

An Econometric Assessment of Household-Level Renewable Energy Adoption in Odisha using Binary Response Models

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Abstract: Access to affordable and clean energy lies within the pillars of sustainable development, particularly to the developing regions in which the changes in household use of energy remain disproportional. This paper examines the use of renewable energy in households in Odisha, India, using primary survey data collected on 147 households. Due to the dichotomous character of the dependent variable, that is adoption of renewable energy technologies, a binary logistic regression model is utilized to determine socio-economic, demographic and policy determinants of adoption. The main explanatory variables include income level, education level, government incentives, awareness score, family location and family size. The findings show that incomes, education, government policies and awareness play statistically significant positive interventions on the adoption of renewable energy whereas household location and family size do not gain statistical significance. The research suggests policy-based measures on how to implement clean energy use in Odisha and other developing economies.

Keywords: Renewable Energy Adoption, Econometrics, Logistic Regression, Sustainable Development Goals

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