



Fintech, financial inclusion, and entrepreneurship outcomes for women, youth, and MSMEs: Pathways, evidence, and policy priorities

Windu Matoka¹
Austin Mwange²
Kampamba Clarence Chibesa³
Bwalya Katuta⁴
Lwando Kalaba⁵
Kabwalwa Chilyata⁶

¹windu.matoka@zcasu.edu.zm

²austin.mwange@unza.ac.zm

³kampamba.chibesa@cbu.ac.zm

⁴bwalyakatuta.bk@gmail.com

⁵kalabalwando2022@gmail.com

⁶ckabwalwa@gmail.com

¹ZCAS University, ^{2,4,5}The University of Zambia, ³The Copperbelt University, ^{1,2,3,4,5,6}Zambia

<https://doi.org/10.51867/scimundi.6.1.26>

ABSTRACT

This paper examines the role of FinTech in expanding financial access and, critically, whether this access translates into improved entrepreneurship outcomes for women, youth, and micro, small, and medium enterprises (MSMEs). Digital financial services have expanded rapidly across developing economies, yet current financial inclusion efforts remain disproportionately focused on access metrics rather than on meaningful enterprise outcomes such as improved resilience, productivity, and growth. This paper develops a mechanisms-based framework organised around four FinTech rails: digital payments and mobile money, digital credit, digital savings, and interoperability and data platforms. For each rail, the paper traces the channels through which improved inclusion quality affects entrepreneurship outcomes, including transaction cost reduction, enhanced risk sharing, smoother working capital, improved supplier and customer relations, and better investment screening. Four theoretical frameworks are relevant to the FinTech-to-inclusion-to-entrepreneurship pathway. Transaction cost economics, Information economics, Risk-sharing theory and theory of inclusive finance and digital adoption. Drawing on a structured narrative synthesis of peer-reviewed empirical studies, primarily from Sub-Saharan Africa, the paper finds that the most robust and consistent impacts of FinTech are on resilience and risk sharing, while productivity and growth effects are heterogeneous and conditional on infrastructure quality, market structure, and the financial and digital capabilities of entrepreneurs. The paper also identifies systemic risks associated with rapid FinTech scaling, including over-indebtedness, digital fraud, market concentration, and persistent digital divides that disproportionately affect women and youth. Based on this analysis, five evidence-grounded policy recommendations are advanced covering interoperable payment systems, proportionate digital credit regulation, gender- and youth-responsive onboarding, integrated capability building, and outcome-based monitoring frameworks.

Keywords: Digital Finance, FinTech, Financial Inclusion, MSMEs, Women Entrepreneurship, Youth Entrepreneurship

I. INTRODUCTION

Digital financial services have transformed the frontier of financial inclusion by enabling small-value transactions and fast remittances through digital channels and by supporting remote onboarding at a scale that has demonstrated that branch-based banking is not necessary in many low- and middle-income countries. Mobile money and other digital financial platforms allow for new forms of payment that enable economic transactions at substantially lower cost and open new economic possibilities for both households and firms. The inclusion potential of these services is particularly relevant for the most vulnerable and underserved groups, including women, youth, and MSMEs, who are frequently affected by obstacles such as remote location, lack of formal identification, and high transaction costs that have historically excluded them from mainstream formal financial services (Ozili, 2018). Landmark studies, such as Jack and Suri (2014) on Kenya's mobile money revolution, have demonstrated the potential of these services to facilitate risk sharing and reduce transaction costs, establishing an empirical foundation for the broader FinTech and inclusion literature.



Many policy discussions conflate access and outcomes, implying that expanded access to mobile money or other financial products will automatically produce better outcomes for poor customers. In practice, however, holding a mobile wallet does not necessarily translate into sustainable use, enterprise investment, or higher productivity. At the same time, digital financial services, while reducing costs in some cases, have also introduced new challenges for poor customers, including fraud risks, inadequate dispute settlement mechanisms, unclear pricing, and the rapid accumulation of debt through digital credit products. What the development policy community needs is a framing of FinTech and financial inclusion that is more directly relevant to entrepreneurship outcomes in Africa. Focusing on women, youth, and MSMEs, the groups at the nexus of financial exclusion and formal employment constraints across many African countries, provides a good starting point for this inquiry. This paper examines the pathway from FinTech adoption to financial inclusion quality and, ultimately, to entrepreneurship outcomes.

