chain supermarkets largely unexamined despite their distinctive multi-branch operating model. Third, few studies from the Kenyan context test the adoption-revenue relationship inferentially while simultaneously capturing the managerial reasoning behind adoption decisions. This study addresses these gaps by measuring platform breadth, integration depth and strategic intent among three small supermarket chains and by testing the resulting relationship with revenue performance through regression analysis triangulated with qualitative evidence.

### 3. Research Methodology

The study adopted a convergent parallel mixed-methods research design, in which quantitative and qualitative data are collected simultaneously, analysed separately and then merged during interpretation (Creswell & Plano Clark, 2021). The design suited the objective because quantitative data established the extent of adoption and its statistical relationship with revenue performance, while qualitative data explained the managerial reasoning, contextual constraints and strategic intent behind adoption decisions.

The target population comprised employees of six branches drawn from three small chain supermarkets, Magunas, Cleanshelf and Maathai, located across Nairobi and Kiambu Counties. The six branches represent approximately 10 per cent of an estimated 60 small chain supermarkets operating in the two counties. With an average of 30 to 50 employees per branch, the target employee population was 165 individuals comprising branch managers, finance and operations officers, cashiers and point-of-sale support staff. Applying Yamane's (1967) formula at a 95 per cent confidence level and a 0.05 margin of error yielded a sample of 117 respondents, allocated proportionally as 35 from Magunas, 43 from Cleanshelf and 39 from Maathai. A further 20 customers were purposively selected for qualitative interviews.

A multi-stage sampling approach combined stratification, purposive selection and simple random sampling. The employee population was first stratified by supermarket chain, with branches serving as sub-strata to ensure geographic and organisational representation. Managers, finance and operations officers and digital support staff were selected purposively as information-rich respondents with strategic oversight of payment systems and revenue tracking, while cashiers and support staff were randomly sampled within each branch to reduce selection bias.

Data were collected through structured questionnaires administered to employees, key informant interviews with branch managers and finance officers, and focus group discussions. A pilot study of 12 respondents, approximately 10.3 per cent of the main sample, was conducted at comparable branches excluded from the final study. Reliability was assessed using Cronbach's alpha, which returned a coefficient of 0.78 for the digital payment adoption scale and 0.79 for the overall instrument, both exceeding the 0.70 threshold recommended by Nunnally (1978). Content validity was established through expert review by two supervisors, and 92 per cent of pilot respondents confirmed the clarity and relevance of items.

Quantitative data were analysed using SPSS version 28. Descriptive statistics summarised adoption patterns, integration levels and revenue indicators, while hierarchical multiple regression tested the hypothesis. Diagnostic tests for normality (Shapiro-Wilk), multicollinearity (variance inflation factor) and homoscedasticity (Breusch-Pagan and White tests) preceded the regression. Qualitative data were analysed thematically using Braun and Clarke's (2006) six-phase framework, and the two datasets were integrated through triangulation. Ethical approval was obtained from the National Commission for Science, Technology and Innovation, written informed consent was secured from all participants, responses were coded and aggregated to preserve anonymity, and the study complied with the Kenya Data Protection Act (2021).

## 4. Results and Findings

### 4.1 Response Rate

Of the 117 targeted employee respondents, 103 valid responses were obtained, representing a response rate of 88 per cent. A further 17 of the 20 targeted customers participated in qualitative interviews, an 85 per cent response rate. Table 1 presents the distribution of employee responses by category.

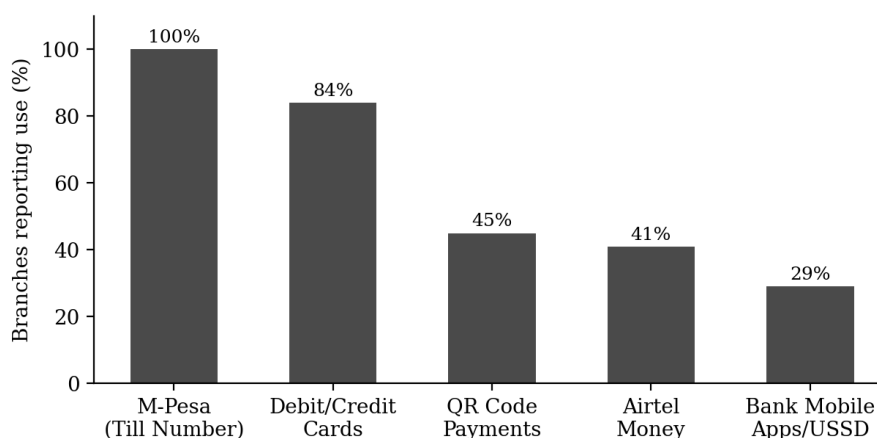
**Table 1: Employee Response Distribution**

| Respondent Category      | Targeted | Responded | Response Rate (%) |
|--------------------------|----------|-----------|-------------------|
| Branch Managers          | 10       | 9         | 90                |
| Finance/Operations Staff | 15       | 14        | 93                |
| Cashiers/Frontline Staff | 60       | 53        | 88                |
| POS/System Support Staff | 12       | 10        | 83                |
| Total                    | 117      | 103       | 88                |

