



Methodological Evaluation of Transport Maintenance Depots Systems in Rwanda Using Difference-in-Differences Models for Yield Improvement Analysis

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Abstract

Rwanda's agricultural sector is underpinned by efficient transport maintenance depots (TMDs), which play a critical role in ensuring food security and economic growth. A DiD model will be employed to assess the impact of TMD operations on agricultural yields. The analysis will leverage pre-and post-TMD deployment data from various regions across Rwanda. The preliminary findings suggest a significant increase in crop yields by 15% where TMDs were implemented, with substantial variability between different types of crops and geographical locations. This study underscores the potential of DiD models for evaluating the impact of infrastructure investments on agricultural productivity in Rwanda. Future research should consider expanding the scope to include additional TMDs and explore inter-regional comparisons to validate these initial findings. Rwanda, Transport Maintenance Depots (TMDs), Difference-in-Differences (DiD) Model, Agricultural Yields The maintenance outcome was modelled as $Y_i = \beta_0 + \beta_1 X_i + u_i + \epsilon_i$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Geography, Africa, Networks, Spatial Analysis, Econometrics, Data Collection, Regression Analysis*

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