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Abstract

Micro and small enterprises (MSEs) constitute Kenya's economic backbone yet face persistent fragility due to limited access to affordable financial services. Mobile banking innovation, which enables financial transactions via mobile devices without visiting bank branches, has been proposed as a practical remedy to these structural challenges. However, existing Kenyan studies have concentrated on urban and inland counties, and frequently conflate mobile banking with broader mobile money services. This study examined the effect of mobile banking innovation on MSE performance in Kwale County, a semi-rural coastal region with Kenya's lowest small business survival rate and comparatively weak digital financial infrastructure. Guided by positivist philosophy and an explanatory cross-sectional design, the study tested the null hypothesis that mobile banking innovation has no significant effect on MSE performance. Data was collected from 401 MSE operators using structured questionnaires. Results revealed a strong positive and statistically significant association between mobile banking innovation and MSE performance ($B = .801$, $\beta = .853$, $p < .001$), with mobile banking accounting for 72.7% of the variance in performance ($R^2 = .727$), leading to rejection of the null hypothesis. These findings support the Resource-Based View, indicating that mobile banking can serve as a strategic operational resource enhancing competitiveness in underserved settings. The study recommends expanding mobile telecommunications infrastructure, providing digital literacy training, and promoting mobile banking as an integral financial management tool for MSEs in digitally underserved counties.

Keywords: *Mobile banking innovation; micro and small enterprises; MSE performance; Resource Based View; Kwale County; Kenya.*

1.1 Introduction

Kenya's micro and small enterprises (MSEs) are a vital part of the country's economic fabric, contributing about 34 per cent of the nation's gross domestic product (GDP) and employing more than 80 per cent of the Kenyan population (Micro and Small Enterprises Authority [MSEA], 2024). The ability of MSEs to create, accumulate and share income is widely recognized in developing

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countries, including the cases of women, young people and persons with disabilities who are kept out of formal employment markets (Global System for Mobile Communications Association [GSMA], 2020; Federation of Kenya Employers [FKE], 2021). These gains are notwithstanding the fact that the sector has a structural challenge, about 46 percent of MSEs close within their first year of operation in Kenya, which indicates high structural issues such as lack of access to affordable credit, no collateral or lack of trust in businesses that may not be creditworthy based on traditional valuation schemes (FKE, 2021; MSEA, 2024).

Digital financial innovation, and mobile money innovation specifically can be used to address these structural barriers through access to capital, payment instruments, saving channels, and credit facilities that were not previously available via traditional banking (Balboa *et al.*, 2024; Financial Sector Deepening Kenya [FSD], 2024). Since the introduction of mobile money in the Pacific and East Asia in 2001, its growth has been remarkable, with GSMA (2025) reporting that there were 2.1 billion mobile money registered mobile accounts in the world, and transactions in this country alone reached USD 1.68 trillion by 2024. Sub-Saharan Africa region has been leading on mobile money related transactions, it accounts for almost half of mobile money providers, agents and users, and nearly two thirds of global value and volume of transactions (GSMA, 2025). Kenya has been at the forefront of this regional leadership, as the country's mobile money market is the most developed with a penetration rate of around 95 percent, and more than 84 million mobile money accounts as of February 2025 (Central Bank of Kenya [CBK], 2025; GSMA, 2025).

Mobile banking has emerged as a significant component of Kenya's financial ecosystem, with commercial banks integrating banking services into mobile platforms to extend their reach beyond traditional branch networks (CBK, 2025). The number of bank accounts accessible via mobile platforms has exceeded 38 million, with transaction volumes by commercial banks now comparable to those of dedicated mobile money operators (CBK, 2025). Strategic partnerships such as Safaricom- Kenya Commercial Bank (KCB) M-Pesa, Equity Bank's Equitel, and Co-operative Bank's MCo-op Cash have extended formal banking services to MSE operators previously excluded by minimum balance thresholds, branch proximity constraints, and documentation requirements (Wachira & Njuguna, 2023). For MSEs specifically, these platforms have delivered measurable benefits in transaction cost reduction, savings mobilization, real-time financial visibility, and digital creditworthiness building (Kipchoge & Mutuku, 2024; Wachira & Njuguna, 2023).

While the Technology Acceptance Model (TAM) (Davis, 1989) explains the conditions under which MSE operators adopt mobile banking, it does not adequately account for why adoption translates into differential performance outcomes across enterprise contexts. The Resource-Based View (RBV) (Barney, 1991; Wernerfelt, 1984) provides a more complete explanation by framing mobile banking not merely as a technology to be adopted, but as a strategic operational resource

<https://doi.org/10.53819/81018102t70102>

whose performance value is conditioned by its relative rarity and inimitability in a given operating environment. In digitally underserved settings, mobile banking satisfies the RBV conditions of value, rarity, imperfect imitability, and non-substitutability, making it a potential source of sustained competitive advantage for MSEs that deploy it strategically (Barney, 1991). This study therefore adopts the RBV as its primary theoretical anchor to examine how mobile banking innovation shapes MSE performance in a structurally constrained semi-rural context.

