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BARRY EHINOMEN EBHOJIE

O'Khona General Dealers and Projects, South Africa

EVALUATING ENERGY EFFICIENCY IN RESIDENTIAL BUILDINGS: A CASE STUDY OF RDP HOUSES IN SOUTH AFRICA

Abstract:

Worldwide, more than one third of energy is used in buildings which account for about 15% of the total greenhouse gas that is emitted globally. Buildings in cities can account to about 80% for carbon monoxide emitted. Therefore, the built environment is a very critical part of the climate change mitigation. Evaluated in this research are energy efficiency measures that can be implemented through regulations and controls. From administered questionnaires, the issues of energy efficiency have become an imperative principle in the building sector and the way it is managed in South Africa. Based on the analysis provided, energy efficient behaviour is the predominant factor that influences energy consumption. According to the PCA results, seven variables (Age of building, number of bedrooms, roofing materials, energy for cooking and heating, window style and brick and concrete wall) were all dominant variables and these variables remain significant after implementing multiple regression models to estimate energy cost.

Keywords:

Buildings; Energy Efficiency; Greenhouse gas; PCA

JEL Classification: D10, A13, C83