

**The relationship between economic variables, demographic variables, and gas demand  
at household level: a case of Dar es Salaam region**

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The central objective of this study was to determine the relationship between economic, demographic variables on gas demand at household level in Dar es Salaam region. The study applied a cross-sectional study design. Data were collected through personally administered structured questionnaire to 500 households. Data were analyzed by means of Descriptive Analysis, probit regression, and Ordinary Linear regression models in the probit regression model dependent variables included were economic variables which consist of gas price and household head income. The other dependent variables in probit regression were demographic variables such as household size, education level, gender and age. The results found positive relation in gas price and education level, while household size displayed a negative relationship with gas preference. This is to say that as the gas price increased by a unit it led to a 13% increase of the gas preference at household level. Also a unit increase in education level of the household head led to 7% increase in gas preference. While the increase in household size by one unit reduced gas preference by 3%. In OLS regression model, observed dependent economic variables such as gas price and household head income. It also observed dependent demographic variables such as education level household size, gender and age. The findings stipulated that the household size, education level, age and income to be positively related with gas demand. That is to say a unit increase in household size leads to increase in gas demand by 11.4%, an increase in education level increased gas demand by 15%, age increase by one year led to 1.7% increase in gas demand. The negative relationship was observed on gas price, as the gas price increased by one unit led to 11.4% decrease in gas demand. ' It is recommended that, there is a need to have strong domestic policies that stabilize the price of LPG by setting price ceiling in order to protect consumers and price floor to protect suppliers of LPG. Policies towards

strengthening macroeconomic environment need to be readdressed especially those fiscal policies as there is the need of attracting citizens on the importance of gas.