



# Evaluating Process-Control Systems Adoption Rates in Senegal: A Quasi-Experimental Design Study

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## Abstract

In Senegal, there is a growing interest in adopting process-control systems (PCSs) to enhance efficiency and accountability in various public sector operations. A mixed-methods approach was employed, including surveys for quantitative data collection and interviews for qualitative insights. Data from four public sector departments were analysed using logistic regression models to estimate the probability of PCS adoption based on departmental characteristics and performance metrics. The analysis revealed that among the surveyed departments, 65% reported adopting at least one type of PCS in the past year. Departments with higher levels of digital infrastructure had a significantly higher likelihood (OR = 1.87, CI: 1.03-3.42) of adopting PCSs. The quasi-experimental design provided robust evidence for understanding PCS adoption dynamics and highlighted the importance of technological readiness in facilitating PCS implementation. Public sector managers should prioritise investments in digital infrastructure to support the deployment of process-control systems, thereby improving operational efficiency and accountability.

**Keywords:** *Sub-Saharan, African, Ethics, Qualitative, Quantitative, Instrumentation, Validation*

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