

# From Exclusion to Empowerment: Rethinking Digital Transformation for Women Entrepreneurs

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## ABSTRACT

This study examines how digital transformation shapes women entrepreneurs' movement from exclusion to empowerment within Nigeria's evolving enterprise landscape. Guided by Affordance Theory and a Critical Realist philosophical assumption, it explores how digital technologies such as social media, mobile payments, and online marketplaces create possibilities that are only realized under specific atmosphere and institutional conditions. Using a qualitative multiple-case study design, thirteen (N = 13) women entrepreneurs were purposively selected across diverse sectors and settings. Data were collected through semi-structured open-ended questions and analyzed through inductive coding, axial theming, and retroductive reasoning to uncover the generative mechanisms linking context, affordance perception, and empowerment outcomes. Findings reveal a stratified pattern of empowerment shaped by both enabling and constraining mechanisms. Working-capital scarcity and infrastructure unreliability function as structural bottlenecks that limit the actualization of digital affordances, while peer-based learning, training, and networked visibility mediate these constraints. Algorithmic opacity and inconsistent platform governance emerged as hidden structures reinforcing unequal visibility and dependence on paid promotion. Where enabling conditions aligned finance, connectivity, and institutional support women experienced tangible empowerment outcomes such as increased market reach, confidence, and decision autonomy. The study contributes by demonstrating that digital affordances are not self-actualizing; they operate through layered mechanisms embedded in economic, technological, and socio-cultural structures. Empirically, it offers contextual evidence of how women exercise agency within and against these constraints. Practically, it recommends blended finance for working capital and data costs, peer-driven digital training, and transparent platform governance to translate digital access into durable empowerment.

**Keywords:** Women Entrepreneurs; Digital Transformation; Affordance Theory; Empowerment; Inclusion; Nigeria.

## INTRODUCTION

Digital technologies platform marketplaces, mobile money, social media marketing, and remote learning are regularly framed as democratizing forces for entrepreneurship (Kraus et al., 2018; Obschonka & Audretsch, 2019). Yet emerging evidence documents that women entrepreneurs often fail to reap the full benefits of digitalization: disparities persist in revenue growth, market reach, (Ughetto et al., 2019) access to finance, and sustainable scaling (McAdam et al., 2020). Increasingly, scholars contend that access to technology by itself is insufficient for inclusion; instead, a conversion problem exists digital affordances become empowerment only when mediated by enabling structures and individual/collective agency (Majchrzak, 2012)

In recent years, digital transformation's role in empowering women entrepreneurs, specifically in Sub-Saharan Africa, has gained increasing attention. The connection between entrepreneurship and digital technologies presented several paths for fostering empowerment among women who traditionally have been marginalized in the economic landscape. Women constitute an important part of the entrepreneurial system within this region (Sub-Saharan Africa), yet they face various issues ranging from limited access to finance to societal norms that

constrain their economic participation (Mulu et al., 2021). Transformative digital technologies can influence considerable changes in this context by providing women with the necessary tools to overcome the multifaceted challenges they encounter.

In the realm of entrepreneurship, women are seriously underrepresented in Sub-Saharan Africa. This has often been linked to the systemic socio-economic barriers and cultural expectations that give precedence to traditional roles and expectations over entrepreneurial endeavors (Al-Dajani et al., 2015). To overcome these barriers, there must be an understanding that implementing digital tools and platforms can empower women with improved access to resources, information, and networks that are required for fruitful entrepreneurship (Mulu et al., 2021; Peter & Orser, 2024). These digital solutions will help facilitate market access as well as enhance visibility for women entrepreneurs, thus ensuring that they contribute to their overall economic empowerment (Peter & Orser, 2024).

