



# Methodological Evaluation of Secondary School Systems in Ethiopia Using Difference-in-Differences Approach for Efficiency Gains,

Mekdes Woldehanna<sup>1</sup>

<sup>1</sup> Jimma University

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**Correspondence:** [mwoldehanna@aol.com](mailto:mwoldehanna@aol.com)

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## Author notes

*Mekdes Woldehanna is affiliated with Jimma University and focuses on Environmental Science research in Africa.*

## Abstract

This study focuses on methodological evaluation of secondary school systems in Ethiopia, with a specific interest in measuring efficiency gains through a difference-in-differences approach. A difference-in-differences (DiD) model will be employed to analyse changes in secondary school efficiency before and after targeted interventions. This method compares the change in outcomes between a treatment group that received intervention and a comparison group that did not. The DiD analysis revealed significant gains in student performance in mathematics by 15% in the treatment schools compared to the control schools, indicating effective implementation of educational reforms. This study confirms the efficacy of the DiD model in measuring efficiency gains and suggests further research into its application across other regions in Ethiopia and neighboring countries. Further studies should explore the long-term impact of these interventions and potential scalability. Policy recommendations include prioritising teacher training and resource allocation based on performance data. The empirical specification follows  $Y = \beta_{0+\beta} p X + \text{varepsilon}$ , and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** Ethiopia, Secondary Education, Methodology, Efficiency Gains, Difference-in-Differences, Econometrics, Comparative Analysis

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