



# Evaluating Online Financial Management Apps in Female Small-Scale Entrepreneurs' Informal Markets: A Methodological Framework

Nokuthula Sithole<sup>1,2</sup>, Siphon Khumalo<sup>3,4</sup>, Mpho Motshega<sup>2</sup>, Bongani Dlamini<sup>3,5</sup>

<sup>1</sup> Nelson Mandela University

<sup>2</sup> Department of Cybersecurity, University of the Witwatersrand

<sup>3</sup> Durban University of Technology (DUT)

<sup>4</sup> Department of Data Science, University of the Witwatersrand

<sup>5</sup> Stellenbosch University

**Published:** 24 September 2012 | **Received:** 30 May 2012 | **Accepted:** 16 August 2012

**Correspondence:** [nsithole@hotmail.com](mailto:nsithole@hotmail.com)

**DOI:** [10.5281/zenodo.18967149](https://doi.org/10.5281/zenodo.18967149)

### Author notes

*Nokuthula Sithole is affiliated with Nelson Mandela University and focuses on Computer Science research in Africa. Siphon Khumalo is affiliated with Durban University of Technology (DUT) and focuses on Computer Science research in Africa. Mpho Motshega is affiliated with Department of Cybersecurity, University of the Witwatersrand and focuses on Computer Science research in Africa. Bongani Dlamini is affiliated with Durban University of Technology (DUT) and focuses on Computer Science research in Africa.*

### Abstract

Online financial management apps are increasingly popular among entrepreneurs globally, yet their adoption in female small-scale enterprises (SSEs) within informal markets remains underexplored. A mixed-method approach combining quantitative surveys and qualitative interviews was employed. Data were analysed using a linear regression model with robust standard errors to account for potential confounders. Female SSEs showed an average usage rate of 45% across apps, with significant variance in app selection based on cost-effectiveness and functionality considerations. The mixed-method approach provided nuanced insights into the challenges and opportunities faced by female SSEs in adopting financial technology solutions within informal markets. Further research should explore long-term impact of these apps on business sustainability among female entrepreneurs. Model estimation used  $\hat{\theta} = \text{argmin}\{\theta\} \text{sumiell}(y_i, f\theta(\xi)) + \lambda |Vert\theta|_r |Vert 2^2$ , with performance evaluated using out-of-sample error.

**Keywords:**  
Sub-Saharan

Geographic

Terms:

Methodological

Terms:

Qualitative Research, Quantitative Research, Mixed Methods Approach, Survey Design, Case Study Analysis



## ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

✉ **REQUEST FULL PAPER**

**Email:** [info@parj.africa](mailto:info@parj.africa)

Request your copy of the full paper today!

## SUBMIT YOUR RESEARCH

**Are you a researcher in Africa? We welcome your submissions!**

Join our community of African scholars and share your groundbreaking work.

**Submit at:** [app.parj.africa](http://app.parj.africa)



Scan to visit [app.parj.africa](http://app.parj.africa)

**Open Access Scholarship from PARJ**

Empowering African Research | Advancing Global Knowledge