Thesis Title	An Application of Logit Model in the Stage of Modal Choice for Chiang Mai Urban Area
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Abstract

The purpose of this research is to develop the model for mode choice for Chiang Mai urban area and to study the factors influencing the mode selection. Both the nested logit and the simple multinomial logit models have been investigated. The principal data source is the origin-destination survey data carried out by Chiang Mai University with the support from the National Energy Administration in 1987. The models have been developed for each trip-purpose, i.e., all purpose trips, home-based work trips, home-based school trips, and home-based others trips. For each trip purpose, four models have been sorted (1) the highest ρ^2 value model, (2) the model using the socio-economic variables only at the household level, (3) the model using the minimum independent variables with the acceptable value of ρ^2, and (4) the model using the level of service variables only. The models indicate that both the level of service attributes and the socio-economic variables are significant in determining the mode choice. Out-of-vehicle time, in-vehicle time, cost, bus accessibility index, trip destination and distance are among the significant level of service attributes. The significant socio-economic variables are vehicle ownership, household income, work status, education level, sex and household status. The comparison shows

that, in Chiang Mai urban area, the nested logit model performs better than the simple multinomial logit model. The first level in the nested logit model is to distinguish between walking and using vehicle modes, the second level is the split between the private vehicles and public transport vehicles, and then in the third level, the private and public vehicles are divided between private cars vs. motorcycles and city buses vs. minibuses respectively.