



# Methodological Assessment and Panel Data Estimation of Community Health Centre Adoption Rates in Senegal

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## Abstract

Community health centres (CHCs) in Senegal have been established to improve healthcare access in rural areas. However, their adoption rates vary significantly among different regions and socio-economic groups. The review employs rigorous meta-analysis techniques to synthesize existing studies on CHCs. Panel data are employed to account for temporal variations in adoption rates, controlling for potential confounding factors such as geography and socioeconomic status. Panel-data analysis reveals a significant geographical pattern of CHC adoption rates with higher adoption observed in coastal regions compared to inland areas ( $p < 0.05$ ). This study highlights the importance of considering regional contexts when evaluating CHC adoption rates, suggesting that interventions tailored to specific geographic and socio-economic conditions are more effective. Policy-makers should prioritise data collection efforts in regions with lower CHC adoption rates to inform targeted health service development strategies. Treatment effect was estimated with  $\text{text}\{logit\}(\pi) = \beta_0 + \beta_1 p X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *African geography, community health centres, econometrics, panel data, regression analysis, spatial analysis, adoption rates*

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