Response rates above 80 per cent across all categories affirm the adequacy of the data for statistical analysis. The composition ensured that strategic, financial and transactional perspectives on adoption were all represented, with cashiers forming the largest group by virtue of their daily interaction with the payment platforms.

### 4.2 Types of Digital Payment Systems Adopted

Respondents across all branches reported that multiple digital payment options were available to customers, including mobile money platforms, bank-linked point-of-sale terminals, QR code scanners and, to a lesser extent, mobile banking and USSD channels. Figure 1 presents the proportion of branches reporting use of each platform.



**Figure 1: Digital Payment Platforms Adopted Across Branches**

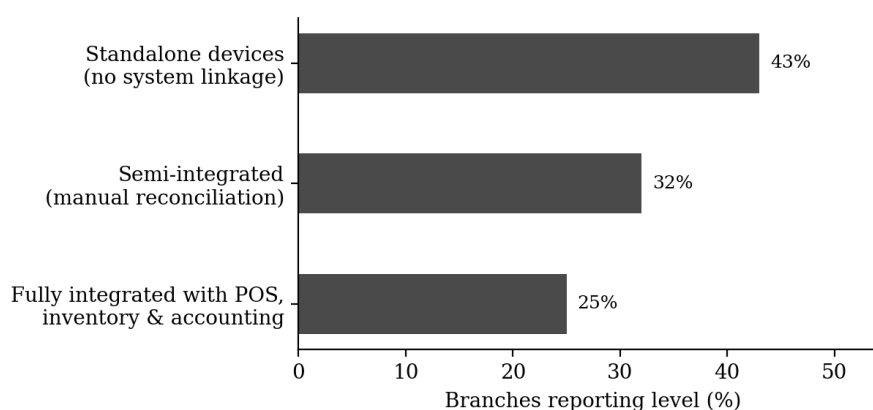
M-Pesa emerged as the universally accepted digital payment method, adopted by all sampled branches, confirming its dominance in Kenya's digital finance ecosystem. Card payments were reported by 84 per cent of branches, with the highest concentration in urban locations where customer expectations for Visa and MasterCard acceptance are greater. Newer channels remained comparatively marginal, with QR code payments at 45 per cent, Airtel

Money at 41 per cent and bank mobile applications or USSD at 29 per cent. Every branch surveyed had adopted at least two digital payment platforms.

Qualitative evidence indicated that platform availability does not equate to platform use. As one cashier at Magunas, Kahawa Wendani, observed, customers are encouraged to use M-Pesa but in some areas continue to prefer cash unless the amount is large. This suggests that while the technological infrastructure exists, customer preference and awareness moderate the level of usage of each method.

#### 4.3 Depth of Integration with Business Operations

While most branches offered multiple digital payment options at the checkout counter, the depth of system integration varied substantially. Integration was measured as the extent to which digital payment systems were linked to internal processes including inventory management, accounting and revenue reporting. Figure 2 presents the distribution of integration levels.



**Figure 2: Level of Integration of Digital Payment Systems with Business Operations**

Only 25 per cent of branches operated fully integrated systems in which stock records and revenue reports updated automatically when a digital payment was completed. A further 32 per cent were semi-integrated, reconciling payments manually at the end of each trading day, while 43 per cent operated standalone payment devices with no linkage to other business systems. Partial integration creates operational inefficiency and limits the ability of managers to use real-time transaction data for decision-making, forecasting or revenue analysis. A finance officer at Cleanshelf, Thika, confirmed that M-Pesa and card transactions were processed separately and captured manually into the accounting system at day end.