This research adopts a qualitative design to explore the experiences of women entrepreneurs in Sub-Saharan Africa as they navigate the domain of digital transformation. Using semi-structured questionnaires, this study aims at gathering rich and contextual data that reflects their unique perspectives on empowerment through digital engagement. It is envisaged that the thematic analysis of the collected data will enlighten the ways in which digital transformation can foster inclusion, thus allowing women entrepreneurs to overcome the limitations and meaningfully contribute to economic development.

### **Research objectives and contribution**

This study pursues three objectives:

1. Theoretically: Clarify how digital affordances interact with enabling structures and agency to produce inclusion or exclusion for women entrepreneurs.
2. Empirically: Provide a rigorous qualitative multiple-study design (n=13 women entrepreneurs), ready-to-deploy instruments, and an analytic pipeline to test pathways from affordance to empowerment.
3. Practically: Offer evidence-informed recommendations for platforms, intermediaries, and policymakers focused on converting access into sustained empowerment.

## **LITERATURE REVIEW**

Digital transformation is increasingly reshaping global business landscapes, offering significant opportunities for women entrepreneurs to overcome traditional barriers (Group., 2022). Despite these potential benefits, women often face challenges in accessing and leveraging digital tools effectively (Canton, 2021). Addressing these disparities is crucial for fostering inclusive economic growth and empowerment (Kiril, 2020).

Literature on women's entrepreneurship has observed substantial growth in both quantity and scope, especially in the context of Sub-Saharan Africa. This growth is attributed to an increased appreciation of the issues faced by women entrepreneurs in emerging economies. This has prompted researchers to advocate for a deeper understanding of socio-economic and cultural factors that influence female entrepreneurship (Henry et al., 2015; Woldesenbet et al., 2024). Comprehensive studies highlight the importance of context in entrepreneurship, especially in regard to how different socio-cultural and economic environments shape women's experiences in business (Langevang & Gough, 2012).

### **Affordance theory, empowerment, and feminist perspectives**

Affordance theory (Gibson, 2014) has been adapted in Information Systems (IS) to explain how technological properties enable potential actions but also require social and organizational contexts for actualization (Majchrzak, 2012). For women entrepreneurs, affordances such as remote market access, low-cost marketing or mobile payments are opportunities that only become empowering when perceived and leveraged contingent on training, legitimacy, and institutional supports.

Cyber-feminist scholarship and digital justice frameworks complicate simplistic technology-as-solution narratives by foregrounding power structures, data sovereignty, and design choices that can reproduce inequalities (Consalvo, 2012) (McAdam et al., 2020) (Floridi, 2018). Combining affordance theory with feminist and institutional lenses allows us to examine both individual-level agency and meso-level structural enablers.

In summary, literature seems to suggest that a holistic approach is required in relation to women's entrepreneurship. This approach must take into consideration digital transformation as a multifaceted tool for empowerment. It should also encompass policies that are supportive, educational initiatives, and a balanced understanding of socio-cultural context which defines women's entrepreneurial experiences. This study believes that this will be essential in reshaping the narrative around women entrepreneurs from exclusion to empowerment through digital transformation.

## METHOD

We employed purposive, maximum-variation sampling to capture heterogeneity in sector, technology intensity, years in business, and urbanicity. Thirteen (N=13) women entrepreneurs met inclusion criteria (owner/manager; revenue-generating enterprise; used at least one digital tool for business in the past 12 months).

Data were collected with a semi-structured questionnaire covering business profile; digital tools and affordances; outcomes; barriers and constraints; supports and networks; platform governance and automation; agency and strategies; and recommendations. The instrument underwent expert review and light piloting for content clarity. The complete instrument (column-labeled items) is reproduced in Appendix A.

For analysis, we combined inductive open coding with axial theming into Barriers, Enablers, and Empowerment Outcomes. We then used retroductive reasoning a Critical Realist strategy to articulate plausible mechanisms linking contextual conditions (e.g., capital, power/data, norms) to affordance perception, action, and outcomes. Cross-case pattern matching assessed regularities and divergences. Credibility was strengthened via a second-pass consistency check and theme summaries validated against the raw responses. Code counts inform salience but do not substitute for explanation; interpretive priority is given to mechanistic links supported by situated quotations.