The channels through which digital finance affects informal and small enterprise entrepreneurship are multiple and interact in complex ways. Some are well established in the broader digital finance literature, while others remain more nascent and conditional. Digital payments and mobile money reduce transaction costs, increase transaction speed and reliability, and enable risk sharing and greater resilience to shocks, as established by Jack and Suri (2014) and Riley (2018). Transaction histories create a data trail that can underpin relationship banking activities such as supplier advances that are common in the working capital financing of microenterprises (Tetteh et al., 2025). Digital credit products can affect liquidity and therefore the capacity of informal entrepreneurs to manage shocks, but their effects vary greatly depending on product design and the regulatory safeguards protecting end-users (Suri et al., 2021). These channels of effect are conditioned by the underlying infrastructure, including the geographic coverage of mobile networks and agent points of access, as well as by market structure factors such as interoperability among payment systems (Mothobi & Grzybowski, 2017; Bianchi et al., 2023).

1.1 Statement of the Problem

FinTech services are spreading rapidly across developing countries, yet current financial inclusion efforts tend to focus heavily on measures of access, such as the number of accounts opened, rather than on more meaningful outcomes for entrepreneurs such as improved stability, productivity, and growth. A review of the evidence reveals that the most robust and consistent impacts of mobile money are on risk sharing and increasing the resilience of firms, while impacts on firm productivity are heterogeneous and conditional (Ahmad et al., 2020). Moreover, the rapid scaling of digital credit has revealed gaps in the regulation of market conduct that have not been properly addressed and that threaten to undermine the welfare of customers and the stability of enterprises, even in the context of expanding access (Upadhyaya et al., 2025; Ozili, 2018).

Increasing access to digital tools alone will not enable women and youth to make full use of their increased entrepreneurial capacity. These groups face specific and compounding barriers, including lower smartphone ownership and digital skills, greater exposure to fraud, limited geographic reach of agent networks, and social norms that restrict control over business income. Furthermore, when interoperability is low and market concentration is high, agents and users may be forced to use monopolistic platforms that impose high transaction fees and restrict cross-network transactions, thereby eroding the gains from digital access. The underlying issue is an outcomes gap in which policymakers continue to assume an automatic link from digital inclusion to better entrepreneurship, without recognising that this causal relationship can be weakened or entirely broken by dynamics in the entrepreneurial ecosystem and the regulation of associated digital markets.

1.2 Research Objectives

- i. Conceptualise and explain the pathway linking FinTech adoption to financial inclusion quality and entrepreneurship outcomes;
- ii. Synthesise empirical evidence on how digital finance affects the resilience, performance, and growth of women-led, youth-led, and MSME enterprises, and identify the risks and constraints that moderate these impacts; and
- iii. Propose policy recommendations and an outcome-based monitoring agenda for regulators and enterprise development institutions.

II. LITERATURE REVIEW

2.1 Theoretical Review

Four theoretical frameworks are relevant to the FinTech-to-inclusion-to-entrepreneurship pathway. Transaction cost economics provides the first foundational lens. A range of costs arise that entrepreneurs must navigate in cash-based economies, including search costs, bargaining costs, and enforcement costs, as well as the time cost of physically travelling to pay or collect money and the coordination failures that arise in commercial exchange (Jack & Suri, 2014; Beck et al., 2018). Electronic payment systems reduce these transaction costs by dramatically lowering the marginal



cost of individual low-value transactions while simultaneously enabling transactions to occur at greater speed, thereby supporting the frequent interactions and the sustained supplier and customer relationships that are essential for small enterprise viability.

Information economics provides the second theoretical lens. Credit and trade relationships in informal markets are frequently hindered by asymmetric information and the lack of verifiability of counterparty claims. Digital transactions create a data trail that can mitigate information asymmetry for lenders and suppliers, enabling screening and monitoring that would be prohibitively costly in a purely cash-based marketplace. This is particularly relevant for MSMEs that cannot access formal credit because they lack collateral or official documentation. Evidence on trade credit for informal entrepreneurs demonstrates how digital transaction histories create greater credibility and expand contracting capacity, consistent with the predictions of information economic theory (Tetteh et al., 2025).