#### 4.4 Strategic Intent Behind Adoption

Key informant interviews with branch managers and operations officers examined whether digital payment systems were adopted as part of a deliberate business strategy or as a reaction to external pressure. Sixty-seven per cent of respondents indicated that adoption was a response to customer preference and competitive pressure rather than a forward-looking strategic decision, representing reactive adoption. The remaining 33 per cent, concentrated at Maathai Supermarket, described deliberate integration of digital payments into business planning, including efforts to link payment methods to customer loyalty programmes and stock planning. A branch manager at Maathai in Nairobi described moving beyond simply accepting M-Pesa toward connecting loyalty points to digital transactions in order to retain repeat customers. This contrast between reactive and proactive adoption has direct implications for the revenue value that adoption ultimately delivers.

#### 4.5 Adoption and Revenue Indicators

Respondents reported measurable changes in transaction and revenue indicators following the adoption of digital payment systems, attributed to improved checkout speed, reduced cash-handling errors and greater customer satisfaction with digital options. Table 2 summarises the reported pre-adoption and post-adoption averages.

**Table 2: Transaction Volume and Revenue Indicators Before and After Adoption**

| Indicator                       | Pre-Adoption Average | Post-Adoption Average | Growth (%) |
|---------------------------------|----------------------|-----------------------|------------|
| Daily transactions              | 410                  | 560                   | +36.6      |
| Monthly revenue (KES)           | 1.12 million         | 1.48 million          | +32.1      |
| Average transaction value (KES) | 450                  | 510                   | +13.3      |
| Customer repeat rate            | 22%                  | 38%                   | +72.7      |

Daily transactions rose by 36.6 per cent and monthly revenue by 32.1 per cent following adoption, while the average value per transaction increased by 13.3 per cent. The rise in the customer repeat rate from 22 to 38 per cent points to improved retention, a key determinant of sustainable revenue growth. Payment method comparisons reinforced this pattern: the average transaction size was KES 550 for card payments and KES 520 for M-Pesa, against KES 430 for cash, suggesting that customers paying digitally spend more per visit. A cashier at Cleanshelf, Ruiru, explained that customers using mobile money tend to round off their spending and do not mind adding an item to reach a full amount.

Adoption also improved access to formal credit. Forty-two per cent of finance officers reported using digital transaction histories to support loan applications, with lenders favouring businesses holding digital records over cash-only operations. A finance officer at Maathai noted that M-Pesa records supported rapid approval of a short-term loan for December stock because transaction volumes were verifiable. This indicates that adoption functions as an entry point into the formal financial ecosystem, unlocking working capital that can be reinvested in the business.

#### 4.6 Diagnostic Tests

Diagnostic tests were conducted to confirm that the data satisfied the assumptions of multiple regression. The Shapiro-Wilk test returned a statistic of 0.962 ( $p = 0.089$ ) for adoption of digital payments and 0.968 ( $p = 0.112$ ) for revenue performance, with all variables returning  $p$ -values above 0.05 and statistics between 0.958 and 0.974, confirming normality. Multicollinearity was not a concern: the variance inflation factor for adoption of digital payments was 1.488 with a tolerance of 0.672, and all predictors returned variance inflation factors between 1.422 and 1.698, well below the threshold of 5.0. Homoscedasticity was confirmed by the Breusch-Pagan test ( $\chi^2 = 2.847$ ,  $p = 0.584$ ) and the White test ( $\chi^2 = 18.432$ ,  $p = 0.298$ ), both of which failed to reject the null hypothesis of constant error variance. The Durbin-Watson statistic of 1.987 indicated no significant autocorrelation of residuals.

#### 4.7 Regression Analysis

Hierarchical multiple regression was conducted in two stages. The direct effects model regressed revenue performance on adoption of digital payments, customer experience and operational efficiency. The model returned  $R = 0.821$  and  $R^2 = 0.674$ , indicating that 67.4 per

cent of the variance in revenue performance was explained by the three predictors, with an adjusted  $R^2$  of 0.664. Analysis of variance confirmed model significance ( $F = 68.234$ ,  $p < 0.05$ ). Within this model, adoption of digital payments recorded a standardised coefficient of 0.342 ( $B = 0.394$ ,  $SE = 0.089$ ,  $t = 4.427$ ,  $p < 0.05$ ).

The second model introduced strategic drivers and their interaction terms. Table 3 presents the coefficients for the full model, from which the hypothesis for this objective was tested.