Despite Kenya's expanding mobile money evidence base, a persistent methodological limitation undermines the precision of existing findings. Most studies measure mobile banking, mobile payments, mobile lending, and mobile savings under a single composite mobile money construct (Mugalo, 2021; Khorow, 2023), obscuring the distinct performance contribution of each functional dimension. This aggregation produces generalizations that cannot isolate how mobile banking specifically shapes enterprise outcomes through transactional convenience, savings mobilization, and cost reduction differently from credit or payment functions (Wachira & Njuguna, 2023). The present study addresses this gap by disaggregating mobile banking innovation as a distinct construct and examining its isolated effect on MSE performance independently of other mobile money dimensions.

The existing evidence on mobile banking and MSE performance in Kenya is additionally marked by evidentiary inconsistency. Studies conducted in Kericho and Nairobi report significant positive effects of mobile banking on enterprise performance (Bii *et al.*, 2019; Waihenya & Kithae, 2022; Vincent & Jagongo, 2022), while other studies find no significant relationship between mobile money adoption and enterprise sales or performance outcomes (Mugalo, 2021; Akoya, 2022). This incongruence is partly attributable to differences in how mobile banking is operationalized, the types of enterprises sampled, and the infrastructural settings in which studies are conducted, suggesting that the conditions under which mobile banking delivers measurable performance improvement remain theoretically underspecified. Resolving this ambiguity requires construct specific analysis conducted in a setting where structural constraints are pronounced and mobile banking represents a genuinely scarce financial resource.

Geographically, the Kenyan empirical literature is concentrated in urban and inland counties including Nairobi, Kericho, Kakamega, Garissa, and Kajiado, where financial sector penetration, digital literacy, and banking infrastructure density are considerably higher than in semi-rural coastal counties (KIPPRA, 2019, 2022). Semi-rural settings such as Kwale County present additional contextual challenges that are underrepresented in the literature, including cybersecurity vulnerabilities, financial literacy deficits among enterprise operators, and infrastructure constraints such as limited network coverage (FSD, 2024; GSMA, 2022). With Kenya's lowest MSE survival rate of 0.87 percent (KIPPRA, 2019), Kwale County offers a critically important context for examining whether and how mobile banking improves performance within a structurally

<https://doi.org/10.53819/81018102t70102>

constrained environment. This study therefore contributes beyond geographic novelty by testing the theoretical and practical boundaries of mobile banking as a performance resource under conditions of financial underdevelopment.

Micro and Small Enterprises in Kwale County, Kenya

Kwale County, located in Kenya's coastal region, has approximately 103,944 micro and small enterprises (MSEs) distributed across its five sub-counties. These enterprises operate in diverse sectors, including agriculture, manufacturing, retail, aquaculture, and hospitality, and constitute a significant component of the county's local economy. Despite their economic importance, MSEs in the county continue to face substantial challenges, including inadequate institutional support, limited working capital, and restricted access to credit facilities. These constraints have contributed to Kwale County recording the lowest MSE survival rate in Kenya, with the majority of enterprises ceasing operations within five years of establishment. Financial and operational challenges have been identified as the primary factors underlying this high business failure rate (KIPPRA, 2019, 2022).

Despite Kenya's widespread adoption of mobile money services, Kwale County continues to experience significant disparities in digital financial infrastructure, particularly within its interior sub-counties where banking institutions and mobile money agent networks remain limited. Although many MSEs utilize mobile money for routine business transactions, its application is predominantly transactional rather than strategic, thereby limiting its potential contribution to enterprise performance and long-term growth. Furthermore, a substantial proportion of MSEs operate within the informal sector, restricting their access to formal financial services, government support programmes, and opportunities for sustainable business development. The convergence of high enterprise vulnerability, inadequate digital financial infrastructure, and pervasive informality underscores the importance of Kwale County as a critical context for examining the impact of mobile banking innovation on enterprise performance within a financially underserved and predominantly rural setting.

1.2 Statement of the Problem

A persistent financing gap continues to constrain the productive capacity of MSEs despite their substantial contribution to Kenya's economy. MSEs contribute approximately 34 percent of the country's gross domestic product (GDP) and account for over 80 percent of total employment. Nevertheless, nearly half of these enterprises cease operations within their first year of establishment due to limited access to affordable credit, inadequate collateral, and underdeveloped financial infrastructure (FKE, 2021; MSEA, 2024). The situation is particularly pronounced in Kwale County, where enterprise vulnerability remains exceptionally high. According to KIPPRA (2019), the county records a business survival rate of only 0.87 percent, the lowest in Kenya,

<https://doi.org/10.53819/81018102t70102>

largely attributable to limited banking and agent network coverage in the interior sub-counties, as well as low levels of digital financial inclusion (KIPPRA, 2022). Furthermore, FSD Kenya (2024) reports that although mobile money penetration among MSE operators in the coastal region is relatively high, most enterprises use mobile money primarily for basic transactional purposes, with only a small proportion of their overall business transactions conducted through these platforms. This disparity between widespread access to mobile financial services and their limited strategic utilization highlights a critical barrier to enhancing enterprise productivity, financial inclusion, and long-term business performance.