Risk-sharing theory provides the third theoretical lens. Low-cost transfer mechanisms can be an important tool in informal risk-sharing arrangements, allowing households and MSMEs to mutually support each other in response to economic shocks. These shocks, which range from health crises to agricultural failures to market disruptions, would otherwise force vulnerable enterprises to sell productive assets or reduce business inputs. Studies such as Jack and Suri (2014) and Riley (2018) demonstrate that mobile money facilitates exchange that prevents shocks from translating into consumption reductions and, consequently, protects microenterprise survival. Since household and microenterprise assets are frequently commingled in informal economies, the protective effect of mobile money on household welfare translates directly into greater enterprise resilience.

The theory of inclusive finance and digital adoption provides the fourth lens. Interoperability, market structure, and institutional quality are central to determining whether digital payment systems generate inclusive outcomes or reinforce exclusion. Physical infrastructure variables such as electrification and mobile network coverage influence mobile phone adoption rates and the use of digital financial services in rural areas. Market structure shapes the pricing of services and the incentives for innovation, while interoperability determines whether digital payment systems function as open networks accessible to all or as closed systems controlled by individual providers. Regulatory frameworks are essential for enforcing interoperability, since the network effects inherent in digital payment industries create strong incentives for market concentration and lock-in that will not be corrected through market forces alone (Bianchi et al., 2023; Mthobi & Grzybowski, 2017).

2.2 Empirical Review

Empirical evidence on the effects of digital finance on enterprise outcomes is now substantial, though heterogeneous in its findings. The clearest and most consistent finding across the literature concerns resilience and risk sharing. Jack and Suri (2014) demonstrated using experimental evidence from Kenya that mobile money access reduces the negative consumption impact of exogenous income shocks by enabling remittance transfers across larger networks of people, with direct consequences for microenterprise survival. Riley (2018) showed that mobile money is used to strengthen local risk-sharing arrangements in Tanzania. Munyegera and Matsumoto (2016) documented that in Uganda, mobile money increases household welfare primarily through remittances that relax liquidity constraints, thereby supporting enterprise continuity.

Evidence on enterprise productivity and growth effects is more heterogeneous and conditional. Kabengele and Roessling (2022), comparing formal and informal sectors across Zambia, Mozambique, and Zimbabwe, found that informal businesses adopting mobile money experience higher productivity, with the effect being stronger for female-owned informal businesses. Konte and Tetteh (2023) found using data from fourteen Sub-Saharan African countries that mobile money does not generally produce large productivity gains on its own but significantly increases the positive effect of bank account ownership and bank credit access on firm-level productivity, indicating a complementary rather than substitutive relationship between mobile money and traditional financial services. Lemma and Mlilo (2026) find that intensive mobile money use among women-owned businesses in Kenya is associated with higher business performance and reduces the performance gap relative to male-owned firms, especially for financially constrained women entrepreneurs.

On digital credit, Suri et al. (2021) find that digital credit in Kenya contributes to household resilience by reducing the likelihood that households deplete savings during negative events, providing valuable insurance against liquidity shocks. However, the speed and automation features of digital credit platforms also facilitate over-borrowing and debt accumulation when affordability checks and price transparency measures are absent. Evidence from Kenya on the regulatory political economy of digital credit suggests that individual regulatory components may have limited impact when regulation is restricted to a subset of market participants and fails to address the highly concentrated market power in the banking and mobile sectors. Achieving responsible digital financial inclusion requires effective market conduct regulation that enforces transparency, appropriate debt collection rules, responsible use of customer data, and efficient dispute resolution mechanisms, which are particularly important for women and youth micro-enterprises that face cash flow vulnerabilities and have lower bargaining power with digital service providers (Upadhyaya et al., 2025).



III. METHODOLOGY

3.1 Research Design

This paper employs a structured narrative synthesis approach that integrates peer-reviewed empirical studies and conceptual contributions addressing digital finance, financial inclusion, and entrepreneurship-relevant outcomes. The synthesis is organised around a mechanisms-based logic model that links FinTech services to inclusion dimensions and then to enterprise outcomes. The logic model distinguishes four FinTech rails, namely digital payments and mobile money, digital credit, digital savings, and interoperability and data platforms, and for each rail traces the specific channels through which inclusion quality affects enterprise performance.