## RESULTS

We present findings as interlinked mechanisms rather than isolated themes. Across the 13 cases, digital tools were widely used (WhatsApp/Instagram/Facebook predominated), but benefits were contingent on capital, connectivity, and platform governance. Below, we trace how barriers and enablers interact to shape empowerment outcomes.

1. Finance → Infrastructure → Visibility Working-capital scarcity constrained inventory, ad spend, and utilities (data/power), which in turn limited algorithmic visibility and conversion. Finance thus acts as an upstream bottleneck that propagates into weaker online presence. "More women centered support in terms of startup funds and structural support." "8. I have used a lot of online/offline classes on marketing, finance and content creation to build my business. And I have also formed good relationships with other vendors..."
2. Infrastructure Reliability as a Gatekeeper Unreliable electricity and mobile data interrupted service delivery and customer engagement, diluting returns from otherwise effective social commerce tactics. Women adapted by batching uploads, using generators when feasible, or shifting to lower-bandwidth channels; nonetheless, outages repeatedly broke sales flows. "Yes Facebook gives me the most leverage as I have a supportive network there." "Yes, some include platforms payment and also network issues."
3. Trust, Safety, and Transaction Risk Fear of fraud and low trust in dispute mechanisms suppressed uptake of online payments and cross-city sales. These perceptions reduced willingness to experiment with features like prepayment or deliveries beyond known networks. "6. Challenges will include time to be posting regularly. 7.

My account was hacked/suspended.” “Some of the challenges I face include the cost of constant internet data, which is high and affects how often I can post or engage customers online. Time management is also a...”

4. Training and Peer Know-how Convert Features into Practice Where women accessed practical guidance often informally through peer’s platform features translated into sales (better product photography, timing of posts, customer messaging scripts). Training mitigated fear and helped substitute organic tactics for paid ads when budgets were tight. “There should be discounts on those training cause not every can afford even if they know how valuable it is” “Some trainings did help and some social media platforms.”

5. Platform Visibility and Governance Participants perceived that paid promotion improved reach, yet the rules of visibility (ranking, verification, occasional suspensions) were opaque. This opacity made outcomes feel contingent on factors beyond effort, especially for those unable to finance consistent ads. “WhatsApp, Instagram and Facebook for marketing and sales. *Invoice* bookkeeping app to track orders and payments” “WhatsApp communities”

6. Suspensions, Verification, and Appeals A subset reported account challenges (verification hurdles, content takedowns, or brief suspensions), with limited guidance for appeal. Such events had disproportionate impact on small inventories and time-sensitive sales. “Social media and local (home), I advertise on WhatsApp to be precise and payments are wired through bank” “It’s hard to locate customers that find what i sell valuable enough for the price am giving (calculated price), i have never experience account suspension.”

7. Conditional Empowerment Outcomes When affordances were supported—capital for stock and data, reliable power, minimal governance friction women reported greater visibility, steadier sales, and confidence engaging new markets. Where support was absent, outcomes plateaued despite high effort. “Sunshine basket Nigeria, online grocery store, 4-year-old, main customers are those who want farm fresh produce at great prices.” “WhatsApp, Instagram and Facebook for marketing and sales. *Invoice* bookkeeping app to track orders and payments”

8. Cross-Case Mechanism Recurring mechanism: (M1) Working-capital scarcity → (Bottleneck) Low ad/infra spend → (Effect) Limited algorithmic visibility & intermittent engagement → (Outcome) Lower conversion. Mitigators: (E1) training + peer know-how for organic reach; (E2) low platform friction (verification in place; no suspensions). *Mitigators*: (E1) training + peer know-how for organic reach; (E2) low platform friction (verification in place; no suspensions).

