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Navigating the Digital Economy: Market Access Challenges for Rural SMMEs and Social Media in the E-Commerce Era – A Case of Selected SMMEs in the Former Black Communities of Mbhashe Local Municipality, South Africa

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Agyei Fosu*
Walter Sisulu University, South Africa afosu@wsu.ac.za

Nozipho Giba-Fosu
Walter Sisulu University,
East London, South Africa ngiba-fosu@wsu.ac.za

Abstract

The expansion of e-commerce has reconfigured global trade landscapes, yet rural small, micro, and medium enterprises (SMMEs) in developing economies remain constrained by structural and socio-cultural barriers to digital participation. This study investigates how SMMEs in the former Black communities of South Africa's Mbhashe Local Municipality engage with social media as a conduit for market access. Employing a sequential explanatory design, the research surveyed 47 enterprises across the agro-processing, craft, retail, and construction sectors, supplemented by eight key-informant interviews. Quantitative analysis using Pearson correlations and logistic regression identified significant associations between multi-device ownership, generational orientation, and adoption of interactive platforms. Qualitative insights revealed persistent impediments, including limited digital literacy, inadequate logistics infrastructure, and cultural reservations about public displays of success. The integration of Rogers'

Diffusion of Innovations theory with Sen's capability approach provided a hybrid analytical framework that elucidates how perceived relative advantage is moderated by capability deficits and socio-cultural conversion factors. Findings indicate a "partial adoption equilibrium" in which high device penetration coexists with minimal strategic use, limiting e-commerce's commercial impact. The paper advances targeted policy measures—rural digital hubs, mobile-based micro-learning, and last-mile logistics alliances—designed to enhance digital entrepreneurial capacity and market integration. By foregrounding the interplay of technological, cultural, and institutional dimensions, this study contributes to digital inclusion scholarship and offers actionable strategies aligned with Sustainable Development Goal 8.

Keywords: *E-commerce, Rural development, SMMEs, Social media, Digital economy, South Africa*

1. Introduction

The acceleration of e-commerce has transformed competitive dynamics, enabling enterprises of varying scales to participate in global markets through digital platforms (Rahaya & Day, 2017; Walker et al., 2016). This transformative potential remains latent unless enterprises successfully integrate advanced ICT access with the requisite e-business competencies necessary for digital competition. For rural small, micro, and medium enterprises (SMMEs) in developing contexts, this dual requirement remains a formidable challenge, particularly in South Africa, where deep-seated socio-economic disparities intersect with infrastructural deficits (Oyelana & Thakhathi, 2017).

Although mobile connectivity has expanded significantly, persistent gaps in digital skills, strategic online engagement, and logistical integration hinder sustainable participation in the digital economy (Attom, 2008; Nuamah-Gyambrah et al., 2016; Fosu, 2018). Globally, digital transformation is framed as a catalyst for inclusive growth, offering the dual promise of widened market access and enhanced operational efficiency across all enterprise tiers (Kshetri, 2023; World Bank, 2022). However, in South Africa, spatial inequities remain stark: while urban centres have rapidly embraced online retail—which grew by an estimated 35% in 2023—the rural periphery continues to grapple with low broadband penetration, high data costs, and inadequate logistical networks (Gillwald & Moyo, 2023).

The Mbhashe Local Municipality, encompassing the towns of Dutywa, Willowvale, and Elliotdale, exemplifies these structural and socio-economic constraints. The region is characterised by dispersed settlements, underdeveloped transport infrastructure, and youth unemployment rates exceeding 60% (Stats SA, 2024). Despite these challenges, the municipality hosts a diverse range of SMMEs—spanning agro-processing, craft production, and service-based sectors—whose market potential could be significantly enhanced through e-commerce adoption if systemic bottlenecks were addressed.

Social media platforms such as WhatsApp Business, Facebook Marketplace, and TikTok Shop offer low-cost channels for brand visibility, customer engagement, and even peer-to-peer fulfilment coordination (Chen & Tsou, 2022). Nonetheless, the capacity of rural SMMEs to translate social media presence into measurable commercial outcomes is circumscribed by digital literacy limitations, consumer trust concerns, and socio-cultural norms that discourage conspicuous self-promotion (Baker & Lutz, 2020; Van Dijk & Hacker, 2003). These socio-cultural dynamics, when coupled with infrastructural deficiencies and unreliable courier networks, create what Graham (2021) conceptualises as a "multi-layered exclusion matrix."