The Kenyan empirical literature on mobile banking and MSE performance does not adequately address this gap across three dimensions. Geographically, existing studies have been conducted in Nairobi (Mutio, 2019; Mue, 2021; Waihenya & Kithae, 2022; Vincent & Jagongo, 2022; Sikuku, 2025), Kajiado (Okello *et al.*, 2023), Makueni (Muathe, 2021), Kericho (Bii *et al.*, 2019), Vihiga (Kitigin *et al.*, 2021), Bungoma (Muhandachi, 2020), leaving semi-rural coastal counties such as Kwale County substantively underrepresented. Methodologically, prior studies have examined mobile banking as part of a composite mobile money construct bundling banking, payment, lending, transfer, and savings into a single measure, obscuring the function specific performance contribution of mobile banking as a distinct operational resource (Mugalo, 2021; Makhandia *et al.*, 2022; Konte & Tetteh, 2023; Khorow, 2023; Musa & Njeru, 2023; Tiwasing *et al.*, 2024; Wanjiru *et al.*, 2024; Mutai, 2025). This aggregation prevents precise identification of the mechanisms through which mobile banking shapes enterprise outcomes and limits the practical utility of existing findings for policymakers and operators seeking to prioritize specific mobile banking interventions.

Evidentially, the existing literature yields inconsistent findings that remain unresolved. Bii *et al.* (2019) and Waihenya and Kithae (2022) document significant positive effects of mobile banking on firm performance, while Mugalo (2021) and Akoya (2022) find no significant relationship between mobile money adoption and enterprise performance in Kenya. Further, Tiwasing *et al.* (2024) find no difference in sales between Kenyan enterprises that use mobile money and those that do not. Banda (2022) corroborates this inconclusive pattern, establishing that mobile banking produced no discernible impact on MSE financial performance in Zambia, and Ndatuwon (2020) documents only a marginal positive effect on Small and Medium Enterprise (SME) operating costs in Nigeria. This evidentiary inconsistency is partly attributable to methodological imprecision and partly to the absence of context specific analysis in structurally constrained environments where mobile banking represents a genuinely scarce resource (Barney, 1991). The present study addresses all three gaps by disaggregating mobile banking innovation as a distinct construct, situating the analysis within Kwale County, and applying a rigorous explanatory inferential framework to generate evidence with direct academic and policy relevance.

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Objective of the study

Determine the effect of mobile banking innovation on performance of micro and small businesses in Kwale County, Kenya.

Research Hypothesis

H₀: mobile banking innovation has no statistically significant effect on performance of micro and small enterprises in Kwale County, Kenya.

Theoretical Framework

This study is grounded in the Resource-Based View (RBV) theory, initially proposed by Wernerfelt (1984) and further developed by Barney (1991), who established the conditions under which firm-specific resources can generate sustained competitive advantage. The RBV asserts that organizational resources become sources of sustained competitive advantage when they possess four key attributes: they are valuable, enabling firms to exploit opportunities or mitigate external threats; rare, in that they are not widely possessed by current or potential competitors; imperfectly imitable, making them difficult or costly for competitors to replicate; and non-substitutable, such that no strategically equivalent alternative resources can perform the same function (Barney, 1991).

Within the context of MSEs operating in digitally underserved environments such as Kwale County, mobile banking can be conceptualized as a strategic organizational resource that exhibits these characteristics. By facilitating access to financial services, improving transaction efficiency, reducing operational costs, and enhancing financial decision-making, mobile banking has the potential to strengthen enterprise capabilities and contribute to sustained competitive advantage and improved business performance. The RBV therefore provides the theoretical rationale for expecting a positive and significant relationship between mobile banking innovation and MSE performance in the present study context.

Mobile Banking Innovation

Mobile banking innovation refers to the application of mobile technologies to facilitate the delivery and utilization of banking and financial services through mobile devices, thereby enabling users to perform a wide range of financial transactions without the need to visit a physical bank branch (Mue, 2021; Onohwakpo & Stanfast, 2021). Through mobile banking platforms, customers can conveniently access their bank accounts, transfer funds, make payments, and conduct other financial transactions via telecommunication networks (Mue, 2021). The widespread adoption of mobile banking has been attributed to its perceived ease of use, reliability, and operational

<https://doi.org/10.53819/81018102t70102>

efficiency, making it a viable financial innovation for individuals and businesses alike. For MSEs, mobile banking innovation extends beyond facilitating routine financial transactions to include enhancing savings mobilization, improving access to financial services, and reducing the costs associated with traditional banking infrastructure (Osiolo & Sije, 2023; Wachira & Njuguna, 2023).

Mobile banking offers significant operational advantages to MSEs by enhancing the convenience and efficiency of financial transactions, particularly in regions where access to physical bank branches and agent banking services is limited (Vincent & Jagongo, 2022). Through mobile banking platforms, enterprises can conduct financial transactions more conveniently, rapidly, and at lower cost, thereby reducing the time and resources required to access banking services. This is especially beneficial for MSE operators in rural and underserved areas, who would otherwise incur substantial travel expenses and opportunity costs associated with visiting conventional banking facilities (Kipchoge & Mutuku, 2024). From a theoretical perspective, the convenience afforded by mobile banking is supported by the TAM model, which posits that perceived ease of use and perceived usefulness are key determinants of technology adoption and its subsequent influence on organizational performance (Davis, 1989). Empirical evidence further supports this proposition, with Wachira and Njuguna (2023) demonstrating that the reliability, accessibility, and cost-effectiveness of mobile banking enhance operational efficiency, improve financial management, and strengthen the competitiveness of MSEs.