Table 1:Participant business profiles (self-described)

| ID  | Business profile (self-described)                                                                                                              |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------|
| P01 | Sunshine basket Nigeria, online grocery store, 4-year-old, main customers are those who want farm fresh produce at great prices.               |
| P02 | I sell kitchen and home items, been doing that for almost a decade and my customers are mostly women                                           |
| P03 | I own a chemist and sell skincare products. I have been operating for 5 years. Both men, women and children                                    |
| P04 | Food and drink                                                                                                                                 |
| P05 | I sell Beauty/Makeup products. 5 years and counting in a product-based business. My target customers are upcoming Makeup artists and beauty... |
| P06 | I sell cakes and I make them from home and my customers are basically anyone who has a celebration - birthdays, weddings, anniversaries ,...   |

|     |                                                                                                                                               |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------|
| P07 | I'm a retailer of Garnier, Loris and Avon products. I have been selling since 2011, but registered my business in 2021. My customers are...   |
| P08 | "Elle's Beauty Hub is a perfume business that sells high-quality designer oil perfumes, Arabian oud, and custom fragrance blends. We...       |
| P09 | We sell skincare. Operating over a year, our customers are individuals with skin problems that need skin solutions                            |
| P10 | We are into value added argic products                                                                                                        |
| P11 | My business involves marketing and sales of household items such as food warmers, coolers, etc. My customers are residents of Yola and its... |
| P12 | Am into outdoor events especially for kids. I organize birthday parties for kids, giving them a colorful birthday making their dreams of...   |
| P13 | I sale cooperate shoes for women                                                                                                              |

Table 2:Salience by theme (number of participants mentioning theme)

| Theme                                    | Participants mentioning (N=13) |
|------------------------------------------|--------------------------------|
| Platforms/Visibility/Ads                 | 12                             |
| Outcomes/Empowerment                     | 11                             |
| Training/Know-how/Peer Support           | 8                              |
| Payments/Logistics                       | 7                              |
| Infrastructure (Power/Data/Connectivity) | 5                              |
| Finance/Working Capital                  | 3                              |
| Governance/Suspension/Verification       | 3                              |
| Trust/Safety/Fraud                       | 2                              |

## DISCUSSION

These findings within a stratified ontology where events, mechanisms, and deep structures interact are observable events missed sales, unstable connectivity, and fluctuating online visibility belong to the empirical layer. Beneath them lie causal mechanisms such as capital scarcity, infrastructural fragility, and algorithmic control, which generate or constrain these experiences. At the deep structural level, the political economy of digital platforms and utilities determines who can consistently convert digital participation into economic empowerment.

Within this layered reality, affordances low-cost marketing, instant messaging, and mobile payments represent real possibilities that do not automatically translate into outcomes. Their actualization depends on the interplay of three enabling conditions: material resources, infrastructural stability, and interpretive capability. Where these align, women translate digital features into economic visibility and confidence; where they fracture, affordances remain latent.



While a feminist reading exposes how these mechanisms reproduce existing hierarchies. Platform visibility is governed by opaque algorithms that reward liquidity and paid promotion, embedding gendered disadvantage within digital architectures. The invisible labor of maintaining online presence photography, engagement, content curation extends women's unpaid work into the digital realm, blurring entrepreneurial autonomy with constant availability. Yet, through reflexive agency, many participants negotiate these asymmetries by leveraging peer networks and local trust systems to sustain participation despite structural exclusions.

Empirically, the study reaffirms that digital empowerment is conditional, not universal. It arises when social and material support enable women to act upon technological affordances within constraining contexts. Conceptually, this reinforces a Critical Realist-Feminist synthesis: empowerment emerges through the partial activation of real but contingent affordances embedded in unequal structures.

Practically, three mechanisms warrant targeted intervention:

1. Financial and infrastructural reinforcement blended capital and stable utilities to sustain online activity;
2. Situated learning ecosystems peer-driven training that transforms potential affordances into capability;
3. Platform accountability transparent governance of algorithms, verification, and dispute resolution.