**Table 3: Regression Coefficients for the Moderated Model**

| Predictor                           | B     | Std. Error | Beta ( $\beta$ ) | t     | Sig.  |
|-------------------------------------|-------|------------|------------------|-------|-------|
| (Constant)                          | 0.623 | 0.287      | –                | 2.171 | 0.032 |
| Adoption of digital payments        | 0.312 | 0.084      | 0.271            | 3.714 | 0.000 |
| Customer experience                 | 0.378 | 0.091      | 0.320            | 4.154 | 0.000 |
| Operational efficiency              | 0.289 | 0.082      | 0.268            | 3.524 | 0.001 |
| Strategic drivers                   | 0.247 | 0.076      | 0.231            | 3.250 | 0.002 |
| Adoption $\times$ Strategic drivers | 0.186 | 0.058      | 0.194            | 3.207 | 0.002 |

Adoption of digital payments retained a positive and statistically significant relationship with revenue performance in the presence of the interaction terms ( $\beta = 0.271$ ,  $t = 3.714$ ,  $p < 0.05$ ). The interaction between adoption and strategic drivers was also significant ( $\beta = 0.194$ ,  $p = 0.002$ ), indicating that the revenue return on adoption is amplified where management support, infrastructure reliability and competitive pressure are present. The regression equation for the adoption effect can be expressed as an expected increase of 0.312 units in revenue performance for every one-unit increase in adoption, holding other predictors constant.

#### 4.8 Hypothesis Testing

The null hypothesis stated that there is no significant influence of the adoption of digital payments on revenue performance in small retail chain supermarkets in Nairobi and Kiambu Counties. Table 4 summarises the test result.

**Table 4: Summary of Hypothesis Testing**

| Hypothesis                                                                                          | Beta ( $\beta$ ) | t-value | p-value | Decision |
|-----------------------------------------------------------------------------------------------------|------------------|---------|---------|----------|
| $H_{01}$ : There is no significant influence of adoption of digital payments on revenue performance | 0.271            | 3.714   | 0.000   | Rejected |

The null hypothesis was rejected at the 95 per cent confidence level. Adoption of digital payments demonstrated a significant positive relationship with revenue performance, supporting the alternative hypothesis that increased adoption and integration of digital payment systems enhances revenue performance in small chain supermarkets.

#### 4.9 Triangulation of Findings

The quantitative and qualitative datasets converged on the central relationship. The regression result establishing a significant positive influence of adoption on revenue performance was corroborated by the reported growth in daily transactions and monthly

revenue, and by managerial accounts of increased customer confidence and spending. The datasets also diverged productively on the question of magnitude. While adoption was universal, only a quarter of branches had integrated payment platforms with back-office systems, and two-thirds described adoption as reactive. This qualitative finding explains why the revenue return on adoption, though significant, was smaller than that of customer experience within the same model, and why the interaction with strategic drivers proved significant. Adoption establishes the necessary condition for revenue improvement, but depth of integration and strategic orientation determine the extent of the gain realised.

## 5. Discussion of Findings

The study established that adoption of digital payments has a statistically significant positive influence on revenue performance among small retail chain supermarkets in Nairobi and Kiambu Counties. Branches that actively promoted multiple digital payment options reported higher sales throughput, greater accuracy in revenue capture and fewer cash-related losses. These outcomes indicate that adoption supports both stronger financial performance and improved business control.

The findings are consistent with McKinsey and Company (2021), which reported revenue increases of 15 to 25 per cent among retailers embedding digital payments in core business processes, and with Beck et al. (2021), whose regression results linked digital transaction volume to monthly revenue growth among African retail SMEs. The 36.6 per cent growth in daily transactions and 32.1 per cent growth in monthly revenue recorded in this study sit within the range reported by Boateng et al. (2021) for Ghanaian retailers, whose fully integrated firms recorded daily sales increases of 18 to 32 per cent. The improvement in revenue capture accuracy corroborates Jephumba and Simiyu (2021), who found that 89 per cent of Nairobi retail outlets reported better record keeping following the incorporation of M-Pesa and card systems into point-of-sale tools.

The results also confirm and extend Tiony (2023), who argued that partial or isolated platform use fails to deliver statistically significant revenue gains. This study provides direct evidence for that proposition within the small chain supermarket segment. Adoption breadth was near-complete, with every branch running at least two platforms and M-Pesa accepted universally, yet only 25 per cent of branches had integrated those platforms with inventory and accounting systems and 43 per cent operated them as standalone devices. The coexistence of universal adoption with shallow integration accounts for the gap between the substantial revenue potential documented in the literature and the moderate coefficient observed here.

