Economic Valuation of Forest Landscape Function Using a Conditional Logit Model

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Abstract : The purpose of this study is to estimate the economic value of the services and functions rendered by the forest landscape using a conditional logit model. For this study, attributes and levels of forest landscape were chosen; specifically, attributes include topographical forest type, forest type, forest density, recreational factor (side trip, accessibility of valley), and willingness to participate (WTP). Based on these factors, 48 choices sets with balanced and orthogonal form using statistical analysis system (SAS) 9.1 was adopted. The efficiency of the questionnaire was 6.02 (D-Error. 0.1), and choice set and socio-economic variables were analyzed. To reduce the cognitive load of respondents, the 48 choice sets were divided into 4 types in the questionnaire, so that respondents could respond to 12 choice sets, respectively. The study populations were citizens from seven metropolitan cities including Ibadan, Ilorin, Osogbo, etc. and annual WTP per household was asked by using the interview questionnaire, a total of 267 copies were recovered. As a result, Oshogbo had 0.45, and the statistical similarities could not be found except for urban forests, forest density, recreational factor, and level of WTP. Average annual WTP per household for forest landscape was 104,758 Naira (Nigerian currency) based on the outcome from this model, total economic value of the services and functions enjoyed from Nigerian forest landscape has reached approximately 1.6 trillion Naira.

Keywords : economic valuation, urban cities, services, forest landscape, logit model, nigeria

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