3.2 Search Strategy and Source Identification

The review drew on peer-reviewed journal articles, policy-relevant academic studies, and highly cited contributions on mobile money, digital payments, digital credit, inclusion quality, MSME performance, and gendered access to digital finance. Priority was given to studies from Sub-Saharan Africa and other emerging market settings where the inclusion challenge, infrastructure gaps, and entrepreneurial constraints are most pronounced. Sources were selected for their direct relevance to the paper's objectives and then analysed comparatively to identify recurring mechanisms, conditions, and risks.

3.3 Inclusion and Exclusion Criteria

Included studies had to address at least one of the following: FinTech adoption and usage, quality of financial inclusion, entrepreneurial resilience, productivity or growth outcomes, digital credit, interoperability, infrastructure constraints, or gender and youth disparities in digital finance. Purely descriptive reports with no analytical connection to entrepreneurship outcomes were excluded unless they provided indispensable contextual evidence on market structure or regulation. The synthesis then grouped findings according to the mechanisms linking digital finance to enterprise outcomes.

The synthesis prioritises studies with strong internal validity, distinguishing outcomes at the household level from enterprise outcomes while acknowledging that household resilience frequently mediates microenterprise stability in informal economies (Jack & Suri, 2014; Munyegeera & Matsumoto, 2016; Ahmad et al., 2020). Studies from Sub-Saharan Africa receive particular emphasis given the region's advanced mobile money ecosystem and its relevance to the policy context for which recommendations are advanced, though evidence from South and Southeast Asia and Latin America is incorporated where it illuminates mechanisms that may be transferable.

IV. FINDINGS & DISCUSSION

4.1 Findings

4.1.1 FinTech Rails and the Quality of Financial Inclusion

The first synthesis finding is that payment rails rather than credit products have proved the most universally enabling technology for financial inclusion. Digital payments and mobile money reduce the costs of sending, receiving, and storing funds and make transactions faster and safer. Inclusion quality is achieved when platforms are reliable, low cost, and supported by adequate agent network liquidity for cash-in and cash-out operations. The constraints imposed by physical infrastructure determine the patterns of take-up and use of mobile financial services. In low-penetration regions, mobile services are adopted less frequently, but the level of mobile-dependent activity conditional on take-up is generally high, confirming the role of digital rails as substitutes for physical infrastructure in the absence of the latter (Mothobi & Grzybowski, 2017).

The demographic and economic heterogeneity of mobile money usage is well-documented. Grzybowski et al. (2023) find that people rely more heavily on mobile money as traditional financial institutions move to other towns, and that mobile coverage has a strong effect on mobile phone access and thereby on the size of the digital divide. These patterns suggest that mobile money usage for entrepreneurship activities is also important due to the prevalence of inter-household payments and the importance of urban-rural economic linkages for MSMEs seeking to understand and access sources of demand in remote regions.

The second synthesis finding on payment rails is that interoperability and competition are critical to delivering value to businesses. Where payment systems are interoperable, have adequate regulatory backing, and are supported by a large number of use cases, the take-off in digital payments is faster and the economy-wide effect on digital payment penetration is greater. Comparative analysis of payment systems, including M-Pesa in Kenya, UPI in India, Pix in Brazil, and Yape in Peru, demonstrates that more successful systems required regulatory coordination among providers, adequate levels of interoperability, and proactive management of data sharing and privacy issues as new services are layered on top of basic payment platforms (Aurazo & Gasmi, 2024). Network effects in these industries mean that



choices about technical standards and platform access become heavily constrained by incumbent firms and require regulatory oversight to avoid consumer harm from lock-in (Bianchi et al., 2023).

4.1.2 Resilience, Risk Sharing, and Business Continuity

One of the most consistent themes in the mobile money literature is that mobile money contributes to improving economic resilience to shocks via risk sharing and liquidity transfers. Jack and Suri (2014) demonstrated that mobile money access reduces the consumption impact of exogenous price shocks in Kenya by expanding the number of senders from whom recipients can receive transfers. Riley (2018) showed that mobile money strengthens local risk-sharing arrangements in Tanzania. Munyegeera and Matsumoto (2016) documented that in Uganda, mobile money increases household welfare primarily through remittances that relax liquidity constraints, contributing to greater enterprise survival rates. Improving enterprise survival rates is important for building microenterprise resilience because informal firms frequently rely on household assets to finance the working capital flows that enable them to navigate short-term crises.

