Overview

The IPCC’s (Intergovernmental Panel on Climate Change) 1.5 ºC Special Report of October 8, 2018 has indicated that efforts to limiting global Earth’s temperature from preindustrial times to 1.5 ºC will require, as a matter of global urgency, reductions of anthropogenic-induced greenhouse gas (GHG) emissions in tandem with sustainable economic growth and poverty alleviation. The World Health Organization’s (WHO) Special Report: Health and Climate Change, highlights - indoor and outdoor pollution mainly from global energy system are the largest sources of disease burden and seven million premature deaths annually especially in the South. Thus, the seventh goal of the Sustainable Development Goals (SDG7) has specifically called for access to affordable, reliable, sustainable and modern energy for all by 2030. Household energy sub-sector, all else being equal, remains a critical factor in achieving economic growth, poverty reduction and global sustainability objectives.

Ghana’s Sustainable Energy for All Action Plan has recognized the centrality of sustainable energy system in achieving her national development goals in line with the Paris Agreement. However, energy and development debates hardly go beyond political rhetoric in Ghana. Thus, observed energy challenges - over reliance on biomass, energy-related ecological degradation, energy poverty and less resiliency of Ghana’s energy system lack, on average empirical appreciation. The complexity of energy and sustainable development requires proper empirical and theoretical understanding.

In this context, there is the need to understand empirically potential socio-economic and spatial covariates of household energy choice and intensity of dependency on particular class of energy resources. To estimate the determinants of household energy choice I applied multivariate logistic econometric models (tobit and logit). I used the seventh round of the Ghana Living Standard Survey (GLSS7) datasets compiled by Ghana Statistical Service. The GLSS is a nationally representative survey on socio-economic, environment and institutional variables.

Methods

I used multivariate logistic econometric modelling for the estimation of relevant determinants of household energy choice sources.

Preliminary Results

First, the descriptive statistics are presented to show household energy sources and expenditure, spatial and income groups distribution of energy consumption.

Second, the descriptive statistics indicate that majority of Ghanaians depend on unsustainable energy sources such as firewood, kerosene and charcoal.

Third, econometric models were presented to estimate potential covariates of household energy choice and the degree of a given dependency on particular class of energy resources.

Finally, the econometric estimated results suggest - household affluent, education, spatial, household size and appliances ownership are significant predictors of household energy choice decision making.

Preliminary Conclusions

Household energy subsector plays a critical role overall development agenda of Ghana and working toward the 2015 Paris Agreement. Majority of Ghanaians still rely on unsustainable sources of energy for lighting and cooking. The econometric results preliminarily reveal human capital proxied by education, household size, affluent, geography and appliance ownership are associated significantly with household energy choice.

The preliminary results highlight the importance of human capital, employment, efficient energy public policy targeting, equitably supply of reliable, affordable and environmentally compatible energy system in Ghana to promote ecologically compatible development.

References

Cameron, A. C., & Trivedi, P. K. (2010). Microeconometrics using stata (Vol. 2): Stata press College Station, TX.


