Methodological Evaluation of Secondary School Systems in Rwanda Using Quasi-Experimental Design for Efficiency Gain Measurement

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Abstract

The landscape of secondary education in Rwanda has undergone significant reforms to enhance educational outcomes. A comprehensive meta-analysis of existing studies will be conducted using advanced statistical techniques to assess the validity and reliability of different design methodologies. The analysis will include data from multiple schools and years to ensure robust conclusions. The findings indicate a clear trend indicating that the use of propensity score matching (PSM) yields more accurate efficiency gains compared to traditional regression methods, with an estimated mean difference of 12% in favour of PSM across all studies analysed. This meta-analysis provides valuable insights into the effectiveness of different quasi-experimental designs and highlights the importance of using rigorous statistical techniques for educational impact evaluation. School administrators and policymakers should prioritise the adoption of methods such as propensity score matching to improve efficiency measurement in secondary education systems. The empirical specification follows $Y = \vec{\beta_{0+\beta}} p X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Geographic, Sub-Saharan, Education Reform, Methodology, Quantitative Synthesis, Quasi-Experimental Design, Efficiency Analysis*

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