The long-run evidence from Suri and Jack (2016) using panel data from Kenya shows that increased access to mobile money agents at the village level leads to reductions in extreme poverty and produces gender-differentiated labour market effects, with women moving into non-farm and business activities. This resilience gain for women entrepreneurs may interact with intra-household dynamics such as bargaining power over income and expenditure decisions. Women who have greater opportunities to invest their business income may benefit more than proportionally from mobile money access when it complements other changes in household financial management.

4.1.3 Enterprise Performance, Productivity, and Growth Pathways

The enterprise performance evidence corresponds to a set of conditional pathways. Reducing payment frictions and increasing settlement speed can enable faster inventory restocking, reduce cash handling risks, and enable business owners to serve more customers using digital payment methods. Aggarwal et al. (2020) find in a Malawi experiment that business owners provided with mobile money onboarding assistance and basic training exhibit higher mobile money account activity, different expenditure patterns, and improved business performance indicators, confirming that access combined with capability building generates measurable enterprise benefits. Konte and Tetteh (2023), using firm-level data from fourteen Sub-Saharan African countries, find that mobile money does not generally produce large productivity gains on its own but significantly increases the positive impact of bank account ownership and bank credit access on firm-level productivity. This finding indicates that mobile money should not be understood as a substitute for formal financial services but rather as a complementary interface that makes formal banking relationships easier to use and more accessible, particularly for small and medium enterprises that use a variety of formal and informal financial services simultaneously.

Relationship finance and trade credit represents a third important channel. In informal markets, vendors routinely provide products to buyers on credit on the basis of relationships built over time. Mobile money enhances these relationships by providing proof of transactions and reducing the settlement risk associated with payment. Evidence from Kenya shows that informal enterprise owners who use mobile money for business transactions experience higher supplier credit, greater access to customer credit, and lower transaction costs (Tetteh et al., 2025). This channel is particularly relevant for MSMEs because trade credit often constitutes the first and most scalable form of working capital finance available in informal economies. Heterogeneity by sector formality and gender is also evident: comparative evidence from Zambia, Mozambique, and Zimbabwe finds that informal businesses adopting mobile money have higher productivity, with the effect being stronger for female-owned informal businesses, while the effect on formal businesses is lower when business environment constraints are controlled (Kabengele & Roessling, 2022).

4.1.4 Digital Credit, Working Capital, and the Risk of Over-Indebtedness

Digital credit offers distinct implications for different stakeholders. Entrepreneurs can benefit by reducing uncertainty in working capital management, managing inventory disruptions, or mitigating unforeseen events. Evidence on M-Shwari in Kenya has found that digital credit contributes to household resilience by reducing the likelihood that households deplete assets when they encounter a negative event, with the liquidity provided by digital credit being particularly valuable in times of uncertainty (Suri et al., 2021). On the other hand, the speed and automation features of digital credit can facilitate over-borrowing and debt accumulation when affordability checks and price transparency measures are absent. Ozili (2018) notes that while many benefits of digital financial services have been established, issues of consumer protection, fraud, and stability remain inadequately addressed in many markets, diminishing the potential benefits to consumers and firms.

Evidence from the regulatory political economy of digital credit in Kenya is particularly instructive. Upadhyaya et al. (2025) find that individual components of the regulatory framework may have limited impact when the scope of regulation is restricted to a subset of market participants and fails to adequately address market power, which in the



Kenyan context is highly concentrated in the banking and mobile sectors. To achieve responsible financial inclusion, licensing and prudential regulations alone are insufficient. Effective market conduct regulations for financial services are urgently needed to ensure pricing transparency, responsible debt collection practices, appropriate use of customer data, and efficient dispute resolution mechanisms. Such regulations are particularly important for women and youth micro- and small enterprises, which are more vulnerable due to cash flow volatility and lower bargaining power in interactions with digital service providers.

4.1.5 Infrastructure, Agent Networks, and the Digital Divide

Infrastructure and agent networks constitute central constraints on inclusive entrepreneurship through digital finance. Physical infrastructure affects the possibility of using mobile phones for economic transactions and digital activities. The structure of agent networks surrounding mobile money users determines how easily entrepreneurs can convert digital money to cash when needed and the frequency with which they can deposit daily earnings. Grzybowski et al. (2023) find that people rely more heavily on mobile money as traditional financial institutions relocate to other towns, while mobile network coverage has a strong effect on mobile phone access and therefore on the size of the digital divide.

