

This study addresses the prudential calibration challenge in emerging Islamic banking systems by examining whether prevailing capital, liquidity, and governance thresholds are proportionately aligned with operational productivity. Focusing on Sub-Saharan Africa (SSA), it reframes financial soundness indicators as regulatory design variables rather than isolated performance determinants.

The study employs a bias-corrected two-stage Data Envelopment Analysis (DEA) on a balanced panel of 35 fully fledged Islamic banks in SSA over the period 2010–2024. Efficiency scores are estimated under variable returns to scale and subsequently analysed using truncated regression against CAMELS-based prudential indicators. The findings are interpreted through a regulatory calibration framework grounded in efficiency–stability trade-off theory.

Results reveal persistent inefficiencies primarily driven by scale constraints rather than managerial deficiencies. Capital adequacy does not exhibit proportional efficiency gains, liquidity strength shows only modest productivity alignment, and asset quality demonstrates a more consistent association with operational performance. The evidence suggests that mechanical prudential reinforcement in structurally shallow markets may yield diminishing productivity returns.

The study proposes a proportional prudential calibration approach integrating capital design, liquidity infrastructure development, and governance strengthening to align stability objectives with productive intermediation better.

This paper advances Islamic banking research by positioning operational efficiency as a regulatory diagnostic tool and introducing an empirically grounded prudential calibration framework for emerging financial systems.