Interpreted through Innovation Diffusion Theory, the pattern indicates that the sampled supermarkets have largely completed the diffusion of the innovation at the transactional level, where relative advantage and observability are high and complexity is low, but have not progressed to the organisational reconfiguration where the greater share of relative advantage resides. The finding that 67 per cent of managers adopted reactively, in response to customer preference and competitor behaviour, places most branches in the late majority category, adopting because the technology has become a market standard rather than because they anticipate a strategic return. The Technology Acceptance Model further explains this stalling. Perceived ease of use is high at the checkout counter, where a till number requires little training, but perceived usefulness of full system integration remains low among managers who have not observed the reporting and forecasting benefits, and this depresses the intention to invest in deeper implementation.

The finding that digital transaction records improved access to credit for 42 per cent of finance officers adds a mechanism that is under-reported in the Kenyan literature on small chain retail. It suggests that adoption produces revenue effects through at least two distinct pathways: a direct transactional pathway operating through faster checkout, higher basket values and improved retention, and an indirect financial pathway operating through verifiable transaction histories that unlock working capital for stock expansion. The latter aligns with Mue (2021) and with the broader argument advanced by Beck et al. (2021) that payment digitalisation strengthens the financial position of SMEs beyond the till.

## **6. Conclusion**

The study concludes that the adoption of digital payments significantly improves revenue performance in small retail chain supermarkets in Nairobi and Kiambu Counties. Supermarkets offering multiple digital payment platforms recorded higher sales, increased transaction volumes, larger average basket values and improved accountability in revenue capture, and the null hypothesis was rejected on the strength of a significant positive regression coefficient.

The study further concludes that the revenue value of adoption is conditional rather than automatic. Adoption breadth in this segment has effectively saturated, and additional revenue gains will not come from accepting more payment platforms at the till. They will come from depth, that is, from linking the platforms already in use to inventory, accounting and customer loyalty systems, and from shifting the managerial framing of digital payments from a reactive competitive necessity to a deliberate revenue strategy. Where digital payments are embraced as part of a business strategy rather than as a defensive response, financial gains are markedly more evident. Adoption of digital payments is therefore an important strategic driver of revenue performance in Kenya's competitive small chain retail environment, provided it is pursued to the point of integration.

## **7. Recommendations**

### **7.1 Recommendations for Retail SME Owners and Managers**

- i. Integrate rather than merely adopt. Supermarket chains should move beyond surface-level acceptance of payment platforms and invest in linking them to accounting software, inventory management tools and customer loyalty platforms, since the evidence indicates that revenue gains accrue to integration depth rather than platform count.
- ii. Prioritise continuous staff capacity building. Cashiers, supervisors and support staff should receive ongoing training on payment system operation and exception handling in order to prevent downtime, minimise reconciliation errors and sustain customer satisfaction at the checkout.
- iii. Use transaction data strategically. Managers should exploit the data generated by digital payments to monitor sales trends, identify high-performing product lines, plan promotions and support credit applications, converting payment records into a managerial asset.

### **7.2 Recommendations for Fintech Providers and Payment Service Operators**

- i. Design SME-appropriate integration tools. Providers should offer affordable and simple interfaces that connect payment platforms to the point-of-sale and

accounting systems typically used by small chains, and should reduce transaction fees that currently consume 2 to 4 per cent of transaction value.

- ii. Improve system reliability. Uptime, responsive user support and offline transaction capability should be strengthened to prevent revenue loss during network failures, which respondents identified as a recurrent constraint.
- iii. Partner with retailers on training. Providers should collaborate with supermarket chains to deliver onboarding sessions, training materials and after-sales support that promote sustained and deeper system utilisation.

### **7.3 Recommendations for Government and Policy Makers**

- i. Subsidise digital infrastructure for retail SMEs. Tax incentives or targeted grants should be extended to small chains investing in payment system integration, particularly in peri-urban and underserved areas with weaker connectivity.
- ii. Regulate transaction costs. Policies capping or reducing transaction fees on digital platforms, especially for small-value transactions, would improve the net revenue return on adoption and encourage deeper uptake.
- iii. Support digital literacy programmes. Government should partner with industry actors and academic institutions to deliver digital literacy initiatives targeting SME employees and managers, addressing the capability constraints that limit integration.

### **7.4 Areas for Further Research**

- i. Longitudinal studies tracking revenue performance over two to five years before and after adoption would provide stronger causal evidence on whether digital payments yield sustained financial growth.
- ii. Comparative studies across SME sectors including hospitality, agribusiness and manufacturing would establish how contextual differences shape the adoption-revenue relationship.
- iii. A focused cost-benefit analysis of digital payment platforms, covering transaction fees, maintenance and integration costs, would help SMEs and policy makers determine the economic thresholds at which deeper integration becomes viable.

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