

Environmental Consciousness and household energy poverty in Ghana

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1. Introduction

This study aims to examine the level of environmental consciousness in Ghana and to investigate the impact of environmental consciousness on household cooking energy decisions. This study seeks to gauge environmental consciousness and examine the relationship between environmental consciousness or awareness and household energy poverty. The novelty of this study lies primarily in the attempt to investigate the extent to which knowledge of the environment is associated with household cooking energy choices, as this variable has not yet been studied in the energy poverty literature and, more so, in Ghana. This is important to investigate within the context of the prevalence of energy poverty in countries such as Ghana.

2. Methodology and Data

The study uses data from a household survey collected from over 1,200 households across six regions in Ghana. The empirical analysis of the data follows an econometric approach. The theoretical framework adopted is the random utility model, which assumes that the choice of a good among different alternatives depends on the utility derived from the good's consumption, which in turn depends on a set of observable and unobservable features. Thus, we specify a model that explains energy poverty as follows:

$$Fueltype = \alpha + \beta_1 W_i + \beta_2 X_i + \varepsilon_i \quad (1)$$

Where W is environmental consciousness, measured as an additive index for knowledge of specific global and local environmental issues; X is a vector of control variables; ε is the idiosyncratic error term; β s are coefficients to be estimated, and α is the constant. Endogeneity of the 'environmental consciousness' variable is accounted for by using an instrumental variable approach and estimated using Lewbel (2012) approach which identifies structural parameters in models with endogenous regressors.

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3. Results

Instrumental Variable Results

VARIABLES	Fueltype (1=clean cooking fuel)		
Environmental awareness_ all	0.134***(0.044)		
Environmental awareness_ global	0.196***(0.038)		
Environmental awareness_ local	-0.017(0.069)		
Control variables	Yes	Yes	Yes
Observations	1,202	1,202	1,202
F	11.33	28.89	15.53
Critical value: maximal IV relative bias	6.69	6.69	6.69

Note: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

4. Conclusion

The study found that environmental consciousness positively impacts clean cooking energy choices and reduces energy poverty. Households with heads who are environmentally aware use cleaner cooking fuels comprising mostly LPG. Furthermore, it was revealed that knowledge of global environmental issues such as greenhouse gases, global warming, and climate change significantly impacted adopting cleaner cooking fuel. The study recommends an extensive environmental awareness campaign nationwide based on the findings. Educating people on the causes, effects and dangers of GHG emissions, global warming, and climate change, as well as the human activities that affect climate change, will influence perception and actions regarding the environment and subsequently on cooking energy choices. While the formal school curriculum could be amended to include this kind of education for the benefit of children in schools, public campaigns at the community level and radio/TV campaigns can be adopted to reach the older population who are out of school. This way, the level of awareness can be increased.

Reference

Lewbel, A. (2012) Using heteroscedasticity to identify and estimate mismeasured and endogenous regressor models. *Journal of Business & Economic Statistics* 30(1): 67-80.