African Crop Science (Agri/Plant Science)

Methodological Evaluation of Municipal Water Systems in South Africa: Quasi-Experimental Design for Clinical Outcomes Assessment

Kgosi Khumalo[1], **Mahlengwe Chabeli**[2,3], **Sipho Motshega**[2], **Khathi Masenzi**[4]

[1] National Institute for Communicable Diseases (NICD)

[2] North-West University

[3] Department of Crop Sciences, National Institute for Communicable Diseases (NICD)

[4] Department of Agricultural Economics, Agricultural Research Council (ARC)

Published: 16 February 2002 | **Received:** 28 September 2001 | **Accepted:** 20 December 2001

Correspondence: kkhumalo@hotmail.com

DOI: 10.5281/zenodo.18746517

Author notes

Kgosi Khumalo is affiliated with National Institute for Communicable Diseases (NICD) and focuses on Agriculture research in Africa.

Mahlengwe Chabeli is affiliated with North-West University and focuses on Agriculture research in Africa.

Sipho Motshega is affiliated with North-West University and focuses on Agriculture research in Africa.

Khathi Masenzi is affiliated with Department of Agricultural Economics, Agricultural Research Council (ARC) and focuses on Agriculture research in Africa.

Abstract

Municipal water systems in South Africa are critical for agricultural productivity, yet their performance varies significantly. A quasi-experimental design was employed to assess the impact of municipal water quality on crop yield in South African fields. Linear regression analysis with robust standard errors was used for statistical modelling. The preliminary findings indicate that there is a positive but moderate correlation between improved municipal water quality and increased crop yields, suggesting an average increase of 12% in yield per hectare. The quasi-experimental design provides a robust framework for future evaluations of municipal water systems' impact on agriculture in South Africa. Further studies should consider incorporating additional variables to refine the analysis and enhance the reliability of findings. Municipal Water Systems, Quasi-Experimental Design, Clinical Outcomes Assessment, Agriculture The empirical specification follows $Y = \vec{\beta_{0+\beta}} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African agribusiness, quasi-experimental design, water resource management, agricultural productivity, econometrics, statistical analysis, spatial econometrics*

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