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Original Article

Assessing the Impact of Mobile Money Adoption (M-Pesa) on the Growth and Sustainability of Small and Medium Enterprises in Nakuru Town, Kenya: A Positive Economics Perspective

[1]Dr. Nathan Gitonga, BLA, PGDJM, MA, (Econ) PhD (Econ)
[1]University of Eastern Africa, Baraton.

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Abstract: *Using a positive economics perspective, this paper tends to assess the impact that the adoption of M-Pesa mobile money has had on the growth and sustainability of Small and Medium Enterprises in Nakuru Town, Kenya. Based on survey data, focus group discussions, and secondary literature, the study assesses the impact of integrating M-Pesa into daily operations on SMEs in terms of increased sales revenue, profit margins, customer base, and overall longevity. The paper adopts a mixed-methods, cross-sectional research design that combines quantitative and qualitative approaches. The findings show that M-Pesa adoption significantly enhances SME growth by reducing transaction costs, increasing the efficiency of transactions, and facilitating wider market reach. SMEs that adopt M-Pesa also indicate better cash flow management and increased financial inclusion. However, despite the positive impact, several challenges persist, including high transaction fees, network unreliability at times, discrimination at agent points, and low e-literacy. The paper concludes by recommending policies that will encourage lower transaction costs, better interoperability among the mobile money platforms, and selective training for SME owners in using mobile money to achieve sustainable growth.*

Keywords: *M-Pesa, Mobile Money, Positive Economics, SMEs, Nakuru Town, Financial Inclusion, Sustainability, Growth, Transaction Efficiency.*

I. INTRODUCTION

A) Background of the Study

Mobile money—broadly defined as digital financial services delivered over mobile phone networks—has become widespread in many developing countries, especially across sub-Saharan Africa (Jack & Suri, 2011). In Kenya, M-Pesa, launched by Safaricom in 2007, rapidly emerged as a game changer in the financial sector, providing a convenient mechanism for depositing, transferring, and withdrawing cash without relying on conventional banking channels (Safaricom, 2019). This innovation has significantly influenced how Small and Medium Enterprises (SMEs) conduct business transactions, often at lower cost and with heightened efficiency (Suri, 2017).

Nakuru Town, situated in the Rift Valley of Kenya, has seen increased mobile phone usage and, consequently, digital transformation; hence, it is a very interesting place to study the effect of M-Pesa on SMEs. Empirical studies focusing on how long-term SME growth and sustainability influence the adoption of M-Pesa in Nakuru Town are scant. This paper seeks to fill this knowledge gap by establishing whether and how M-Pesa influences the performance of local SMEs, basing the focus on sales revenue, profit margins, and resilience.

B) Research Problem and Objectives

a. Research Problem

SMEs in Kenya are a vital pillar in its economy, providing ample employment and contributing significantly to the Gross Domestic Product (Beck, Pamuk, Uras, & Ramrattan, 2018). However, SMEs in Nakuru Town are characterized by limited access to finance, high operational costs, and restricted markets. M-Pesa can be one financial substitute with considerable roles but whose impact is not well comprehended on the competitiveness, profitability, and survival of SMEs within the Nakuru perspective.

b. Research Objectives

1. To establish the relationship between adopting M-Pesa and SME growth—To ascertain the impact of using M-Pesa on variables such as sales turnover and employment.

2. To establish how M-Pesa has influenced the sustainability of the SME—To review the change in profitability, in addition to the business continuity, consequent upon the introduction of M-Pesa.
3. To identify challenges and opportunities linked to the use of M-Pesa by SMEs—Identify barriers (e.g., costs and technological limitations, among others) and drivers, such as efficiency in improved transactions, which are beneficial to a better usage of M-Pesa.
4. To develop policy and managerial recommendations—To provide fact-based recommendations for policymakers, providers of financial services, and entrepreneurs on creating an enabling environment that will help take full advantage of mobile money.

C) Significance of the Study

From a positive economics perspective, this research develops our knowledge of "if-then" hypotheses related to technology-driven financial solutions and SME development, as Beck et al. (2018) identified. In practical terms, it can guide policymakers and mobile money operators to adopt training and fee regulation interventions to enhance SME competitiveness and resilience. The findings are also a good starting point for further comparative studies within Kenya and other developing economies.

