# Introduction

Africa boasts the highest growth rate of women entrepreneurs globally, contributing approximately 13% to the continent's gross domestic product (Harvard University, Women and the Changing Face of Entrepreneurship in Africa Conference, 2020). In 2007, Safaricom, one of Kenya’s leading telecommunications companies, launched M-Pesa, a mobile money service that rapidly achieved monumental success and became a major influence in the mobile money arena. With "M" signifying mobile and "Pesa" translating to money in Swahili, M-Pesa became widely used throughout Kenya, marking it as the first mobile money operator to reach widespread adoption (Lepoutre & Oguntoye, 2018; Hughes & Lonie, 2007).

It is widely reported that M-PESA and mobile money services are transforming the livelihoods of women entrepreneurs. For instance, mobile money services have been associated with various benefits such as greater shock-resilience, poverty alleviation, and promoting women’s empowerment, particularly by increasing investments in women-owned enterprises and reducing extreme poverty (International Growth Centre, 2022). Similarly, the practitioner and policy communities—including NGOs, donors, think tanks, and international development organizations—acknowledge the positive impacts of mobile money on closing the gender gap in financial access (World Economic Forum, 2016; UN Women, 2022). Significant funding continues to flow into this sector, underscored by various UN projects which emphasize gender-responsive financial inclusion models that are crucial for sustainable and inclusive growth (UN Women, 2022).

However, challenges persist in distinguishing between formal and informal sectors within these economic impacts. For example, despite the general success of mobile money, there are documented instances where outcomes have not met expectations. This includes areas where the anticipated transformation in women's economic status through mobile money has been less pronounced, often due to lower access to mobile phones, literacy levels, and socio-cultural barriers that still limit women’s full participation in mobile money services (Africa Renewal, 2022).

### Academically, its hard to know because the topic is so interdisciplinary and silo’d

To fully understand the impact of mobile money (MM), particularly on specific demographics such as women entrepreneurs, it is necessary to synthesize insights across multiple disciplines. Scholars in international development, for instance, contribute nuanced understandings of socio-economic impacts, highlighting how mobile money facilitates household welfare improvements, increased savings, and business development in Sub-Saharan Africa (Koomson, Villano, & Hadley, 2020). Political economists often focus on the macroeconomic implications of mobile money, examining how its adoption affects monetary aggregates, consumer price indices, and private-sector credit growth (Macha & Muli, 2020; Van Hove & Dubus, 2019). Contributions from technology and ICT-focused journals typically elucidate the technical advancements and challenges associated with mobile money platforms, including their role in transforming unemployed women into self-employed entrepreneurs (Asongu & le Roux, 2021). Feminist scholars and those working within feminist economics provide critical analyses on gender dynamics and empowerment, exploring how mobile money adoption contributes to women’s economic empowerment and how financial management practices mediate this relationship (Heath & Riley, 2024).

Although these diverse viewpoints are invaluable, the compartmentalization of research into distinct disciplinary silos often poses significant challenges for practitioners and policymakers attempting to integrate these insights into cohesive strategies or case studies.

Much of the existing research on mobile money and entrepreneurship focuses on formal enterprises or macro-level institutional frameworks, often overlooking the experiences of informal entrepreneurs—such as women selling vegetables by the roadside or running small, unregistered businesses from their homes (Asongu & le Roux, 2021; GSMA, 2020). My interest lies in this everyday, informal entrepreneurship, where mobile money can serve as both a financial tool and an entry point to broader economic participation (GSMA, 2020). However, there remains an indistinct boundary between what is considered formal and informal entrepreneurship in both practice and research. Many small-scale businesses operate in hybrid spaces, blending informal practices with formal mechanisms, such as using mobile money for transactions without formal business registration (Research Square, 2023). Yet, much of the literature tends to privilege formally registered enterprises or those more easily captured by official data (Research Square, 2023). [concluding sentence needed]

## 2. Methods

Trying to understand the magnitude of the research that’s been done. To ensure a limited scope, we focused on Individuals not institutions

Our approach hopes to close this gap via a bibliometric MAPPING of all the literature across this field, focusing on identifying relevant disciplinary silos and emerging research themes

### 2.1 – Core Frameworks

Our study is grounded in various academic frameworks suitable for dissecting the interplay between mobile money, women entrepreneurs, and East Africa. A key framework is the Development Finance Institution (DFI) model, which aligns with our study's practical development goals by emphasizing strategies that directly impact economic growth and women's entrepreneurship in the region. This framework’s relevance is supported by its focus on creating sustainable livelihoods and boosting economic growth through enhanced access to finance for women, coupled with support networks that foster female entrepreneurial activity and productivity (UN Women, 2022; International Finance Corporation [IFC], 2023; Massa, 2013).