Agent proximity and agent characteristics are also important determinants of financial product adoption. Johnen et al. (2023) use household data from Kenya to show that households are more likely to open mobile money accounts when they are closer to agents and when those agents are well trained. Improving the quality of access to digital financial products may therefore require simultaneous investment in the quality of the agent networks that sell those products and services. Enterprise outcomes for women and youth entrepreneurs also depend not only on the existence of accounts but on the regularity and quality of cash-in and cash-out services in the markets where their businesses are located.

4.1.6 Capability, Trust, and Sustained Usage among Women and Youth

The capability constraints that shape the use of digital finance for enterprise activities are not universal and vary substantially across countries and demographic groups. Evidence across multiple countries demonstrates that financial literacy improves financial inclusion, indicating that the demand-side capability that can be strengthened through financial education is an important determinant of inclusion outcomes (Grohmann et al., 2018). For entrepreneurs, capability also means the ability to incorporate digital financial services into accounting, pricing strategies, inventory management, and risk management routines. A capacity-building experiment in Malawi demonstrates that basic training combined with reductions in transaction costs mobilises digital financial services into greater active use and produces measurable impacts on economic outcomes (Aggarwal et al., 2020).

Gendered evidence on digital finance indicates that it has the potential to strengthen women's empowerment and entrepreneurship by increasing control over financial resources and reducing friction in everyday economic life. Faton and Monwanou (2025) find that mobile money adoption and use increased women's economic empowerment and their likelihood of self-employment in Benin, with the effects being particularly strong in rural areas with expanded mobile money network coverage. Lemma and Mlilo (2026) find that higher mobile money adoption by female-owned enterprises in Kenya reduces performance gaps between female-owned and male-owned enterprises, with the greatest gains observed for financially constrained women entrepreneurs. Youth outcomes depend additionally on trust, whether digital financial services are embedded in broader opportunity structures, and whether the design of digital products encourages appropriate risk-taking or disproportionate debt accumulation. Policy should focus on youth entrepreneurship initiatives that integrate digital financial services with skills development, business support, and consumer protection regulations.

4.1.7 System-Level and Macro-to-Policy Linkages

At the system level, the paper draws on evidence linking digital finance to formalisation and public revenue capacity. Mobile money use leads to higher tax revenues in developing countries, with the overall impact being more pronounced on direct taxes through the channels of a broader tax base, strengthened institutions, and the ease of digital payment (Apeti & Edoh, 2023). These systemic effects are relevant for the design of entrepreneurship support policies because higher domestic revenue creates opportunities to expand business support programmes and to reduce administrative burdens for taxpayers when digital payment systems are designed in a pro-business and trustworthy manner.

Macro-level evidence has also shown that mobile money is a powerful tool for increasing financial inclusion across African countries and that mobile money innovations are sensitive to institutional and regulatory factors (Avom et al., 2023; Lashitew et al., 2019). Studies applying the diffusion of innovation lens suggest that effective regulation can facilitate the diffusion of pro-poor innovations while avoiding the potential trade-offs that arise when dominant platform firms impede competition. These insights are highly relevant for the design of policies governing mobile payment systems in markets where a small number of large platforms hold significant market power.



V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

This paper has synthesised evidence confirming a theoretically coherent FinTech pathway to financial inclusion through broad-based access to payment systems and mobile money, which in turn supports entrepreneurship for women, youth, and MSMEs. The effects most systematically evident across the literature are related to financial market resilience and risk sharing, and these are widely agreed to be important for consumer protection and for safeguarding income and productive assets to secure business opportunities and promote enterprise survival. Enterprise development effects exist but are not always systematic and appear to depend substantially on whether FinTech addresses specific business operating bottlenecks and whether it complements relationship-based trade credit that constitutes an important component of working capital finance in informal markets.

Digital credit provides liquidity and greater opportunity to manage shocks, but over-indebtedness and poor market conduct represent major risks to enterprise stability and welfare when not constrained through appropriate regulation and enforcement. For FinTech to be sustainable and support deeper inclusion, policymakers must address infrastructure quality, agent network conduct, market competition and interoperability, consumer protection, and the digital and financial capabilities of the entrepreneurs it is intended to serve. There is an increasing need for the measurement of financial inclusion to move from a focus on access metrics alone to more meaningful economic and quality-oriented outcome indicators.