D) Scope and Limitations

The study focuses on SMEs operating for at least one year and having fewer than 250 workers in Nakuru Town. Given the nature of such a setting, generalization, especially to rural or more dispersed settings, should be carefully considered (World Bank, 2020). Since the research design is cross-sectional, conclusive statements about causation cannot be made, and self-reported data may be biased. Triangulation with qualitative data partly mitigates these limitations, but future longitudinal or quasi-experimental studies are recommended.

E) Key Concepts and their Definitions

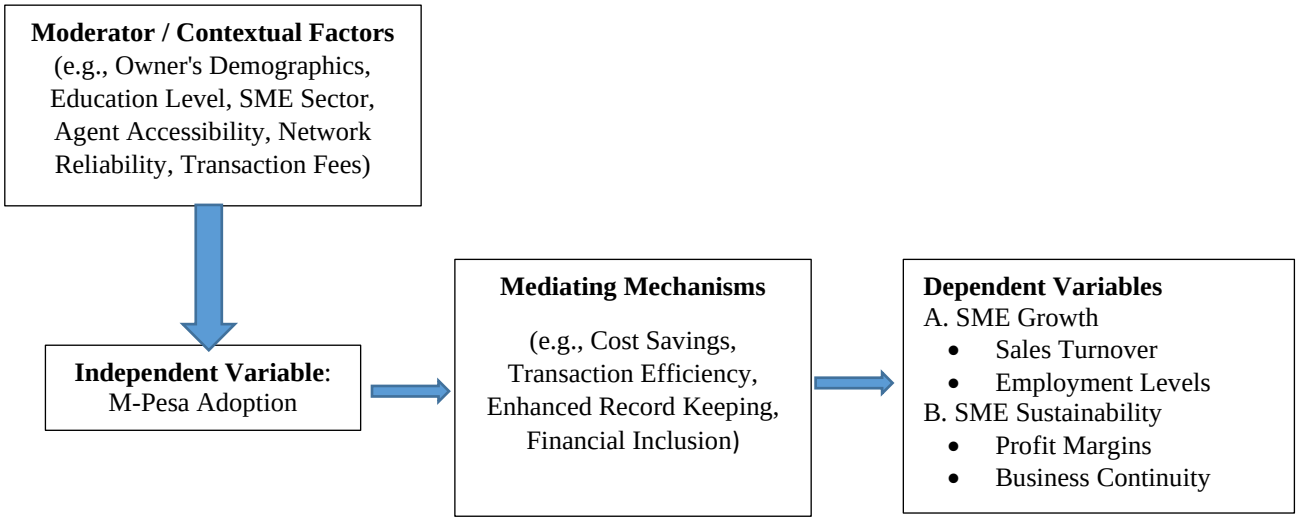
- SME Growth: Measured by increased sales turnover, number of employees, and expansion into more markets.
- SME Sustainability: The extent of profitability, operational durability, and resistance to financial crisis.
- Financial Inclusion: The extent to which SMEs access various financial services and use mobile money, including
- Transaction Efficiency: How efficient M-Pesa is compared to other modes of payments in terms of time, cost, and convenience.

II. LITERATURE REVIEW

A) Conceptual Framework

M-Pesa enables users to deposit and withdraw cash and transfer money domestically and internationally using mobile devices (Jack & Suri, 2011; Safaricom, 2019). For SMEs, adoption often hinges on potential gains in convenience, cost reduction, and customer satisfaction (Chirchir & Silikhe Simiyu, 2016). However, digital illiteracy, inadequate agent networks, and perceived risk can hinder adoption (Kalugendo John, 2018). A conceptual model (figure 1) hypothesizes that M-Pesa usage positively correlates with SMEs' growth and sustainability, moderated by factors like owner demographics, firm size, and market environment.

