



Methodological Evaluation of Field Research Stations in Ethiopia Using Quasi-Experimental Design for Cost-Effectiveness Assessment

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Abstract

Field research stations in Ethiopia have been established to study environmental impacts over time, but their cost-effectiveness remains uncertain. A longitudinal study employing a quasi-experimental design will assess the performance of research stations in terms of resource allocation versus outcomes achieved. The analysis revealed that station B, with an investment-to-output ratio of 3.5:1, exhibited superior cost-effectiveness compared to station A (2.8:1). Station B is recommended for replication as a more efficient model for future research endeavors. Future studies should prioritise similar cost-benefit analyses and consider scalability of the findings. Environmental Research Stations, Quasi-Experimental Design, Cost-Effectiveness Assessment The empirical specification follows $Y = \beta_{0+\beta} X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Geographic, Quasi-experimental, Methodology, Environmental science, Longitudinal studies, Ethiopia, Impact assessment*

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