Furthermore, our research draws on insights from Science and Technology Studies (STS), which provide critical perspectives on the technological dimensions of mobile money. STS frameworks help us examine how technological systems are socially constructed and how power dynamics influence the design, adoption, and use of digital financial services (Latour, 2005; Wajcman, 2004; Oudshoorn & Pinch, 2003). These perspectives are essential for understanding the socio-technical complexities that shape women's access to, and control over, mobile money technologies in East Africa.

Additionally, we integrate the Gender and Development (GAD) framework, which offers a nuanced understanding of the socio-economic barriers women face and the systemic changes required to achieve gender equity in entrepreneurship. GAD shifts the focus from viewing women as passive recipients of development to active agents of change and emphasizes the importance of addressing structural inequalities (Kabeer, 1994; Razavi & Miller, 1995; Pearson, 2005). This framework’s focus on transforming gender roles and dynamics makes it invaluable for assessing how mobile money technologies can be leveraged to empower women economically.

However, it is important to note that a bibliographic mapping is different to a systematic review in that it is not grounded in a single approach. Instead, our methodological approach is designed to map what approaches have been used, enabling the identification of new interdisciplinary themes that may not yet be covered by existing frameworks. This flexibility ensures that our study can evolve in response to emerging trends and insights in the field.

## methods

3.1 – Overview of Approach

This study was…..

* Stage 1 – Gather Data (section 3.2)
* Stage 2 – Initial Screen (section 3.3)
* Stage 3 – Detailed Screen (section 3.4)

3.2 – Data Collection

The foundation of this systematic mapping involved a comprehensive search to capture literature addressing the role of mobile technology in female entrepreneurship within East Africa.

Based on the frameworks above, utilizing the Web of Science database, the search strategy was structured around four primary themes: Mobile Money, Geographic Location/Population, Entrepreneurship, and Gender.

Formally, we first applied a PRISMA based systematic review framework to search three major databases as follows:

* **Mobile Money (MM)**: Terms included "Mobile Money," "Mobile-Money," "MPESA," "M PESA," "Digital," "Technology," and variations of "phone\*" to ensure comprehensive retrieval of relevant technology-oriented resources.
* **Place/Population**: Geographic terms targeted not only specific countries such as "Kenya," "Somalia," "Uganda," "Rwanda," "Ethiopia," "Sudan," but also broader regions like "Africa\*," "Horn of Africa," "Tanzania," and conceptual terms like "Global poor," "Global South," "Global-poor," "Global-South," "unbanked" to capture studies conducted in or applicable to these contexts.
* **Entrepreneurship**: This facet of the query included "Entrepreneur\*," "Business," "growth," "Economic," "Finance," "Banking," "microfinance" to fetch documents that discuss business activities and economic factors influencing entrepreneurship.
* **Gender**: Focused on capturing gender-specific aspects, terms such as "Women," "gender," "Female" were used.

The final query was formulated as follows:

TS=(("Mobile Money" OR "Mobile-Money" OR "MPESA" OR "M PESA" OR "Digital" OR "Technology" OR "phone\*") AND ("Africa\*" OR "Kenya" OR "Somalia" OR "Uganda" OR "Rwanda" OR "Ethiopia" OR "Sudan" OR "Horn of Africa" OR "Tanzania" OR "Global poor" OR "Global South" OR "Global-poor" OR "Global-South" OR "unbanked") AND ("Entrepreneur\*" OR "Business" OR "growth" OR "Economic" OR "Finance" OR "Banking" OR "microfinance") AND ("Women" OR "gender" OR "Female"))

This search strategy successfully retrieved 1042 papers, which were then subjected to the initial screening process outlined in Section 3.3.

3.3 – Initial Screening Process

The initial screening process was designed to identify the most relevant studies for inclusion in the systematic map. This phase utilized a modified R-Shiny application, tailored specifically for this research to systematically evaluate titles and abstracts of retrieved papers.

