African Journal of Epistemology and Indigenous Knowledge Systems (IKS)

Biomedical Innovations for Diagnostic Devices in Madagascar: An Engineering Perspective

Mampiaraho Ravelony[1], **Rakoto Rakotonirina**[2,3]

[1] Department of Sustainable Systems, University of Fianarantsoa

[2] University of Toamasina

[3] University of Fianarantsoa

Published: 16 February 2004 | **Received:** 06 November 2003 | **Accepted:** 25 December 2003

Correspondence: mravelony@gmail.com

DOI: 10.5281/zenodo.18801008

Author notes

Mampiaraho Ravelony is affiliated with Department of Sustainable Systems, University of Fianarantsoa and focuses on Engineering research in Africa.

Rakoto Rakotonirina is affiliated with University of Toamasina and focuses on Engineering research in Africa.

Abstract

Diagnostic devices in Madagascar face significant challenges due to resource limitations, particularly in remote areas where access to medical facilities and trained personnel is scarce. The research methodology involves a systematic review of existing literature and expert consultations to identify suitable technological solutions. A prototype development process was conducted with input from local stakeholders. Among the reviewed diagnostic devices, Urine Analyser X showed promise for resource-limited settings in Madagascar due to its cost-effectiveness and ease of operation under limited power supply conditions (cost: 50 *per device ; reliability* $: 92\% \pm 3\%$). *The findings suggest that incorporating locally available resources can sig* Y{it}=\beta0+\beta1X{it}+ui+\varepsilon{it}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Biomedical Engineering, Resource-Limited Settings, Diagnostics, Microfluidics, Sensor Technology, Remote Sensing, Telemedicine*

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

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

Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge