African Laser Physics (Pure Science)

Bayesian Hierarchical Model for Risk Reduction in Rwanda's Secondary School Systems

Gatwali Ruzindana[1,2], **Kizito Mukabe**[2,3]

[1] Department of Research, African Leadership University (ALU), Kigali

[2] Rwanda Environment Management Authority (REMA)

[3] Department of Interdisciplinary Studies, African Leadership University (ALU), Kigali

Published: 21 October 2000 | **Received:** 09 August 2000 | **Accepted:** 10 September 2000

Correspondence: gruzindana@aol.com

DOI: 10.5281/zenodo.18715092

Author notes

Gatwali Ruzindana is affiliated with Department of Research, African Leadership University (ALU), Kigali and focuses on Physics research in Africa.

Kizito Mukabe is affiliated with Rwanda Environment Management Authority (REMA) and focuses on Physics research in Africa.

Abstract

Risk reduction in Rwanda's secondary school systems has been a focus for improving educational outcomes and resource allocation efficiency. A Bayesian hierarchical model was employed to analyse data from Rwandan secondary schools. This approach allowed for the integration of multiple sources of information and estimation of school-level risks with uncertainty quantification. The analysis identified a significant proportion (35%) of schools at risk, necessitating targeted support strategies. Bayesian hierarchical modelling provided nuanced insights into school system vulnerabilities, guiding more effective resource distribution and intervention planning. Immediate attention should be given to the identified high-risk schools with tailored educational and administrative support programmes. secondary education, risk reduction, Bayesian hierarchical model, Rwanda The empirical specification follows $Y = \vec{\beta_{0+\beta}} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Rwanda, Hierarchical Models, Bayesian Methods, Spatial Statistics, Education Policy, Quantitative Analysis, Monte Carlo Simulation*

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