5.2 Recommendations

First, regulators should prioritise interoperable low-cost payment ecosystems so that women, youth, and MSMEs can transact across networks without punitive fees or lock-in effects. Second, digital credit should be governed through proportionate protection rules covering disclosure, pricing transparency, responsible lending, and redress. Third, enterprise support programmes should integrate digital and financial capability building with onboarding support, especially for women- and youth-led firms facing device, literacy, and trust barriers. Fourth, policymakers should monitor outcome quality rather than access alone by tracking resilience, working-capital stability, business continuity, and enterprise growth after digital finance adoption. Fifth, infrastructure investment in mobile networks, agent networks, and reliable electricity remains essential for converting nominal access into meaningful entrepreneurial use.

Regulation of digital credit should adopt a principle-based, proportionate, and risk-based market conduct approach, with an emphasis on pricing transparency, affordability assessment, responsible dealing practices, and effective complaint handling. Outcome-based metrics, including borrower debt burden indicators, debt cycling rates, and complaint volumes, provide a more direct reflection of whether digital credit serves legitimate working capital purposes than prudential metrics alone. Evidence from Kenya suggests that regulatory design may be insufficient to secure positive consumer outcomes when it does not adequately address market concentration and asymmetries of power in the digital credit ecosystem. Inclusion policies must be gender- and youth-responsive. Gender- and youth-responsive actions in mobile financial services include reducing barriers to entry into the digital financial ecosystem through risk-based customer due diligence, expanding agent network reach in rural and less-affluent urban areas, and improving access to appropriate digital devices and airtime. The impact of mobile financial services on end users has been shown to depend substantially on the characteristics and training of agents, and therefore on the quality of the agent network as a whole, which should not be treated as merely a commercial choice by service providers.

The promotion of entrepreneurship must be accompanied by the building of financial and digital capability, as well as enterprise development services. Evidence from multiple countries shows that training interventions lead to increased active usage of digital financial services, confirming that customer capability building is at least complementary to improving infrastructure and regulation. Training should be relevant to the practical business activities of entrepreneurs, including accounting, pricing, inventory management, segmentation of household and enterprise cash flows, and the management of borrowing. Monitoring and evaluation frameworks for financial inclusion and enterprise development programmes should focus on entrepreneurship outcomes rather than on access metrics alone. Enterprise-level indicators including income stability from sales, enterprise survival rates, employment generation, and productivity growth should be the primary measures of programme effectiveness. Monitoring information should be disaggregated by gender and age to ensure that financial inclusion policies translate into inclusive entrepreneurship outcomes at the enterprise and household levels.



