



Methodological Evaluation of Quasi-Experimental Designs in Assessing Risk Reduction Strategies among Ethiopian Smallholder Farm Systems

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Abstract

The effectiveness of risk reduction strategies in Ethiopian smallholder farm systems is a critical area for research given the country's vulnerability to climate change and economic shocks. The analysis will employ a systematic review approach, synthesizing existing literature to identify and assess QED applications. Key studies will be evaluated using predetermined criteria for methodological rigor. A notable finding is the significant variability in outcomes reported across different QED implementations, suggesting that contextual factors play a crucial role in strategy effectiveness. While quasi-experimental designs offer valuable insights into risk reduction strategies, their application requires careful consideration of local conditions and robust methodological frameworks to ensure meaningful results. Researchers should prioritise the development of context-specific QED designs and implement multi-faceted evaluation methods to enhance the validity of findings in smallholder contexts. The empirical specification follows $Y = \beta_{0+\beta} X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *African agroecology, Smallholder farming systems, Quasi-experimental design, Randomized controlled trials, Impact evaluation, Econometric modelling, Spatial analysis*

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