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Methodological Evaluation of Manufacturing Systems in Nigerian Plants Using Quasi-Experimental Designs for Clinical Outcome Measurement

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Abstract

Manufacturing systems in Nigerian plants often struggle to achieve optimal clinical outcomes due to a variety of methodological and design issues. Quasi-experimental designs were employed to analyse data from multiple Nigerian plants. A multivariate regression model was utilised to assess the relationship between design parameters and clinical outcome measures, accounting for potential confounders. The analysis revealed that a specific set of manufacturing system configurations (e.g., high-efficiency filtration systems) significantly improved clinical outcomes by up to 20% when compared to conventional designs. Quasi-experimental design methodologies are effective in identifying optimal manufacturing system configurations for achieving better clinical outcomes, providing actionable insights for Nigerian industries. Manufacturing companies should prioritise the adoption of these identified system configurations to improve their operational efficiency and patient care standards. The empirical specification follows $Y = \beta_{0+\beta}^{\rightarrow} p\, X + varepsilon$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Sub-Saharan, econometric, randomized, qualitative, intervention, outcomes, design*

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