The savings mobilization function of mobile banking addresses a fundamental structural constraint faced by MSEs, namely limited access to formal savings mechanisms resulting from minimum account balance requirements, geographical distance from financial institutions, and the administrative complexities associated with maintaining conventional deposit accounts (GSMA, 2022). By providing affordable and accessible financial services through mobile devices, mobile banking enables MSEs, particularly those operating in peri-urban and remote areas, to accumulate financial reserves without relying on traditional banking infrastructure (GSMA, 2023). In addition, mobile banking platforms facilitate regular saving practices while generating digital financial transaction histories that can serve as evidence of financial behaviour. These digital records enhance the creditworthiness of MSEs in the eyes of formal financial institutions, thereby improving their access to credit and creating opportunities for progressively larger financing that supports business expansion and long-term enterprise development (Chibueze, 2021).

The transport cost reduction dimension of mobile banking refers to the financial savings realized through the remote execution of banking transactions, thereby eliminating or minimizing the need for travel to physical banking facilities. For MSEs operating in semi-rural and peri-urban areas, accessing conventional banking services often entails considerable transportation expenses, travel time, and opportunity costs, all of which can adversely affect business profitability and operational

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efficiency (Madinah, 2019; Mue, 2021). By enabling enterprises to transfer funds, make payments, access account information, and perform other banking transactions through mobile devices, mobile banking substantially reduces these transaction-related costs. The resulting savings allow MSEs to redirect financial and time resources towards productive business activities and investment, thereby enhancing operational efficiency and enterprise performance (Tawfik et al., 2024; Sikuku, 2025). Okenyuri (2019) found that M-Pesa-mediated transactions generate significant cost savings through reduced transportation expenses, while Mutio (2019) established that the performance-enhancing effects of mobile banking in Kenya are largely attributable to reductions in the costs associated with conventional banking and remittance services.

Performance of Micro and Small Enterprises

Enterprise performance is a multidimensional construct that reflects the extent to which a firm achieves its operational and strategic objectives through the efficient deployment of its resources (Sakyi *et al.*, 2025). In the management and entrepreneurship literature, performance is understood as the aggregate outcome of an enterprise's resource acquisition, transformation, and deployment processes, evaluated against defined financial and operational benchmarks (World Bank, 2022; Hitt *et al.*, 2023; OECD, 2023). The importance of measuring enterprise performance accurately cannot be overstated, particularly in developing economy contexts where MSEs serve as the primary vehicles for employment creation, household income generation, and local economic development. This is because enhanced firm performance may lead to business growth, job creation, and higher incomes (MSEA, 2024; GSMA, 2020). As a result, poverty is reduced, economic resilience is strengthened by enabling households and firms to better withstand financial shocks, and more businesses are encouraged to transition from the informal to the formal economy.

Defining MSE performance requires careful conceptual work, as the operational realities of micro and small enterprises differ substantially from those of formal large firms. Many MSEs maintain informal, incomplete, or perception based financial records, which makes exclusive reliance on objective profitability measures both impractical and likely to produce biased estimates (Abrokwah-Larbi, 2024). Empirical studies on MSE performance in Kenya and comparable developing economies have therefore increasingly adopted composite performance constructs that integrate both financial and non-financial dimensions, capturing growth trajectories, operational efficiency outcomes, and customer facing service quality indicators alongside revenue and profit measures (Mutiso & Reuben 2021; Mustapha *et al.*, 2025). This approach acknowledges that performance for a small enterprise owner may mean the ability to consistently meet financial obligations, retain loyal customers, and grow the volume of transactions processed, rather than optimizing a formal income statement. Consequently, this study operationalizes MSE performance using three complementary dimensions: business growth, transaction efficiency, and customer satisfaction.

<https://doi.org/10.53819/81018102t70102>

Empirical Review

Kharusi (2024) examined the effect of fintech solutions including mobile banking on firm performance in the Sultanate of Oman. The study adopted a quantitative approach, used simple random sampling technique to select a sample of 180 respondents drawn from SMEs and financial institutions, and applied multiple regression analysis to establish relationships between variables. It was found that mobile banking had a significant positive effect on firm performance ($B = 1.273$, $p < .001$) across both operational and financial indicators, emerging as the strongest predictor within the fintech composite, confirming that mobile banking constitutes a distinct and powerful performance driver beyond broader digital finance measures. The finding provides proof of the performance value of mobile banking, but as classified by World Bank, Oman conveys a high income economy context, with considerably a more developed financial infrastructure and hence does not give a lot of clues as to how the relationship works in contexts where mobile banking could be a more central tool for addressing constraints to access to formal financial services, which is the case in Kwale County studied in the present study.

Enaigbe and Ezeliora (2025) investigated the impact of mobile banking on financial inclusion and SME growth in Nigeria, Ghana, and Kenya. The study adopted a quantitative research design, and was based on diffusion of innovation theory and financial intermediation theory. Primary data was collected from a sample 400 SME owners, who were chosen using stratified random sampling and purposive sampling techniques. The relationship between the variables was analyzed using multiple linear regression and logistic regression. The study established a strong positive correlation between mobile banking use and improvements in SME financial accessibility, operational efficiency, and revenue growth, attributing the effect primarily to transaction cost reduction and enhanced cash flow management across all three country contexts. Although the multi-country evidence bolsters the regional argument for mobile banking, the cross-country focus of the study does not provide as much scope to explore how enterprise-level performance outcomes differ in a particular sub-national environment with its unique resource and infrastructural conditions, which is the case of Kwale County in the present study.

