



Time-Series Forecasting Model for Measuring Adoption Rates of Transport Maintenance Depot Systems in Ethiopia

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Abstract

The adoption of transport maintenance depot systems in Ethiopia has been slow despite their potential to improve vehicle reliability and safety. A time-series forecasting model was developed to predict the adoption rate of transport maintenance depot systems in Ethiopia. The model incorporates historical data and accounts for potential external factors affecting system uptake. The forecasted growth trajectory suggests an increase in adoption rates over the next five years, with a projected proportion reaching at least 30% by . The time-series forecasting model provides valuable insights into future trends of transport maintenance depot systems in Ethiopia and can inform policy decisions aimed at increasing system uptake. Public authorities should consider implementing targeted interventions to accelerate the adoption of these systems, particularly focusing on rural areas with limited access to such services. time-series forecasting, transport maintenance depots, adoption rates, Ethiopian context The maintenance outcome was modelled as $Y_t = \beta_0 + \beta_1 X_t + u_t + \epsilon_t$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: Ethiopia, Geographic Information Systems (GIS), Time-series Analysis, Spatial Data Infrastructure (SDI), Predictive Modelling, Transportation Engineering, Geographic Information Systems (GIS)

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