

## Editorial

As the digital and analytical frontiers of research continue to expand, the integration of emerging technologies with robust quantitative methodologies becomes essential to support sustainable progress. In this issue, the featured studies delve into two distinct yet impactful areas: the business strategies surrounding 5G network deployment in Sub-Saharan Africa, and statistical innovation in population estimation through two-phase stratified sampling. These contributions demonstrate the relevance of context-driven technological planning and methodological precision in addressing current and future societal needs.

The rollout of 5G networks across Sub-Saharan Africa marks a critical juncture for mobile network operators (MNOs) seeking to harness digital transformation for economic growth. In a region undergoing rapid technological adoption, the focus shifts beyond infrastructure to business model adaptation. By quantitatively analyzing the key components of MNOs' 5G business strategies, this study highlights the interconnected influence of different model elements on overall performance. With economic disruption and increased market complexity accompanying the 5G transition, the insights offered here support a recalibration of existing models to ensure long-term viability. The empirical approach uncovers both direct and indirect dependencies within business model frameworks, providing a data-driven foundation for strategic decision-making in the evolving telecommunications landscape [1].

Precision in statistical estimation plays a foundational role in reliable data interpretation, especially in complex sampling frameworks. This research contributes to the field by introducing a refined estimator for population mean estimation in two-phase stratified sampling, utilizing exponential and logarithmic transformations. By addressing bias and mean squared error (MSE) up to the first degree of approximation, the proposed method achieves superior performance compared to traditional and contemporary estimators such as  $\bar{y}_{ds}$ , the Ige & Tripathi ratio estimator, and the Tailor et al. exponential estimator. Through rigorous theoretical derivation and simulation-based validation, the new estimator demonstrates enhanced accuracy and efficiency, reinforcing its applicability in practical survey analysis and statistical modeling [2].

Together, these studies reinforce the dynamic nature of contemporary research, where innovative solutions are applied to both technological and methodological domains. Whether by redefining digital business frameworks or advancing statistical estimators, these works offer valuable pathways for researchers, practitioners, and policymakers seeking to align innovation with real-world challenges.

### References:

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