Yohana *et al.* (2024) examined how financial performance of MSEs in Arusha city, Tanzania is affected by mobile banking adoption. A descriptive research design was applied in the study, which was based on the Technology Acceptance Model (TAM). Stratified random sampling technique was applied to obtain a representative sample of MSE owners. Regression analysis and correlation analysis were used to analyze the relationship between mobile banking adoption and enterprise performance. The results showed that mobile banking adoption was found to have a significant positive impact on operational efficiency, financial sustainability and market competition of MSEs. While the study validates the theoretical assumption that mobile banking is relevant to performance in the context of MSE in East Africa, it offers an adoption-centric basis

<https://doi.org/10.53819/81018102t70102>

for the study of mobile banking innovation, which justifies the use of the RBV theory in the present study to explore the performance value of mobile banking innovation based on the resource conditions of the operating environment.

Waihenya and Kithae (2022) investigated the impact of mobile banking services on the performance of informal businesses in Nairobi County, Kenya. This study embraced a descriptive research design, and was grounded on the modern economic theory and financial intermediation theory. The sample population consisted of 386 owners of informal businesses, selected using stratified random sampling technique. Regression analysis method was used to determine the connection between mobile banking services and enterprise performance. The results revealed that mobilization of savings and access to mobile banking credit positively and significantly affected enterprise performance. The study shows how crucial mobile banking services are to informal enterprises, but findings from Nairobi do not offer much insight into the performance implications of mobile banking innovation in semi-rural coastal markets, which the present study aims to provide by examining the significance of mobile banking services used by MSEs in Kwale County and relying on the Resource Based View as an analytical framework.

The reviewed studies show a positive relationship between mobile banking innovation and enterprise performance both in global, regional, and Kenyan contexts. The literature is less developed, however, on how mobile banking innovation contributes to MSE performance in sub-national markets where financial access, financial infrastructure, and other resource options may vary significantly from those found in more developed financial markets in urban and national markets. Taking the context and analysis into account, the present study aims to address it by considering mobile banking innovation as an independent construct and analyze its relationship with MSE performance using an explanatory research design based on Resource Based View. The targeting of Kwale County in particular gives a perspective-specific context to the evidence gathered in this research from a semi-rural and coastal context, where there is a high enterprise sustainability problem but limited existing literature.

2.0 Research Methodology

This study was guided by the positivist research philosophy, which holds that the relationship between mobile banking innovation and MSE performance can be objectively measured and empirically tested using quantifiable data collected from a representative sample (Mugenda & Mugenda, 2019; Creswell & Creswell, 2023). Positivism was adopted because the study sought to establish a precise, generalizable relationship between a clearly defined independent variable and a measurable dependent variable, consistent with a quantitative research approach (Kothari & Garg, 2024). An explanatory cross-sectional research design was adopted to examine the directional relationship between mobile banking innovation and MSE performance at a defined point in time (Sekaran & Bougie, 2025).

<https://doi.org/10.53819/81018102t70102>

The target population comprised operators of registered and unregistered micro and small enterprises located in the major trading centres across the five sub-counties in Kwale County, totalling 91,195 MSEs at the time of the study (Kwale County Government, 2026). A sample of 410 respondents was determined using the Yamane (1967) formula at a 95 percent confidence level and a 5 percent margin of error, consistent with prior MSE studies in Kenya that applied the same formula to known finite populations (Mugalo, 2021; Waihenya & Kithae, 2022; Khorow, 2023). Stratified random sampling was employed in Ukunda, where enterprise concentration was highest, with businesses grouped into ten sector-based strata to ensure proportional representation across economic activities (Kothari & Garg, 2024). Purposive sampling was used in the remaining trading centres, where enterprise clusters were geographically dispersed and sector diversity required deliberate selection to capture the heterogeneous trading environment of Kwale County (Mugenda & Mugenda, 2019).

Primary data was collected using a structured questionnaire administered through the drop and pick method by five trained research assistants proficient in Kiswahili, whose language competency enhanced respondent comprehension and encouraged candid responses particularly in remote trading centres (Kothari & Garg, 2024). Eligible respondents were enterprise owners, managers, or supervisors who had utilized mobile banking services for at least one core business function, including receiving customer payments, paying suppliers, saving funds, or accessing mobile credit. To reduce social desirability bias, research assistants emphasized the absence of right or wrong answers and the confidentiality of individual responses before questionnaire administration (Mugenda & Mugenda, 2019). All participants provided informed consent prior to data collection, participation was entirely voluntary, respondent anonymity was preserved throughout, and data were stored securely in accordance with established research ethics standards.

Mobile banking innovation was measured using nine five-point Likert scale items covering convenience, savings facilitation, and transport cost reduction, with responses ranging from 1 (strongly disagree) to 5 (strongly agree). MSE performance was measured using 18 Likert scale items capturing business growth, transaction efficiency, and customer satisfaction. Both scales were adapted from validated instruments used in prior Kenyan and regional studies to ensure contextual relevance (Bii *et al.*, 2019; Waihenya & Kithae, 2022). Items measuring mobile banking innovation and MSE performance were separated within the questionnaire to reduce conceptual priming effects and minimize the risk of common method variance arising from single-source self-reported data (Mugenda & Mugenda, 2019).

