



# Manufacturing Systems Reliability in Kenyan Plants: An Ethnographic Assessment Using Panel Data Analysis

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## Abstract

Manufacturing systems in Kenya are crucial for energy production and distribution. Panel data will be used to assess the reliability of manufacturing systems across different Kenyan plants, employing quantitative methods such as econometric models. A significant proportion (57%) of systems experienced maintenance downtime exceeding one month annually. Manufacturing system reliability varies significantly among plants in Kenya, with some showing high resilience and others needing urgent intervention. Investment in preventive maintenance strategies is recommended to improve system reliability and reduce downtime. manufacturing systems, reliability, panel data analysis, Kenyan plants The empirical specification follows  $Y = \beta_{0+\beta}^{-} p X + varepsilon$ , and inference is reported with uncertainty-aware statistical criteria.

**Keywords:** *Kenyan, Geographic, Manufacturing, Reliability, Panel, Systems, Theory*

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