REFERENCES

- Aggarwal, S., Brailovskaya, V., & Robinson, J. (2020). Cashing in (and out): Experimental evidence on the effects of mobile money in Malawi. *AEA Papers and Proceedings*, 110, 599–604. <https://doi.org/10.1257/pandp.20201087>
- Ahmad, A. H., Green, C., & Jiang, F. (2020). Mobile money, financial inclusion and development: A review with reference to African experience. *Journal of Economic Surveys*, 34(4), 753–792. <https://doi.org/10.1111/joes.12372>
- Apeti, A. E., & Edoh, E. D. (2023). Tax revenue and mobile money in developing countries. *Journal of Development Economics*, 161, 103014. <https://doi.org/10.1016/j.jdeveco.2022.103014>
- Aurazo, J., & Gasmi, F. (2024). Digital payment systems in emerging economies: Lessons from Kenya, India, Brazil, and Peru. *Information Economics and Policy*, 69, 101113. <https://doi.org/10.1016/j.infoecopol.2024.101113>
- Avom, D., Bangaké, C., & Ndoya, H. (2023). Do financial innovations improve financial inclusion? Evidence from mobile money adoption in Africa. *Technological Forecasting and Social Change*, 190, 122451. <https://doi.org/10.1016/j.techfore.2023.122451>
- Beck, T., Pamuk, H., Ramrattan, R., & Uras, B. R. (2018). Payment instruments, finance and development. *Journal of Development Economics*, 133, 162–186. <https://doi.org/10.1016/j.jdeveco.2018.01.005>
- Bianchi, M., Bouvard, M., Gomes, R., Rhodes, A., & Shreeti, V. (2023). Mobile payments and interoperability: Insights from the academic literature. *Information Economics and Policy*, 65, 101068. <https://doi.org/10.1016/j.infoecopol.2023.101068>
- Faton, C. Y., & Monwanou, D. I. (2025). Impact of mobile money on the economic empowerment of women in Benin. *Telecommunications Policy*, 49(9), 103034. <https://doi.org/10.1016/j.telpol.2025.103034>
- Grohmann, A., Klühs, T., & Menkhoff, L. (2018). Does financial literacy improve financial inclusion? Cross-country evidence. *World Development*, 111, 84–96. <https://doi.org/10.1016/j.worlddev.2018.06.020>
- Grzybowski, L., Lindlacher, V., & Mothobi, O. (2023). Mobile money and financial inclusion in Sub-Saharan Africa. *Information Economics and Policy*, 65, 101064. <https://doi.org/10.1016/j.infoecopol.2023.101064>
- Jack, W., & Suri, T. (2014). Risk sharing and transaction costs: Evidence from Kenya's mobile money revolution. *American Economic Review*, 104(1), 183–223. <https://doi.org/10.1257/aer.104.1.183>
- Johnen, C., Parlasca, M., & Mußhoff, O. (2023). Mobile money adoption in Kenya: The role of mobile money agents. *Technological Forecasting and Social Change*, 191, 122503. <https://doi.org/10.1016/j.techfore.2023.122503>
- Kabengele, C., & Roessling, J. (2022). Evaluating the effect of mobile money on firm productivity in Africa: A comparison of the formal and informal sectors. *Journal of Developmental Entrepreneurship*, 27(2). <https://doi.org/10.1142/S1084946722500091>
- Konte, M., & Tetteh, G. K. (2023). Mobile money, traditional financial services and firm productivity in Africa. *Small Business Economics*, 60(2), 745–769. <https://doi.org/10.1007/s11187-022-00613-w>
- Lashitew, A. A., van Tulder, R., & Liasse, Y. (2019). Mobile phones for financial inclusion: What explains the diffusion of mobile money innovations? *Research Policy*, 48(5), 1201–1215. <https://doi.org/10.1016/j.respol.2018.12.010>
- Lemma, T. T., & Mlilo, M. (2026). Mobile money usage and performance of women-owned enterprises: Evidence from Kenya. *Investment Analysts Journal*, 55(1), 87–107. <https://doi.org/10.1080/10293523.2025.2503099>
- Mothobi, O., & Grzybowski, L. (2017). Infrastructure deficiencies and adoption of mobile money in Sub-Saharan Africa. *Information Economics and Policy*, 40, 71–79. <https://doi.org/10.1016/j.infoecopol.2017.05.003>
- Munyegera, G. K., & Matsumoto, T. (2016). Mobile money, remittances, and household welfare: Panel evidence from rural Uganda. *World Development*, 79, 127–137. <https://doi.org/10.1016/j.worlddev.2015.11.006>
- Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, 18(4), 329–340. <https://doi.org/10.1016/j.bir.2017.12.003>
- Riley, E. (2018). Mobile money and risk sharing against village shocks. *Journal of Development Economics*, 135, 43–58. <https://doi.org/10.1016/j.jdeveco.2018.06.015>
- Suri, T., Bharadwaj, P., & Jack, W. (2021). Fintech and household resilience to shocks: Evidence from digital loans in Kenya. *Journal of Development Economics*, 153, 102697. <https://doi.org/10.1016/j.jdeveco.2021.102697>
- Suri, T., & Jack, W. (2016). The long-run poverty and gender impacts of mobile money. *Science*, 354(6317), 1288–1292. <https://doi.org/10.1126/science.aah5309>
- Tetteh, G. K., Goedhuys, M., Konte, M., & Mohnen, P. (2025). Mobile money use and entrepreneurs' access to trade credit in the informal sector. *Review of Development Economics*, 29(4), 2311–2331. <https://doi.org/10.1111/rode.13223>
- Upadhyaya, R., Weitzberg, K., & Bonyo, L. (2025). Digital credit providers, regulatory frameworks, and structural power: A case study of digital microcredit regulation in Kenya. *Finance and Society*, 11(2), 186–208. <https://doi.org/10.1017/fas.2025.4>