

## **Household's willingness to pay for heterogeneous attributes of drinking water quality and services improvement: an application of choice experiment**

### **ABSTRACT**

The service of providing good quality of drinking water can greatly improve the lives of the community and maintain a normal health standard. For a large number of population in the world, specifically in the developing countries, the availability of safe water for daily sustenance is none. Damaturu is the capital of Yobe State, Nigeria. It hosts a population of more than two hundred thousand, yet only 45 % of the households are connected to the network of Yobe State Water Corporation's pipe borne water services; this has led people to source for water from any available source and thus, exposed them to the danger of contracting waterborne diseases. In order to address the problem, Yobe State Government has embarked on the construction of a water treatment plant with a capacity and facility to improve the water quality and connect the town with water services network. The objectives of this study are to assess the households' demand preferences of the heterogeneous water attributes in Damaturu, and to estimate their marginal willingness to pay, using mixed logit model in comparison with conditional logit model. A survey of 300 households randomly sampled indicated that higher education greatly influenced the households' WTP decisions. The most significant variable from both of the models is TWQ, which is MRS that rates the water quality from the level of satisfactory to very good. 219 % in simple model is CLM, while 126 % is for the interaction model. As for MLM, 685 % is for the simple model and 572 % is for the interaction model. Estimate of MLM has more explanatory powers than CLM. Essentially, this finding can help the government in designing cost-effective management and efficient tariff structure.

**Keyword:** Choice experiment; Water quality; Household preference; Choice modelling; Willingness to pay; Conditional logit model; Heterogeneous attributes