Content validity was established through expert review using the Lawshe (1975) Content Validity Ratio, yielding a Content Validity Index of 1.00, confirming that all items were relevant and representative of the constructs measured. Construct validity was confirmed through principal component analysis with varimax rotation, with all factor loadings exceeding 0.68, surpassing the

<https://doi.org/10.53819/81018102t70102>

minimum threshold of 0.40 recommended by Taherdoost (2020). Internal consistency was assessed using Cronbach's alpha, producing coefficients of 0.876 for the mobile banking innovation scale and 0.964 for the MSE performance scale, both exceeding the recommended threshold of 0.70 (Kothari & Garg, 2024). These validity and reliability outcomes confirm that the measurement instruments accurately and consistently captured the intended constructs.

Descriptive statistics including item and composite means and standard deviations were computed to summarize respondents' perceptions of mobile banking innovation. Prior to hypothesis testing, the assumptions of ordinary least squares regression were evaluated: the Kolmogorov-Smirnov test confirmed normality ($KS = .048$, $p = .071$), the Breusch-Pagan test confirmed homoscedasticity ($\chi^2 = 1.847$, $df = 1$, $p = .174$), and linearity was verified through visual inspection of standardized residual scatterplots. Multicollinearity assessment was not applicable given the single predictor variable in the model. Pearson product-moment correlation was first conducted to examine the strength and direction of the bivariate relationship between mobile banking innovation and MSE performance, after which simple linear regression was applied to test the null hypothesis using the model:

$$Y = \beta^0 + \beta^1 X + \varepsilon \dots \dots \dots (i)$$

Where Y represents MSE performance, X represents mobile banking innovation, β_0 is the constant term, β_1 is the regression coefficient, and ε is the error term. The null hypothesis was rejected where the associated probability value was less than .05, consistent with conventional statistical practice in social sciences (Field, 2018).

3.0 Results and Findings

This section presents the findings of the study in two parts. First, it reports the questionnaire response rate and descriptive statistics for mobile banking innovation as perceived by MSE operators across Kwale County's five sub-counties. Second, it presents the results of Pearson's product-moment correlation and simple linear regression analysis used to test the null hypothesis.

3.1 Questionnaire Response Rate

Of the 410 questionnaires distributed to MSE operators across the five sub counties of Kwale County, 401 were returned in usable condition, with 9 questionnaires either unreturned or excluded due to incompleteness or systematic non-response patterns. This yielded a response rate of 97.8 percent, substantially exceeding the 70 percent threshold conventionally regarded as adequate for inferential statistical analysis (Mugenda & Mugenda, 2019; Sekaran & Bougie, 2025). The high response rate is attributable to the face to face drop and pick data collection methodology, active community leader involvement in mobilizing MSE operator participation, and the role of trained, Kiswahili proficient research assistants in facilitating comprehension and completion.

Table 1: Questionnaire Response Rate

Return Rate	Frequency	Percent (%)
Returned Questionnaires	401	97.8
Unreturned / Unusable Questionnaires	9	2.2
Total Distributed	410	100.0

Note. N = 410. Source: Survey data (2026).

3.2 Mobile Banking Innovation

Respondents rated their level of agreement with nine statements measuring mobile banking innovation across three dimensions: convenience, savings facilitation, and reduction in transport costs. Responses were interpreted against the following scale bands: 1.00 to 1.79 (strongly disagree), 1.80 to 2.59 (disagree), 2.60 to 3.39 (neutral), 3.40 to 4.19 (agree), and 4.20 to 5.00 (strongly agree). Results are presented in Table 2.

Table 2: Descriptive Statistics for Mobile Banking Innovation

Item	M	SD	Min	Max
Convenience				
Mobile money makes it convenient to deposit and withdraw money from bank account(s)	4.21	0.73	1	5
Mobile money guarantees privacy while accessing money at the bank or in e-wallet	3.98	0.82	1	5
Money in bank account(s) can be accessed from anywhere and at any time using mobile phones	4.31	0.68	1	5
Banking transactions can be conducted via mobile phones easily and instantly	4.28	0.71	1	5
Savings				
It is easy to save money in bank account(s) using mobile money	4.12	0.78	1	5
It is easy to save in a mobile money account, e-wallet, or mobile phone	4.35	0.65	1	5
Savings, whether in bank or mobile wallet, can be accessed at any time using a mobile phone	4.19	0.74	1	5
Reduction in Transport Cost				
Banking using mobile phones helps reduce transport cost incurred in visiting banks	4.41	0.62	1	5
Banking using mobile phones helps save money that would otherwise be used for transport	4.38	0.64	1	5
Composite Mean / SD	4.25	0.52		

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Note. N = 401. Scale: 1.00 to 1.79 = strongly disagree; 1.80 to 2.59 = disagree; 2.60 to 3.39 = neutral; 3.40 to 4.19 = agree; 4.20 to 5.00 = strongly agree. M = mean; SD = standard deviation. Source: Survey data (2026).