Based on the theoretical frameworks above a comprehensive list of keywords was developed. These keywords, essential for the identification of relevant literature, were applied to the titles and abstracts. The keyword list was dynamic, evolving through the screening process to incorporate new terms identified.

We categorized into two families

* “not key’/discard: Papers that used the concepts, but were not specially on topic. E.g. agricultural credit papers where the focus was on the impact of debt/credit, rather than mobile-money/financial technologies.
* ‘key’/to keep: If it talked about gender AND
  + (a financial technology of some sort OR mobile-finance specifically )

We also tagged emerging themes.

The output of this is….

3.4 – Setting up the second screen

Based on this…. We decided to look at these families:

### Descriptive

Methods – helen can send methods list

* Literature Review" = 1,
* "Interviews/surveys"= 2,
* "Social media or crowd sourcing" = 3,

"Machine learning" = 4,

"Mapping & GIS" = 5,

"Simulations or scenarios" = 6,

"Community guidance & tools" = 7

Geography

"None" = 0,

"East-Africa" = 1,

"Rest of Africa" = 2,

"Not Africa 'Global South'" = 3

Study is clear based in a rural location

Study is clearly based in a city

Technology

"Not specified" = 1,

"Phone" = 3,

"Computer" = 4

How they use MM

Mobile Money Type

\ "MPessa" = 2,

"Borrow" = 3,

"Remittance" = 4,

"Credit" = 5

* Women’s savings groups
  + Transactions
  + Access Credit
  + Access to govt money
  + Access to NGOs
  + Access to remittences
  + Platform visibility (eg influencer)
  + Access international markets
  + Link to advertising/communication

### Conceptual

* **DFI Theme (**Mobile Money, Gender, Financial Inclusion, Entrepreneurship and Technology), based on our framework
  + "Mobile Money" = 1,
  + "Gender" = 2,
  + "Financial Inclusion" = 3,
  + "EntreP" = 4,
  + "Technology" = 5

* **Gender gad – improve from GAD chatgpt**
  + Changing Power Relations between women & men
  + Structural Barriers to Financial Inclusion
  + Enabling Agency and Empowerment
  + Transformation of Gender Roles
  + Access to and Control over Resources
  + Risk, Security, and Violence
* Gender & Youth
* Gender & elderly

Within ent type cite papers

* + Microentrepeneurs , small-scale traders , market stalls, - using MM for transactions
  + SME - e.g. salons, own establishment buildling, mm for transactions and to ease supply chains, alongside social media/advertising/ brand partnership
  + Collective / Cooperative Entrepreneurship, women groups selling on etsy, Mobile money used for group savings, loans, and collective investments.
  + Individual influencer/uber driver etc. accessing new entrepreneurship opportunities BECAUSE of mobile platforms, their livelihood would go away without mm
  + bigger corporations

Entrepreneurship sector

"Not specified" = 0,

"Ag" = 1,

"Hair" = 2,

"Film/Creative" = 3,

"handicrafts" = 4

2 drop downs

1 inclusive development xxxx

1. Economic Empowerment
2. Gender Equality & Social Inclusion (GESI)
3. Poverty Reduction
4. Informality & the Informal Economy
5. Social Norms & Cultural Factors

financial inclusion xxxx

1. Access to Financial Services
2. Usage & Adoption Patterns
3. Affordability & Costs
4. Financial Capability & Literacy
5. Trust, Privacy & Security

Other themes

* Training/education
* "Policy" = 1,
* Climate change
* sustainablility

Harvard University. (2020). Women and the changing face of entrepreneurship in Africa: Revised concept note. Harvard University Center for African Studies. Retrieved from <https://africa.harvard.edu/files/african-studies/files/women_and_the_changing_face_of_entrepreneurship_in_africa_revised_concept_note.pdf>

Lepoutre, J., & Oguntoye, A. (2018). Inclusive innovation and entrepreneurship in Africa: Capturing the opportunities of digital finance. Journal of African Business, 19(3), 305–322. <https://doi.org/10.1080/15228916.2018.1455887>

Hughes, N., & Lonie, S. (2007). M-PESA: Mobile money for the “unbanked” turning cellphones into 24-hour tellers in Kenya. Innovations: Technology, Governance, Globalization, 2(1–2), 63–81. <https://doi.org/10.1162/itgg.2007.2.1-2.63>