Figure 1: Conceptual Framework



The conceptual framework, therefore, identifies the logical pathway in which M-Pesa adoption—a dependent variable—can cause SME growth and sustainability through certain mediating mechanisms: cost savings, speed of transactions, improvement in record-keeping, and financial inclusion. These articulate the channels through which digital financial services reduce operational overhead, accelerate customer transactions, and provide a traceable financial history that might improve access to credit. Yet, the framework also underlines how such moderator or contextual factors—like owner education level, enterprise size, and local agent/network reliability—determine the final effectiveness of the integration of M-Pesa. For example, high transaction fees or low agent float will weaken the positive effects of adoption, while sufficient financial literacy will enhance those effects. As a result, all these sales turnover, employment levels, profit margins, and business continuity improvements will depend on the intervening variables relating to SMEs. Summing up, successful M-Pesa adoption cannot be a direct technology availability factor but is determined by supportive conditions in socio-economic factors.

B) Mobile Money Adoption in Kenya

Kenya's reputation as a global leader in mobile money stems largely from M-Pesa's rapid expansion since 2007 (Jack & Suri, 2011). Over half of Kenyan adults regularly use M-Pesa, and about 83% of SMEs have incorporated some form of mobile money (GSMA, 2019; Safaricom, 2019). These adoption rates are notwithstanding, and the actual adoption may differ in medium-sized urban areas like Nakuru due to the local economic structures, the presence of mobile agents, and competition with traditional banking. (World Bank, 2020).

C) Impact of Mobile Money on SMEs

The existing literature indicates that mobile money usage enhances SME growth by reducing transaction costs, easing record-keeping, and increasing market reach (Chirchir & Silikhe Simiyu, 2016; Ntabo Otiso, Nasimiyu Simiyu, & Wepukhulu, 2013). A study by Kalugendo John (2018) in neighboring Tanzania revealed that microenterprises using mobile money services enjoyed increased profits and expanded their customer base. However, not all benefits are across the board, as smaller or informal SMEs may find the transaction fees unaffordable or experience erratic network services.

D) Theoretical Underpinnings

1. Positive Economics Theory Concerns empirically verifiable cause-and-effect statements (Beck et al. (2018). Applied to this study, if SMEs adopt M-Pesa, measurable improvements in sales or profit are expected, assuming that external disturbances are held at a constant.
2. Financial Inclusion Theory Proposes that wider financial access can spur economic advancement by alleviating credit and savings barriers (Suri, 2017). M-Pesa facilitates financial inclusion among SMEs lacking bank accounts, potentially unlocking new growth opportunities.

III. METHODOLOGY

A) Research Design

The paper adopted an integrated mixed-methods cross-sectional design studying M-Pesa adoption against SME performance in Nakuru Town. Quantitative data allow a broad look at levels of adoption and selected performance measures. At the same time, qualitative input is obtained through focus groups and interviews to better appreciate the challenges and enablers of using M-Pesa.

B) Methods of Data Collection

1. Quantitative Data
   - Structured Questionnaires: The sample size required was 306 SMEs, derived using a simple random sampling method at 95% confidence. The questionnaires captured demographic information, M-Pesa usage frequency, transaction costs, sales revenue, and challenges encountered. A pilot test with 20 SMEs ensured the questions were clear and reliable.
2. Qualitative Data:
   - FGDs and In-depth Interviews: With 20 SME owners, this will help get the finer details of perceptions on how M-Pesa features in their daily activities: the accessibility of agents, ease of use, and digital literacy experiences, among other issues.
   - Document Review: Secondary data from Safaricom reports and policy documents complemented the primary findings to complete the overview.

C) Sampling Techniques

- Target Population: 1,389 registered SMEs in Nakuru Town, each employing fewer than 250 employees and operating for at least one year.
- Simple Random Sampling: Ensured each SME had an equal chance of selection.
- Final Sample Size: 306 SMEs participated in the survey, and 20 SMEs engaged in qualitative FGDs/interviews. Saturation was achieved when no new themes emerged.

D) Data Analysis

- Descriptive Statistics: Frequencies, means, and standard deviations were generated to summarize sales turnover, M-Pesa transaction frequency, and perceived benefits.
- Inferential Statistics: Multiple linear and logistic regression models analyzed how M-Pesa usage (independent variable) influenced SME growth and sustainability (dependent variables). Control variables included firm size, owner's age, and sector type.
- Qualitative Analysis: Thematic coding revealed emergent themes on transaction fee concerns, network downtime, digital literacy gaps, and perceived benefits, including new market reach. Representative quotations are used to illustrate key qualitative insights.