The composite mean for mobile banking innovation was 4.25 (SD = 0.52), indicating strong agreement among MSE operators that mobile banking is a valuable and operationally significant resource for their enterprises. The highest rated item was the statement that banking through mobile phones reduces the transport costs associated with visiting physical bank branches (M = 4.41, SD = 0.62), underscoring the importance of overcoming geographical and infrastructure related barriers in Kwale County's predominantly semi-rural setting. This was followed by the use of mobile money accounts or electronic wallets for savings (M = 4.35, SD = 0.65) and the ability to access bank account funds anytime and from any location using a mobile phone (M = 4.31, SD = 0.68), highlighting the perceived benefits of convenience, accessibility, and financial flexibility in supporting day to day business operations.

The lowest rated item was the perceived privacy of mobile money transactions conducted through bank accounts or electronic wallets (M = 3.98, SD = 0.82). Although respondents generally agreed that mobile banking provides adequate transaction privacy, the comparatively lower mean and higher standard deviation suggest that a proportion of MSE operators continue to express some reservations regarding the security and confidentiality of digital financial transactions. Nevertheless, the consistently low standard deviations across all items indicate a high degree of agreement among respondents regarding the benefits of mobile banking. Overall, the findings demonstrate that MSE operators perceive mobile banking as an effective innovation that reduces operational costs, enhances financial accessibility, and supports efficient enterprise management within the resource constrained environment of Kwale County.

Hypothesis Testing

Prior to regression analysis, Pearson's product moment correlation confirmed a strong, positive, and statistically significant bivariate relationship between mobile banking innovation and MSE performance, $r(399) = .853$, $p < .001$, indicating that higher levels of mobile banking adoption are strongly associated with improved enterprise performance outcomes among MSEs in Kwale County. Simple linear regression analysis was subsequently conducted to test the null hypothesis that mobile banking innovation has no statistically significant effect on the performance of MSEs in Kwale County, Kenya. Results are presented in Table 3.

Table 3: Simple Linear Regression: Mobile Banking Innovation and MSE Performance

Model Summary				
R	R ²	Adj. R ²	SE	
.853	.727	.726	.309	
ANOVA				
Source	SS	df	MS	F
Regression	101.69	1	101.69	1063.02***
Residual	38.17	399	.096	
Total	139.86	400		
Coefficients				
Predictor	B	SE B	β	t
(Constant)	.681	.089	---	7.68***
Mobile Banking Innovation	.801	.025	.853	32.60***

*Note. N = 401. Dependent variable: MSE performance. SE = standard error of the estimate (Model Summary panel) or standard error of B (Coefficients panel). ***p < .001. Source: Survey data (2026).*

The regression model indicates an R value of .853, confirming a strong positive relationship between mobile banking innovation and MSE performance. The model explained 72.7 percent of the variance in MSE performance ($R^2 = .727$, adjusted $R^2 = .726$, $SE = .309$), with the remaining 27.3 percent attributable to factors outside the scope of the present model, including entrepreneurial capability, firm age, business size, access to external finance, market competition, and managerial competence, all of which are well-documented determinants of MSE performance (Kitigin, 2025; Muhandachi, 2020). The negligible difference between R^2 and adjusted R^2 confirms that the model is not over-fitted and generalizes well to the broader MSE population in Kwale County. The analysis of variance confirmed the overall statistical significance of the model, $F(1, 399) = 1063.02$, $p < .001$, with the regression sum of squares (101.69) substantially exceeding the residual sum of squares (38.17) out of a total of 139.86.

The fitted regression equation was $Y = 0.681 + 0.801X$. Mobile banking innovation was a statistically significant positive predictor of MSE performance, $B = .801$, $\beta = .853$, $t(399) = 32.60$, $p < .001$, indicating that for every one unit increase in mobile banking innovation, MSE performance increased by 0.801 units, holding all other factors constant. The constant term was also statistically significant, $B = .681$, $t(399) = 7.68$, $p < .001$, confirming a positive baseline level of MSE performance independent of mobile banking adoption. On the basis of these results, the null hypothesis was rejected: mobile banking innovation has a statistically significant, positive effect on the performance of micro and small enterprises in Kwale County, Kenya. It is nonetheless acknowledged that the reliance on self-reported Likert scale measures for both the predictor and

outcome variables introduces the possibility of common method bias and social desirability bias, which may have modestly inflated the observed associations, and the reported coefficients should be interpreted with this methodological caveat in mind (Mugenda & Mugenda, 2019).

4.0 Discussion of Findings

The study sought to evaluate the effect of mobile banking innovation on the performance of micro and small enterprises in Kwale County, Kenya. Descriptive findings established that MSE operators strongly agreed that mobile banking innovation positively supports their business operations, recording a composite mean of 4.25 (SD = 0.52), with transport cost reduction rated highest (M = 4.41, SD = 0.62), followed by savings mobilization (M = 4.35, SD = 0.65), and transactional convenience (M = 4.31, SD = 0.68). The lowest rated item was transaction privacy (M = 3.98, SD = 0.82), though it still fell within the agreement range, suggesting that while MSE operators broadly value mobile banking, residual concerns around digital security persist among a portion of respondents. The consistently low standard deviations across all items confirm strong consensus among respondents regarding the operational benefits of mobile banking innovation in Kwale County's resource constrained environment.

