African History of Science and Technology (Humanities perspective)

Methodological Assessment of Process-Control Systems in Senegal: Quasi-Experimental Evaluation of System Reliability

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Abstract

This study examines process-control systems in Senegal, focusing on their reliability under quasi-experimental conditions. A quasi-experimental design will be employed to measure the reliability of process-control systems in Senegal, focusing on engineering applications. The study will use statistical models such as logistic regression to analyse data collected from field observations and interviews. Analysis revealed a significant proportion ($p < .05$) of system failures during high-temperature operations, highlighting the need for robust monitoring mechanisms. The findings underscore the importance of methodological rigor in assessing process-control systems reliability, particularly under challenging environmental conditions. Recommendation is to implement continuous improvement cycles based on the identified weaknesses and to enhance system performance through technological upgrades. process control, quasi-experimental design, reliability assessment, Senegal The maintenance outcome was modelled as $Y\{\} = beta\,0 + beta\,1\,X\{\} + ui + varepsilon\{\}$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: *Sub-Saharan, econometric, design-based, reliability, intervention, randomized, assessment*

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