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Methodological Assessment of Smallholder Farm Systems in Senegal Using Panel Data Analysis for Clinical Outcome Measurement,Context

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Abstract

Smallholder farms in Senegal are crucial for agricultural productivity and food security. However, their effectiveness in achieving clinical outcomes remains underexplored. A scoping review was conducted using a systematic search strategy across relevant journals and grey literature. Studies were included if they utilised panel data for assessing clinical outcomes from onwards. Panel data analysis revealed significant variations in farm productivity, with a substantial proportion (75%) of farms showing improved yields over two years. The methodological evaluation highlights the potential of panel data analysis to enhance understanding and policy-making for smallholder farmers in Senegal. Further research should focus on longitudinal studies to validate findings and explore additional factors affecting clinical outcomes. Model estimation used $\hat{\{}\theta\}=argmin\{\theta\}sumiell(yi,f\theta(\xi))+\lambda lVert\theta rVert2^{2}$, with performance evaluated using out-of-sample error.

Keywords: *Sub-Saharan, Agricultural-Ecology, Panel-Data, Stochastic-Components, Structural-Adjustment-Policy, Spatial-Statistics, Quantile-Ranking*

ABSTRACT-ONLY PUBLICATION

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