This study addresses three interrelated questions:

1. What are the prevailing patterns and intensity of social media adoption for commercial purposes among rural SMMEs in Mbhashe?
2. Which structural and socio-cultural factors facilitate or impede effective utilisation?
3. What policy and practice interventions could foster more inclusive digital participation?

The analysis integrates Rogers' (2003) Diffusion of Innovations (DoI) theory with Sen's (1999) capability approach to capture both micro-level perceptions of technological advantage and meso-level structural constraints. This hybrid framework facilitates a granular analysis of how perceived benefits are filtered through capability deprivations and cultural conversion factors, thereby illuminating the specific socio-technical conditions of rural e-commerce.

2. Literature Review

2.1 Conceptualising E-Commerce in the Context of SMMEs

E-commerce, broadly defined, refers to the conduct of business transactions via electronic networks (Tagliavini et al., 2001; Turban, 2010). Beyond transactional exchanges, it encompasses supporting services such as market information dissemination, customer relationship management, and inter-organisational communication (Clarke, 2005). Contemporary definitions extend this scope to include the strategic deployment of ICTs, focusing on enhancing operational efficiency, securing competitive positioning, and facilitating market expansion (Rahaya & Day, 2016). In the SMME context, e-commerce offers an opportunity to transcend geographic boundaries, enabling micro- and small-scale producers to access regional and global markets. However, the ability to capitalise on these opportunities is contingent upon digital infrastructure availability, managerial competence, and socio-cultural receptiveness to technology adoption.

2.2 Barriers to E-Commerce Adoption in Developing Economies

A recurrent theme in the literature is that infrastructural deficits, affordability constraints, and knowledge gaps impede e-commerce adoption in the Global South (Gillwald et al., 2018; ITU, 2022). Empirical studies in Iran, India, Malaysia, and Indonesia have identified high ICT maintenance costs, concerns over security and privacy, and inadequate managerial understanding of e-commerce as pervasive barriers (Zhang, 2013; Rahaya & Day, 2016). In sub-Saharan Africa, these constraints are often compounded by unreliable power supply, fragmented logistics networks, and limited broadband penetration (Molla & Licker, 2018; Oyelana & Thakhathi, 2017). Notably, rural areas face an intensified version of these barriers due to their historical exclusion from infrastructure investment during and after the colonial and apartheid eras.

2.3 Social Media as a Low-Cost Market Access Tool

Social media platforms are increasingly recognised as cost-effective tools for SMMEs to promote products, engage with customers, and coordinate logistics (Kapoor et al., 2020; Chen & Tsou, 2022). Their affordability, ease of use, and potential for targeted engagement make them attractive in

resource-constrained settings. Research in township economies has shown that platforms like Facebook and WhatsApp enable micro-enterprises to bridge market information asymmetries, even in the absence of formal e-commerce portals (Bvuma & Marnewick, 2020). However, the efficacy of these digital tools remains dependent upon a suite of complementary capabilities, including data analytics proficiency, brand storytelling, and seamless integration with mobile payment systems (Kemp, 2016; Graham & De Souza, 2020). Without these, social media engagement often remains superficial, generating visibility without conversion into sales.

2.4 Socio-Cultural Dimensions of Digital Adoption

Technology adoption is not purely a technical decision; it is embedded within socio-cultural systems that can either enable or constrain its uptake (Foster & Heeks, 2015). In tightly knit rural communities, concerns about public displays of success, potential social obligations, and reputational risks may discourage visible online marketing (Baker & Lutz, 2020; Oyelana & Thakhathi, 2017). Gender norms, collective expectations, and trust dynamics further shape how entrepreneurs engage with digital platforms (Nwachukwu & Ibenne, 2021). Van Dijk and Hacker's (2003) multi-level model underscores that mere access to ICT does not guarantee meaningful use; adoption must be supported by digital literacy, cultural acceptance, and structural enablers.

