



Efficiency Measures and Demand-Side Management in Urban Ghana: A Survey Study

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Abstract

Urban areas in Ghana face significant energy challenges due to rapid population growth and increasing electrification rates. Energy inefficiency contributes substantially to high electricity costs and environmental degradation. A quantitative survey was conducted using a structured questionnaire distributed to randomly selected urban households in Accra. The sample size included 500 participants across various income groups to ensure broad representativeness. The survey revealed that approximately 42% of respondents had adopted at least one energy efficiency measure, with higher adoption rates among those with lower incomes who are more sensitive to cost savings. While there is potential for further improvements in energy efficiency and demand-side management, the current study provides insights into prevalent practices and areas needing targeted interventions. Policy makers should consider implementing community-led awareness campaigns targeting low-income households to encourage broader uptake of energy-saving technologies and practices. Urban Ghana, Energy Efficiency, Demand-Side Management, Survey Research The empirical specification follows $Y = \beta_{0+\beta} X + \text{varepsilon}$, and inference is reported with uncertainty-aware statistical criteria.

Keywords: *Sub-Saharan, urbanization, diffusion theory, behavioural economics, energy audits, renewable integration, demand response*

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