



Methodological Assessment of Community Health Centre Systems in South Africa Using Panel Data to Measure Cost-Effectiveness

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Abstract

Community health centres in South Africa have faced challenges in cost-effectiveness due to varying operational models. A systematic literature review was conducted using quantitative methods, focusing on empirical studies from to . Panel-data techniques were applied to analyse cost-efficiency metrics across different regions in South Africa. The analysis revealed that while some health centres showed significant cost savings (proportion >5%), others had inefficiencies with costs exceeding the allocated budget by over 10%. Variability in operational models significantly influenced these outcomes. Despite methodological challenges, panel-data methods provided insights into the cost-effectiveness of community health centre systems, highlighting areas for improvement and better resource allocation strategies. Further research should focus on longitudinal studies to understand long-term impacts and implement standardised operational models across all regions. Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, panel-data, econometrics, cost-benefit, healthcare-systems, South-African, qualitative-research*

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