Synthesis and Research Gap

Although infrastructural and financial obstacles to e-commerce are well-documented, there remains a lack of research integrating these factors with the specific socio-cultural dimensions influencing adoption in rural sub-Saharan Africa. Even less attention has been paid to peripheral municipalities such as Mbhashe, where digital participation is influenced by historical exclusion, logistical fragmentation, and nuanced cultural dynamics. This study addresses this gap by applying a hybrid theoretical lens—merging Rogers' (2003) Diffusion of Innovations theory with Sen's (1999) capability approach—to interrogate how both perceptual and structural factors converge to shape social media–driven market access for rural SMMEs.

3. Theoretical Framework

3.1 Integrating Diffusion of Innovations (DoI) and the Capability Approach

Rogers' (2003) *Diffusion of Innovations* (DoI) theory posits that the rate and extent of technology adoption are influenced by five perceived attributes: relative advantage, compatibility, complexity, trialability, and observability. This framework remains a staple in ICT adoption research, primarily because it effectively deconstructs the psychological perceptions and decision-making processes that drive individual technology uptake (Jeyaraj et al., 2006). However, critics argue that DoI under-theorises broader socio-economic inequalities, structural barriers, and power dynamics that often shape adoption outcomes in developing contexts.

To address this limitation, the present study integrates DoI with Sen's (1999) *capability approach*, which conceptualises development as the expansion of substantive freedoms—opportunities for individuals to achieve valued functionings. In the digital entrepreneurship domain, capabilities encompass more than technological access; they include digital literacy, reliable infrastructure, financial services, and supportive institutional ecosystems (Heeks & Renken, 2021). This integration enables an examination not only of perceptions about innovation attributes but also of the socio-cultural and structural "conversion factors" that mediate the translation of resources into meaningful digital participation.

3.2 The DoI–Capability Analytical Matrix

DoI Dimension	Description (Rogers, 2003)	Application to Mbhashe SMMEs	Relevant Capability Dimension (Sen, 1999)
Relative Advantage	Perceived benefits of adoption over existing practices	Social media is seen as a low-cost marketing tool with potential for expanded reach	Economic opportunity; ability to market beyond local boundaries
Compatibility	Alignment with users' values, norms, and needs	Cultural norms discourage overt self-promotion; fear of social obligations deters online visibility	Freedom from reputational risks and cultural pressures
Complexity	Perceived difficulty in use and understanding	Limited skills in managing platforms, running promotions, or interpreting analytics	Digital literacy and access to training resources

DoI Dimension	Description (Rogers, 2003)	Application to Mbhashe SMMEs	Relevant Capability Dimension (Sen, 1999)
Trialability	Opportunity to experiment before commitment	Preference for WhatsApp due to familiarity; lower uptake of newer platforms like TikTok or Instagram	Access to mobile tools, informal peer learning
Observability	Visibility of positive outcomes to peers	Few local role models in digital entrepreneurship reduce belief in benefits	Social learning opportunities; peer demonstration effects

This matrix illustrates that while DOI explains *why* certain innovations are adopted or rejected, the capability approach explains *how* personal agency and contextual constraints influence adoption trajectories. For example, even when rural entrepreneurs perceive Facebook as advantageous, a lack of strategic content skills (capability deprivation) and community disapproval of visible success (cultural constraint) may prevent meaningful use.

3.3 Conceptual Diagram

To visually represent the integrated framework, Figure 1 shows the conceptual diagram:

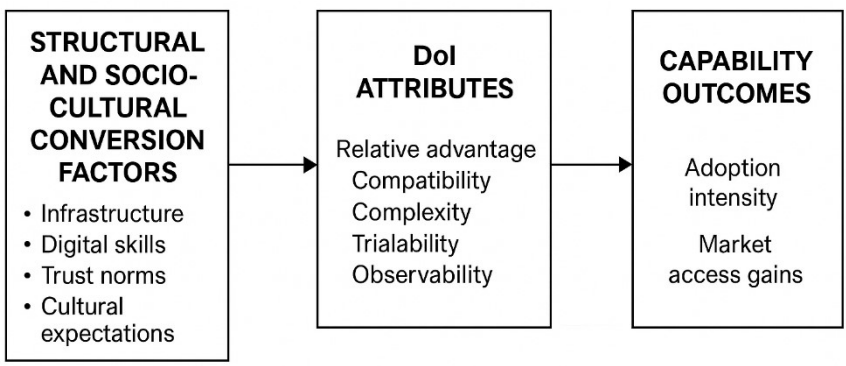


Figure 1

CONCEPTUAL FRAMEWORK

By employing this hybrid lens, the study aligns with calls for pluralist theorisation in ICT4D research (Avgerou, 2020), offering a nuanced explanation of adoption behaviours that considers both micro-level decision processes and meso-level enabling conditions.