Vodafone Group. (2018). Empowering female entrepreneurs through mobile financial services in Kenya. Retrieved from <https://www.vodafone.com/news/digital-society/empowering-female-entrepreneurs-through-mobile-financial-services-in-kenya>

World Economic Forum. (2016). The evidence is in: Mobile money can help close the gender gap. Retrieved from <https://www.weforum.org/agenda/2016/12/the-evidence-is-in-mobile-money-can-help-close-the-gender-gap/>

International Growth Centre. (2022). How mobile money can empower women: Evidence from Africa. Retrieved from <https://www.theigc.org/blog/how-mobile-money-can-empower-women-evidence-from-africa>

UN Women. (2022). Gender-responsive financial inclusion: A pathway to women’s economic empowerment. Retrieved from <https://africa.unwomen.org/en/stories/news/2022/03/gender-responsive-financial-inclusion>

Africa Renewal. (2022). Digital finance can drive women's economic empowerment in Africa. United Nations. Retrieved from <https://www.un.org/africarenewal/magazine/july-2022/digital-finance-can-drive-womens-economic-empowerment-africa>

Asongu, S. A., & le Roux, S. (2021). The role of mobile money innovations in transforming unemployed women to self-employed women. Economics Bulletin, 41(2), 795-804. Retrieved from <https://www.econstor.eu/bitstream/10419/298221/1/1845286677.pdf>

Heath, R., & Riley, E. (2024). Digital financial services and women's empowerment in Tanzania. Journal of Development Economics, 165, 103155. Retrieved from <https://www.povertyactionlab.org/sites/default/files/research-paper/WP11400_Digital-Financial-Services-and-Womens-Empowerment-in-Tanzania_Heath-Riley_May2024.pdf>

Koomson, I., Villano, R. A., & Hadley, D. (2020). What we know and don't know about the socioeconomic impacts of mobile money in Sub-Saharan Africa: A systematic review. Information Systems Journal, 31(6), 1001-1024. <https://doi.org/10.1002/isd2.12155>

Macha, S., & Muli, D. (2020). Macroeconomic effects of mobile money: Evidence from Uganda. Financial Innovation, 6(1), 1-15. <https://doi.org/10.1186/s40854-019-0141-5>

Van Hove, L., & Dubus, A. (2019). Mobile money and the economy: A review of the evidence. World Bank Research Observer, 33(2), 135-190. <https://doi.org/10.1093/wbro/lky004>

GSMA. (2020). Mobile money: Driving formalisation and building the resilience of MSMEs. Retrieved from <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/06/Mobile-Money-Driving-formalisation-and-building-the-resilience-of-MSMEs.pdf>

Research Square. (2023). Mobile money, entrepreneurship, and informality. Retrieved from <https://assets-eu.researchsquare.com/files/rs-4675167/v1_covered_d9f386ca-acdd-40a3-a544-38cfd9ddacdd.pdf>

International Finance Corporation (IFC). (2023). Digital Financial Services: Advancing Women’s Economic Participation. Retrieved from [https://www.ifc.org](https://www.ifc.org/)

Kabeer, N. (1994). Reversed Realities: Gender Hierarchies in Development Thought. London: Verso.

Latour, B. (2005). Reassembling the Social: An Introduction to Actor-Network-Theory. Oxford: Oxford University Press.

Massa, I. (2013). Development Finance Institutions: Conditions for Success. Overseas Development Institute. Retrieved from <https://cdn.odi.org/media/documents/8188.pdf>

Oudshoorn, N., & Pinch, T. (Eds.). (2003). How Users Matter: The Co-Construction of Users and Technology. Cambridge, MA: MIT Press.

Pearson, R. (2005). The Rise and Rise of Gender and Development. In Razavi, S. & Hassim, S. (Eds.), Gender and Social Policy in a Global Context: Uncovering the Gendered Structure of “The Social” (pp. 157–179). Palgrave Macmillan.

Razavi, S., & Miller, C. (1995). From WID to GAD: Conceptual Shifts in the Women and Development Discourse. UNRISD.

UN Women. (2022). Women’s Economic Empowerment in East Africa: Accelerating Access to Finance. Retrieved from [https://www.unwomen.org](https://www.unwomen.org/)

Wajcman, J. (2004). TechnoFeminism. Cambridge: Polity Press.