Thesis Title	Modal Split Model for Freight Transportation: A Case Study of Freight Transportation between Bangkok and the Eastern Region of Thailand
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Abstract

This thesis is a study to develop mathematical models used for the prediction of mode choice for freight transportation between Bangkok and the eastern region of Thailand. We interviewed 113 companies providing transportation service for five major commodities: rice, sand, cement, petroleum, and container. We analyzed an amount of goods movements in the study areas and analyzed the factors influencing choice of transportation modes of the companies. The available modes are truck, train, and barge. The results show that the factors influencing mode choice were volume of product, truck ownership, transport cost, travel time, and several attributes representing level of service of each mode. The models developed in this study are composed of two sub-models: Cross-classification model and Logit model. Cross-classification models were used to forecast freight transportation by captive firms. This model indicates the relation between volume transported by trucks and independent variables classified in several levels. Logit models were used to predict freight transportation by non-captive firms. The models used an assumption that a firm would choose the mode offering the maximum benefit to the firm which is measured by utility. Most models developed in this study can be used to forecast freights for each mode with acceptable level of accuracy. The models were also used to test effects of some policies related to the development of freight transportation system.

Keywords: Freight Transportation / Modal Split Model / Freight Transport Forecast