4. Methodology

4.1 Research Design

This study adopted a **sequential explanatory mixed-methods design**, with a quantitative survey forming the primary data collection phase, followed by qualitative interviews to contextualise and interpret statistical findings (Creswell & Creswell, 2018). This design was selected to capture both the measurable patterns of social media adoption and the underlying socio-cultural factors influencing these behaviours among rural SMMEs.

4.2 Study Area

The research was conducted in **Mbhashe Local Municipality**, located in South Africa's Eastern Cape Province. The municipality comprises the towns of Dutywa, Willowvale, and Elliotdale, characterised by dispersed rural settlements, limited logistics infrastructure, and high youth unemployment exceeding 60% (Stats SA, 2024). The economy is largely driven by small-scale agricultural production, craft manufacturing, and informal retail.

4.3 Sampling Strategy

Due to the lack of a centralised registry for rural SMMEs, the study initially utilised purposive sampling to target information-rich cases that could offer deep insights into digital adoption. Selection criteria included:

1. Enterprise operation within agro-processing, construction, craft, or retail sectors.
2. Ownership or management by individuals residing in the municipality.
3. Engagement—whether active or passive—with at least one social media platform.

To broaden the sample, snowball sampling was utilised, relying on initial participants to identify and refer further qualifying enterprises from their established networks. This approach yielded a total of **47 SMMEs** for the quantitative phase.

For the qualitative phase, eight key informants were selected using purposive criteria, comprising local business association leaders, sectoral representatives, and experienced entrepreneurs. This ensured a diversity of perspectives on structural barriers, institutional support, and cultural influences on digital adoption.

4.4 Data Collection

The **quantitative survey** used a structured questionnaire comprising four sections:

1. Firm demographics (sector, size, years in operation).
2. ICT ownership and usage patterns.
3. Social media adoption intensity and perceived barriers.
4. Business performance indicators related to digital engagement.

Surveys were administered face-to-face by trained research assistants to minimise literacy-related bias.

The qualitative interviews followed a semi-structured guide exploring:

- Perceived opportunities and challenges of using social media for commerce.
- Cultural norms and community attitudes towards digital entrepreneurship.
- Recommendations for enabling inclusive digital participation.

Interviews were audio-recorded with consent, transcribed verbatim, and anonymised using codes (e.g., Firm E12).

4.5 Ethical Considerations

The study complied with the ethical guidelines of Walter Sisulu University and received institutional clearance before commencement. Prior to data collection, all participants provided informed consent after being fully apprised of the research objectives, their right to withdraw without prejudice, and the protocols established to maintain confidentiality. Data were stored in encrypted files accessible only to the research team.

4.6 Data Analysis

Quantitative data were analysed using SPSS. Descriptive statistics were used to summarise device ownership and platform usage. Pearson correlation analysis examined associations between multi-device ownership, posting frequency, and adoption of interactive platforms. Binary logistic regression was employed to assess the influence of managerial age on interactive platform adoption.

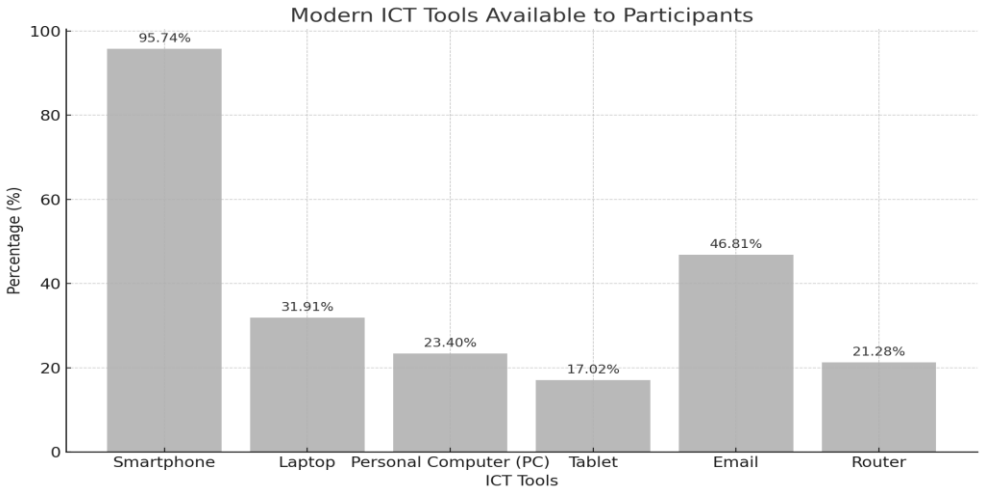
Qualitative transcripts were analysed thematically following Braun and Clarke's (2006) six-phase approach: familiarisation, coding, theme generation, theme review, theme definition, and reporting. Themes were triangulated with quantitative results to produce an integrated interpretation.