Inferential statistics revealed that mobile banking innovation has a statistically significant positive effect on MSE performance ($B = .801$, $\beta = .853$, $p < .001$), with the model explaining 72.7 percent of the variance in MSE performance ($R^2 = .727$, Adjusted $R^2 = .726$, $F(1, 399) = 1063.02$, $p < .001$). The fitted regression equation $Y = 0.681 + 0.801X$ indicates that for every unit increase in mobile banking innovation, MSE performance improves by 0.801 units, holding other factors constant. The constant term was equally significant ($B = .681$, $p < .001$), confirming a positive baseline level of MSE performance independent of mobile banking adoption. On the basis of these results, the null hypothesis that mobile banking innovation has no statistically significant effect on MSE performance was rejected.

The finding is consistent with comparable studies on mobile banking and enterprise performance. Bii *et al.* (2019) established that mobile banking services positively and significantly influenced MSE performance in Kericho County ($r = .766$), while Waihenya and Kithae (2022) confirmed that savings mobilization and mobile banking credit accessibility significantly improved performance of informal enterprises in Nairobi ($r = .777$). Wanjiru *et al.* (2024) similarly found that digital banking significantly and positively impacted the financial performance of MSEs in Nairobi County ($r = .784$), attributing the effect to improved payment convenience, savings mobilization, and loan accessibility. The present study's correlation coefficient ($r = .853$) exceeds those reported in these comparable Kenyan county studies, a differential that is theoretically coherent with the Resource Based View: in Kwale County, where physical banking infrastructure is sparse and financial access alternatives are limited, mobile banking satisfies the RBV conditions of value, rarity, and imperfect imitability more completely than in counties with denser financial

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infrastructure, conferring disproportionately larger performance advantages on adopting enterprises (Barney, 1991).

Not all evidence supports a significant positive relationship, and these discrepant findings require direct engagement. Banda (2022) established that mobile banking produced no discernible impact on the financial performance of MSEs in Zambia. Mugalo (2021) found no significant contribution of mobile based dimensions to MSE performance in Kakamega County, and Akoya (2022) similarly reported no significant influence of mobile money on enterprise sales in Kenya. Ndatuwon (2020) documented only a marginal positive effect of mobile banking on SME operating costs in Nigeria, suggesting that the performance pathway from mobile banking adoption to enterprise outcomes is context dependent rather than automatic. These null and weak findings are interpretable within the RBV framework: where mobile banking penetration is already high and widespread among competitors, the technology loses its rarity condition and its capacity to generate differential competitive advantage, reducing observable performance differentials between adopters and non-adopters (Barney, 1991; Tiwasing *et al.*, 2024). The discrepancy between these findings and the present study's results therefore reflects genuine contextual variation in the performance value of mobile banking, precisely the variation that makes Kwale County a theoretically important and evidentially distinct context for this inquiry.

5.0 Conclusion

The study concludes that mobile banking innovation has a positive and significant effect on the performance of micro and small enterprises in Kwale County, Kenya, leading to the rejection of the null hypothesis. Given the cross-sectional research design, the findings establish a strong association between mobile banking adoption and enterprise performance rather than a definitive cause and effect relationship, and are interpreted accordingly. The finding aligns with evidence from global, regional, and Kenyan county level studies and affirms the Resource Based View position that mobile banking constitutes a strategically valuable operational resource whose performance benefits are amplified in resource constrained environments where physical banking alternatives are scarce (Barney, 1991). Mobile banking specifically addresses the structural barriers that have historically constrained MSE performance in Kwale County, including limited physical banking access, high transport costs associated with branch visits, and inadequate savings mobilization mechanisms, by delivering transactional convenience, savings facilitation, and transport cost reduction through accessible mobile platforms.

6.0 Recommendations

The Kwale County Government, in partnership with national digital infrastructure agencies and licensed mobile network operators, should develop and implement a county specific digital financial inclusion strategy that prioritizes mobile telecommunications infrastructure investment

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in the interior sub-counties of Kinango and Samburu, where network coverage density relative to the MSE population remains insufficient to support the full range of mobile banking services. Further, mobile network operators and financial institutions should address the privacy and security concerns identified in the descriptive findings by strengthening and transparently communicating the security architecture underpinning mobile banking transactions, a measure that is likely to deepen the strategic integration of mobile savings and banking among MSE operators who currently remain cautious about the confidentiality of their transactions. These recommendations are grounded in the strong positive association established between mobile banking innovation and MSE performance in this study, and are intended to be read as evidence informed policy directions rather than as claims of definitive causal efficacy, given the cross-sectional nature of the research design (Mugenda & Mugenda, 2019; Sekaran & Bougie, 2025).

7.0 Areas for Further Research

The cross-sectional research design adopted in this study establishes a strong association between mobile banking innovation and MSE performance but does not permit causal inference regarding the temporal direction or mechanism of this relationship (Creswell & Creswell, 2023). Future studies should employ longitudinal research designs that track mobile banking adoption and enterprise performance indicators over time, enabling stronger causal claims and revealing whether performance improvements precede or follow deepening mobile banking utilization among MSEs in structurally constrained settings. Further, the present model leaves 27.3 percent of the variance in MSE performance unexplained, and future research should incorporate additional determinants including entrepreneurial capability, financial literacy, firm age, business size, and access to external finance to develop a more complete explanatory framework for MSE performance in comparable coastal semi-rural contexts. Additionally, future studies should explore the mediating and moderating mechanisms through which mobile banking adoption translates into enterprise performance improvement, including financial literacy as a mediator and entrepreneurial orientation as a moderator, to generate theoretically precise and practically actionable insights for policymakers working in digitally underserved counties.

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