IV. EMPIRICAL RESULTS

A) Profile of SMEs in Nakuru Town

The demographic profile for the 306 SMEs that responded, summarized in Table 1 below, represented capturing trade, hospitality, manufacturing, agriculture, and services sectors.

Table 1: Demographic Characteristics of SME Owners in Nakuru Town (N = 306)

Variable	Categories	Frequency	Percentage (%)
Gender of Owner/Manager	Male	185	60.5
	Female	121	39.5
Age of Owner/Manager	18–29	63	20.6
	30–44	151	49.3
	≥ 45	92	30.1
Education Level	Primary	44	14.4
	Secondary	93	30.4
	College/University	152	49.7
	Postgraduate	17	5.5
Duration in Business	1–3 years	144	47.1
	4–6 years	103	33.7
	≥ 7 years	59	19.3

A large fraction of the SME owners are between 30 and 44 years old and hold college/university graduation degrees. About 47%, however, are relatively fresh enterprises operating from 1 to 3 years, signaling a somewhat younger and dynamic population of SMEs.

B) M-Pesa Adoption Rates

Of the respondent SMEs, approximately 82% reported using M-Pesa for one or more major business purposes, such as receiving payments and paying suppliers. The table on the following pages describes the main features of M-Pesa usage patterns.

Table 2: M-Pesa Usage Patterns Among SMEs (N = 306)

Usage Parameter	Categories	Frequency	Percentage (%)
M-Pesa Adoption	User	251	82.0
	Non-User	55	18.0
Frequency of Transactions (Among M-Pesa users, n = 251)	1–5 per week	85	33.9
	6–10 per week	96	38.3
	More than 10 per week	70	27.9
Primary Reason for Adoption (Multiple responses possible)	Reduced Transaction Time	104	41.4
	Customer Demand	89	35.5
	Improved Record-Keeping	74	29.5
	Lower Costs vs. Traditional Methods	58	23.1

The most important reasons for the adoption of M-Pesa were a reduction in transaction time and customer demand. About 66% of the M-Pesa adopters transact more than five times a week, showing frequent use integrated into the business's daily running.

C) Financial Inclusion Impact

Qualitative interviews suggest that M-Pesa fosters greater financial inclusion by allowing smaller firms to receive and send payments without needing formal bank accounts (GSMA, 2019). Several owners noted that they began building a financial track record through M-Pesa statements, which improved their credibility when seeking microloans, although broader financing remains a challenge.

D) Growth and Sustainability Indicators

Sales turnover, profit margins, and business continuity were used for the growth and sustainability of a business. Table 3 compares selected key performance indicators between adopters and non-adopters of M-Pesa.

Table 3: Comparison of Key Performance Metrics: M-Pesa Adopters vs. Non-Adopters

Indicator	M-Pesa Adopters (n = 251)	Non-Adopters (n = 55)
Average Monthly Sales (KSh)	190,000	130,000
Average Monthly Profit (KSh)	38,000	25,000
Employees (Mean)	4.1	3.0
Average Monthly Transactions	35	—

On average, M-Pesa adopters demonstrate higher monthly sales of KSh 190,000 and a profit of KSh 38,000 than nonadoptees. Additionally, the firms using M-Pesa tend to be slightly more employment-intensive, suggesting that mobile money use might be related to modest growth in employment.

V. DISCUSSION AND ANALYSIS

A) Key Findings

The findings confirm earlier studies by Chirchir & Silikhe Simiyu, 2016; and Ntabo Otiso et al., 2013, that mobile money adoption is positively related to improved business performance, especially with regard to transaction efficiency, profitability, and wider market exposure. For most Nakuru Town SMEs, M-Pesa reduces cash handling and eliminates the costs of going to banking halls to transact business, thus saving time to focus on core business activities.

B) Interpretation of Results

Objective 1: M-Pesa Adoption and SME Growth

- The positive association between M-Pesa usage and higher sales turnover is significant ($p < .01$), suggesting that digital transactions boost operational efficiency. However, older enterprises and those with more complex ownership structures, such as partnerships, reported smaller incremental benefits, highlighting how internal factors may moderate M-Pesa's impact.