4.7 Reliability and Validity

The survey instrument was pre-tested with five SMMEs from a neighbouring municipality to assess clarity and content validity. Minor adjustments were made to wording and sequencing. Cronbach's alpha values exceeded 0.78 for all multi-item constructs, indicating acceptable internal consistency.
To enrich interpretation, eight key-informant interviews were conducted with local business-association leaders. Interviews probed infrastructural challenges, institutional support, and socio-cultural dynamics. Quantitative data were analysed using SPSS, employing descriptive statistics and Pearson correlations to examine the associations between adoption intensity and perceived benefits. Qualitative transcripts were thematically analysed following Braun and Clarke's (2006) six-step procedure to identify cross-cutting narratives.
Anonymisation codes (e.g., Firm E12) were used to protect identities.

5. Findings

5.1 ICT Tool Ownership and Functional Complementarities



Smartphones dominate as the primary device for digital engagement, with **95.7%** (n = 45) of respondents reporting ownership. In contrast, only 31.9**%** own laptops, 23.4**%** have desktop computers, and **21.3%** possess fixed broadband routers. Email access is available to 46.8**%** of participants, while tablets are owned by 17.0%.

Pearson correlation analysis revealed a moderate positive association between multi-device ownership and frequency of social media marketing activities ($r = 0.46$, $p < 0.05$). This suggests that diversified device access enhances the range and quality of digital engagement, particularly regarding content creation and platform optimisation.

Qualitative interviews reinforced this finding. While smartphones are valued for their versatility and affordability, respondents noted significant limitations for complex tasks such as high-quality video editing and product catalogue design—functions that are increasingly critical for achieving algorithm-driven visibility (Kaplan & Haenlein, 2023).

5.2 Social Media Platform Adoption Patterns

Social media type	Frequency	Percentage
WhatsApp	45	95,74
Facebook	43	91,49
Twitter	12	25,53
Instagram	5	10,64
Snap chat	2	4.26
Tik Tok	7	14,89

Table 2: Various social media platforms participants have access to.

As shown in Table 2, WhatsApp (95.7%) and Facebook (91.5%) are the dominant platforms. Adoption of interactive or emerging platforms is more limited: TikTok (14.9%), Twitter (25.5%), Instagram (10.6%), and Snapchat (4.3%).

Logistic regression analysis indicated that enterprises managed by individuals under 35 years were 3.2 times more likely to adopt interactive platforms such as TikTok and Instagram ($p < 0.01$). This generational effect aligns with the DoI concept of *compatibility*, as younger managers often perceive newer platforms as more relevant to their marketing goals.

However, both quantitative and qualitative evidence revealed that high registration rates do not necessarily translate into commercial transactions. Absent payment-gateway integration and reliable last-mile delivery options, visibility rarely converts to sales—echoing Bvuma and Marnewick's (2020) assertion that marketing efficacy depends on complementary fulfilment capabilities.

5.3 Business Profiling and Engagement Practices

The study explores how participants use social media for business profiling, with a specific focus on platform selection and the pervasive barriers hindering digital marketing engagement. Social media profiling allows businesses to interact directly with consumers, increase brand awareness, and tap into new market segments (Ainin et al., 2015; Mangold & Faulds, 2009). Table 3 presents the findings:

Statement	**Frequency**	**Percentage**
I post something about my business activities daily on one of my social media platforms	2	5,0
I post something about my business activities at least once a month on one of my social media platforms.	3	7.5
I post something about my business activities at least once a month, for more than a month, on one of my social media platforms.	3	7.5
I do not post anything about my business activities on my social media.	40	85,11
Reasons for not profiling business activities on social media.		
Common themes	Frequency	Percentage
Friends and family members may think I have money and ask me for money.	20	55
People know my business already.	13	32,50
I do not see a point.	7	17,50

Table 3: Frequency of profiling business activities on various social media platforms and reasons for not profiling.

