Multilevel Regression Analysis for Evaluating Adoption Rates of Field Research Stations in South Africa: A Methodological Study

Kgotla Mabaso[1,2]**, Ramosi Shabalala**[3,4]**, Mahlangu Moloi**[5]

[1] Department of Interdisciplinary Studies, Council for Scientific and Industrial Research (CSIR)

[2] Department of Advanced Studies, Rhodes University

[3] Department of Interdisciplinary Studies, Wits Business School

[4] Council for Scientific and Industrial Research (CSIR)

[5] Department of Research, Wits Business School

Author notes

Kgotla Mabaso is affiliated with Department of Interdisciplinary Studies, Council for Scientific and Industrial Research (CSIR) and focuses on Environmental Science research in Africa.

Ramosi Shabalala is affiliated with Department of Interdisciplinary Studies, Wits Business School and focuses on Environmental Science research in Africa.

Mahlangu Moloi is affiliated with Department of Research, Wits Business School and focuses on Environmental Science research in Africa.

Abstract

Field research stations are crucial for environmental science in South Africa but their adoption rates vary among institutions. A multilevel logistic regression model was used to analyse data from 10 universities, considering both institutional and geographical levels. The multilevel model indicated that the probability of adoption increased by 25% when institutions received external funding (95% CI: [1.23, 1.48]). Multilevel regression analysis provided insights into factors influencing field research station adoption in South Africa. Further studies should explore the long-term sustainability of these stations and their impact on environmental science outcomes. Field Research Stations, Adoption Rates, Multilevel Regression Analysis, South Africa The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Sub-Saharan, multilevel modelling, logistic regression, institutional variability, environmental science, geographic information systems, spatial 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

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