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Stability Analysis and Convergence Proofs in Time-Series Econometrics for Water-Resource Allocation in Uganda,

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Abstract

Theoretical frameworks are essential for understanding complex systems such as water-resource allocation in Uganda, where stability and convergence analysis can inform sustainable policy decisions. The methodology involves formulating linear regression equations to model the allocation dynamics, assuming steady-state conditions in the system. A key assumption is that changes in economic parameters do not cause abrupt shifts in resource allocation patterns. The theoretical analysis provides a robust foundation for understanding how economic policies can influence sustainable water resource allocation in Uganda. The stability and convergence proofs offer insights into policy design and evaluation. Based on the theoretical findings, policymakers should focus on stabilising key economic variables to ensure long-term sustainability of water resources, particularly in regions prone to climate variability. The analytical core is $\hat{\{} y\} t = mathcal\{F\}(xt;\theta)$ with $\hat{\{}\theta\} = argmin_{\theta} L(\theta)$, and convergence is established under standard smoothness conditions.

Keywords: *Sub-Saharan, Africa, Granger, Causality, Vector, AutoRegression, Vanilla, Recursive*

ABSTRACT-ONLY PUBLICATION

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