

Political Stability, Public Investment, Use Agricultural Technology use in Sub-Saharan Africa: Evidence from a Dynamic Mediation Panel Approach

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Abstract: This study investigates the role of political stability in shaping agricultural technological intensity in Sub-Saharan Africa, with a particular focus on mineral fertilizer consumption as a proxy for input-based innovation. The analysis emphasizes the mediating role of public agricultural expenditure as an institutional transmission channel linking governance quality to agricultural productivity outcomes. Using a dynamic panel dataset covering twenty major agricultural producing and fertilizer-importing countries in Sub-Saharan Africa over the period 2007–2016, the study employs System GMM estimator combined with a mediation analysis framework. The empirical results indicate that political stability exerts a positive and statistically significant influence on fertilizer use intensity. However, the relationship is predominantly indirect, operating through public agricultural expenditure, which accounts for approximately 64% of the total effect. Policy recommendations emphasize strengthening governance stability while strategically increasing public investment in agricultural research, input accessibility, and local fertilizer production to enhance system resilience against external shocks.

Keywords: Political stability, Agricultural technology, Public agricultural expenditure, Sub-Saharan Africa, Mediation analysis

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