Together, these measures strengthen the conversion of digital access into actualized empowerment, moving from technological inclusion to structural transformation.

## Contributions

Conceptual: mechanism-based account of how digital affordances convert to empowerment under Nigerian conditions.

- Empirical: pilot, context-rich evidence with transparent instrument and salience counts (Table 2) to support replication and scale-up.
- Practical: finance–infrastructure–governance levers and peer-centered training to improve conversion of access into outcomes.

## Limitations

Small, purposive sample (N=13) limits generalizability. Self-reported data introduce recall/desirability bias. Platform processes (ranking, down-ranking, fee changes) were not directly observed; inferences rely on consistent patterns in accounts. Electricity and data costs are location-specific. These motivate a preregistered next wave and mixed-methods extensions.

## CONCLUSION

This study examined the digital transformation experiences of women entrepreneurs in Sub-Saharan Africa, highlighting both the barriers that perpetuate exclusion and the enablers that foster empowerment. The findings demonstrate that while digital platforms and training opportunities hold significant potential, their impact is mediated by finance, infrastructure, and socio-cultural norms. By applying Affordance Theory, the study advances theoretical understanding of how digital resources are differentially actualized in marginalized contexts. Empirically, it provides evidence of the interplay between exclusionary structures and empowering affordances in women's entrepreneurship. Practically, it emphasizes the urgency of affordable infrastructure, inclusive training, and supportive policies to translate digital transformation into genuine empowerment. In conclusion, moving from exclusion to empowerment requires not only technological innovation but also structural change that acknowledges and addresses the layered realities of women entrepreneurs in the Nigeria.

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## Ethical Considerations and Approval

This study was conducted in full compliance with established ethical standards for research involving human participants. Ethical approval was obtained from the Institutional Review Board of the American University of Nigeria; after undergoing the ethical certification review with the certificates number Record ID 3185315 and Record ID 37009720 and informed consent was secured from all participants prior to data collection.

## Conflict of Interest

The authors declare that there are no conflicts of interest, financial or otherwise, that could have influenced the conduct or outcomes of this research.

## Data Set Availability

The datasets generated and analyzed during the current study are available and will be made available when needed.

## Appendix A. Semi-Structured Questionnaire

1. Section 1 — Background 1. Tell me briefly about your business: what you sell/provide, how long you have been operating, who your customers are.

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2. Section 2 — Digital tools & affordances 2. Which digital tools do you use for your business? (prompt: social media, marketplaces, messaging, mobile money). 3. For each, describe how you use it (marketing, sales, payments, sourcing). Can you give a recent concrete example?
3. Section 3 — Outcomes 4. How have these tools affected your sales, customers, or costs? Can you show or describe any evidence? 5. Have you seen any changes in who buys from you or how often?
4. Section 4 — Barriers & constraints 6. What challenges do you face when using these tools? (skills, cost, time, family duties, platform fees). 7. Have you experienced any unfair treatment online (e.g., harassment, account suspension)? How was it resolved?
5. Section 5 — Supports & networks 8. What training, finance, mentorship, or networks have helped you? Which were most useful? Which were missing? 9. Are you part of groups, cooperatives, or peer networks that support your use of digital tools?
6. Section 6 — Platform governance & automation 10. Do you understand how platform algorithms affect visibility? Have you experienced automatic decisions that impacted your business (ranking, suspension)? Describe.
7. Section 7 — Agency & strategies 11. What strategies or adaptations have you used to grow online despite barriers? (hours, family support, side jobs). 12. Have you collaborated with other women entrepreneurs? What worked?
8. Section 8 — Recommendations 13. If you could change one thing about platforms, training, or policy to help women succeed, what would it be?
9. Closing: Thank you. Is there anything else you want to add? Would you be willing to be contacted for follow-up clarification?