A striking **85.1%** of respondents reported rarely or never posting business-related content on their social media accounts. Only **5.0%** post daily, and **15%** post at least monthly.

When asked why they do not profile their businesses online, **55%** cited fears that visible success could trigger financial requests from family or community members; **32.5%** felt that "people already know my business"; and **17.5%** did not see any benefit in posting.

These findings illustrate the interplay of *compatibility* and *observability* within the DoI–capability framework. Even when relative advantage is acknowledged, socio-cultural conversion factors—such as norms

discouraging self-promotion—reduce adoption intensity. As one entrepreneur (Firm W07) explained:

> If people see your profits, they expect you to sponsor funerals. It's safer to stay quiet.

Furthermore, only **17%** of enterprises reported using platform analytics to guide content strategy, highlighting a gap in data-driven marketing capabilities.

5.4 Towards a "Partial Adoption Equilibrium"

The integrated analysis reveals a "partial adoption equilibrium" in which device ownership and platform registration coexist with minimal strategic use. Although entrepreneurs anticipate a 28% increase in sales through online marketing, the perceived complexity of content creation and logistical risks render sustained digital investment unfeasible.
Observability is also limited: few local enterprises have demonstrated tangible success through social media commerce, creating a feedback loop of scepticism and low engagement. This aligns with the capability approach's emphasis on *social learning freedoms*—without visible role models, the perceived benefits remain abstract and unconvincing.

6. Discussion

This study examined how rural SMMEs in the Mbhashe Local Municipality use social media to improve market access. The results reveal a paradox: while device ownership and registration are high, strategic business engagement remains minimal. The findings confirm and extend existing scholarship in three key ways.

6.1 Interplay of Infrastructure, Capability, and Perception

Consistent with ITU (2022) and Gillwald et al. (2018), the data underscore that infrastructural access—while necessary—is insufficient for meaningful participation in the digital economy. In the present study, 95.7% of enterprises owned smartphones, yet the limited adoption of laptops, broadband routers, and advanced content production tools constrained their ability to fully exploit the affordances of visual and interactive platforms. This resonates with Van Dijk and Hacker's (2003)

multi-level model, where "material access" is only the first of several adoption layers.

From a DoI–capability perspective, these patterns reveal that *relative advantage* is acknowledged—entrepreneurs perceive potential sales increases of up to 28%—but capability deficits in content creation, analytics use, and logistics integration attenuate adoption intensity. These results parallel findings from Graham and De Souza (2020), who show that marketing visibility must be matched with transaction and fulfilment capacity to generate tangible commercial gains.

6.2 Socio-Cultural Conversion Factors as Hidden Barriers

The study also advances understanding of *compatibility* and *observability* within rural digital adoption. Apprehension regarding community financial expectations, reputational risk, and security concerns surfaced as substantial deterrents to visible online self-promotion among participants. This aligns with Oyelana and Thakhathi's (2017) observations in the Eastern Cape, as well as Baker and Lutz's (2020) broader argument that cultural norms can create "invisible ceilings" to entrepreneurial expression. The low *observability* of successful local e-commerce role models further entrenches scepticism, limiting the diffusion of effective practices. In capability terms, this represents a deprivation of *social learning freedoms*—without visible peers demonstrating viable pathways, entrepreneurs have fewer reference points to justify sustained digital engagement.

6.3 Generational Effects and Platform Diversification

The finding that managers under 35 years are more than three times as likely to adopt interactive platforms like TikTok and Instagram reflects the generational alignment of *compatibility* perceptions. Comparable trends have been observed in Indonesia (Rahaya & Day, 2016) and South African township environments (Bvuma & Marnewick, 2020), where younger entrepreneurs demonstrate heightened platform experimentation and agility in adopting nascent digital marketing tools. However, without structured mentorship and resource-sharing mechanisms, these generational advantages remain individual rather than systemic assets.

