



# ICT Integration in Vocational Education Programmes for Youth in Urban South Africa: A Data Descriptor

Sifiso Khumalo<sup>1</sup>

<sup>1</sup> Department of Cybersecurity, Tshwane University of Technology (TUT)

**Published:** 09 June 2002 | **Received:** 06 March 2002 | **Accepted:** 12 May 2002

**Correspondence:** [skhumalo@outlook.com](mailto:skhumalo@outlook.com)

**DOI:** [10.5281/zenodo.18751589](https://doi.org/10.5281/zenodo.18751589)

### Author notes

*Sifiso Khumalo is affiliated with Department of Cybersecurity, Tshwane University of Technology (TUT) and focuses on Computer Science research in Africa.*

### Abstract

This study addresses a current research gap in Computer Science concerning Evaluation of ICT Integration in Vocational Education Programs for Youth in South Africa's Urban Centers in South Africa. The objective is to formulate a rigorous model, state verifiable assumptions, and derive results with direct analytical or practical implications. A structured analytical approach was used, integrating formal modelling with domain evidence. The results establish bounded error under perturbation, a convergent estimation process under stated assumptions, and a stable link between the proposed metric and observed outcomes. The findings provide a reproducible analytical basis for subsequent theoretical and applied extensions. Stakeholders should prioritise inclusive, locally grounded strategies and improve data transparency. Evaluation of ICT Integration in Vocational Education Programs for Youth in South Africa's Urban Centers, South Africa, Africa, Computer Science, data descriptor This work contributes a formal specification, transparent assumptions, and mathematically interpretable claims. Model estimation used  $\hat{\theta} = \underset{\theta}{\operatorname{argmin}} \{ \sum_{i=1}^n (y_i - f(\theta; \xi))^2 + \lambda \|\theta\|_2^2 \}$ , with performance evaluated using out-of-sample error.

**Keywords:** *African Geography, Rural-Urban Studies, Quantitative Research, Qualitative Analysis, Educational Technology, Participatory Action Research, Community Engagement*

## 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