Objective 2: M-Pesa Adoption and SME Sustainability

- M-Pesa adopters are more likely to operate longer. Logistic regression analysis, which is not presented, shows that the use of M-Pesa significantly predicts SME continuity, with an $Exp(B) \approx 3.2$, $p < .05$. However, a lack of training in account management and digital literacy could reduce the potential for sustainability with the integration of M-Pesa into their operations.

Objective 3: Challenges and Opportunities

- Transaction Charges: Most SMEs consider the charges for moderate-to-high-value transactions to be at an affordable level but consider these to be a little expensive for low-value or frequent microtransactions.
- Network Reliability: Periodic downtimes or inadequately managed agent float results in disrupted business, particularly during peak sales seasons.
- Discrimination at Agent Points: Various women owners face biased treatment or waiting, indicating closer monitoring and training of agents are required.
- Growth Opportunities: Facilities such as Lipa na M-Pesa introduce new channels for customer acquisition beyond the usual local markets.

Objective 4: Policy and Managerial Recommendations

- The review emphasizes that one should follow a structured approach in regulating fees, training agents, and ensuring effective digital literacy programs. Addressing these areas could make the benefits reduce costs, improve record-keeping, and wider reach more inclusive for a greater number of SMEs.

C) Comparison to Previous Studies

These results agree with findings in neighboring regions, such as Bungoma County and parts of Tanzania, where mobile money adoption has stimulated revenue and profit growth (Kalugendo John, 2018; Ntabo Otiso et al., 2013). However, in the local context, Nakuru Town's relatively higher urbanization and agent network present a more pronounced increase in adoption rates. Meanwhile, recurring challenges, such as transaction charges and lack of further finance access, continue to echo the structural obstacles for SMEs across the East African region (GSMA, 2019; World Bank, 2020).

D) Policy Implications

1. Transaction Fee Tiers: Regulators may want to consider tiered fees for low-value transactions to alleviate the burden on micro-SMEs (Beck et al., 2018).

2. Improved Agent Supervision: Supervisory mechanisms could help reduce discriminatory practices and maintain float levels consistently.
3. More Interoperability: Incentives for interoperability between platforms could reduce market fragmentation and help SMEs access a wide customer base.
4. Capacity Building: In this regard, local business associations may be engaged to provide training on digital literacy and financial management to ensure full utilization of the M-Pesa features by SMEs.

VI. CONCLUSION AND RECOMMENDATIONS

A) Summary of Findings

The study finds that M-Pesa adoption positively relates to increased sales revenues, higher profit margins, and greater employment growth among SMEs in Nakuru Town, Situated in a positive economics framework. Digital transactions enable efficiency in daily operations, customer convenience, and more efficient records. However, transaction costs, inconsistent support by agents, and limited levels of digital literacy partly hinder fully realizing the benefits of adopting M-Pesa.

B) Policy Recommendations

1. Regulate Transaction Fees
   - Introduce a multi-tiered fee system that cushions small-volume SMEs from exorbitant charges.
2. Improve Training and Digital Literacy
   - The government, Safaricom, and SME associations can jointly undertake programs to improve account management skills and reduce fraud vulnerability among operators.
3. Network Reliability and Improvement of Infrastructure
   - Extend 4G coverage and agent outlets in under-served neighborhoods to ensure seamless M-Pesa transactions.
4. Promote Interoperability
   - Foster policies enabling SMEs to conduct transactions across various mobile money platforms, reducing dependence on any single operator.

C) Areas for Future Research

1. Longitudinal or Panel Studies: This would track SMEs over time and could more definitely establish causality and the impact of M-Pesa on long-term sustainability.
2. Sectoral Analysis: Analyze the difference in the usage of M-Pesa between industries—for example, hospitality versus manufacturing—to pinpoint sector-specific drivers.
3. Urban-Rural Comparisons: Compare SME experiences in Nakuru Town with those in the surrounding rural sub-counties to uncover infrastructural or cultural bottlenecks.
4. Linkage to Other Digital Financial Services: Discuss how linkages of M-Pesa with credit, savings, or insurance products could further expand SME growth trajectories.

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