6.4 Policy Implications: From Connectivity to Capability

The evidence suggests that policy interventions should move beyond the narrow goal of improving connectivity to address the structural, cultural, and strategic dimensions of digital participation. Building on the study's findings, three interlinked recommendations are advanced:

1. **Rural Digital Hubs** – Establish multi-stakeholder facilities in municipalities such as Mbhashe, equipped with co-working spaces, product photography studios, high-speed internet, and mentorship programmes. These hubs should operate as both technical and social learning spaces, fostering peer role-modelling to enhance *observability*.
2. **Mobile-Based Micro-Learning Programmes** – Deploy modular, low-data training courses on content creation, brand storytelling, analytics interpretation, and basic e-commerce integration. Leveraging platforms such as WhatsApp for delivery could effectively bypass broadband limitations while simultaneously appealing to the preferences of younger, mobile-first entrepreneurs.
3. **Last-Mile Logistics Alliances** – Incentivise courier companies to create local collection and delivery points in rural areas through tax rebates or public–private partnerships. Strengthening fulfilment capacity addresses the *relative advantage–capability gap*, ensuring that digital visibility can translate into completed transactions.

These measures collectively align with Sustainable Development Goal 8 (decent work and economic growth) and the African Union's Digital Transformation Strategy while being grounded in the specific cultural and infrastructural realities of rural South Africa.

7. Conclusion and Policy Implications

This study provides a nuanced understanding of how rural SMMEs in the Mbhashe Local Municipality engage with social media for market access, demonstrating that digital adoption is shaped by a complex interplay of infrastructural, capability, and socio-cultural factors. While mobile device penetration and platform registration are high, strategic utilisation remains limited, producing what this paper terms a partial adoption equilibrium. The integration of Rogers' Diffusion of Innovations theory with Sen's capability approach offered a hybrid lens that illuminated how *relative advantage* is often moderated by capability deficits and cultural constraints.

The study advances digital inclusion scholarship by prioritising the socio-cultural dimensions of e-commerce adoption—elements that remain notably underexplored within the South African rural context. The policy recommendations advanced here—rural digital hubs, mobile micro-learning, and last-mile logistics alliances—are designed to address not only technological access but also the skill and trust deficits that hinder meaningful digital participation.

By situating rural SMMEs' adoption behaviours within both technological and socio-cultural contexts, this research underscores that digital transformation strategies must be holistic, addressing the "last mile" challenges in infrastructure, capability development, and cultural acceptance.

8. Limitations and Future Research

The study's sample size and focus on a single municipality limit the generalisability of its findings to other rural contexts. Although purposive and snowball sampling enabled the inclusion of diverse sectors, the absence of random sampling constrains statistical representativeness. Future research could employ larger, multi-site samples to enhance external validity.

Additionally, the study's cross-sectional design captures adoption patterns at a single point in time. Utilising longitudinal designs could yield more profound insights into adoption trajectories, facilitating the identification of causal relationships between the development of capabilities and subsequent commercial outcomes.

Finally, while socio-cultural factors were explored qualitatively, future studies could operationalise and measure these variables quantitatively**,** enabling statistical modelling of their effects alongside infrastructural and capability-related determinants. Such research would advance both theoretical understanding and practical policymaking in digital inclusion.

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Appendix A: Logistic Regression Output

Table A1: Logistic Regression Predicting Adoption of Interactive Social Media Platforms by Manager Age

Predictor Variable	B	SE	Wald	df	p-value	Odds Ratio (Exp(B))	95% CI for Exp(B)
Manager Age < 35 (1 = Yes)	1.163	0.422	7.598	1	0.006	3.20	[1.40, 7.30]
Constant	-1.204	0.385	9.766	1	0.002	0.30	[0.14, 0.62]

Note: Dependent variable = Adoption of Interactive Platforms (e.g., TikTok, Instagram); coded as 1 = yes, 0 = no. $p < .01$

Appendix B: Pearson Correlation Matrix

Table B1: Pearson Correlations Among Key Variables (N = 47)

Variable	1	2	3	4
1. Multi-Device Ownership (MDO)	—	.46	.34	-.25
2. Posting Frequency (PF)	.46	—	.52	-.30
3. Adoption of Interactive Platforms (IPA)	.34	.52	—	-.55
4. Manager Age < 35 (Age35)	-.25	-.30	-.55	—

Note. $p < .05$; $p < .01$. Diagonal entries are dashes (—) by definition.