

Abstract

Stated Preference Analysis of Air Travelers' Multiple-Airport Choice Behavior in Tokyo Metropolitan Area

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Tokyo Metropolitan area has two major commercial airports, each of which performs completely different functions. Haneda Airport, which is located near the center of the city, exclusively serves domestic flights. Meanwhile, Narita Airport, which is located far from downtown area, acts as an international gateway. Governed by this rule, residents of Tokyo have no opportunity to choose which airport to fly. Therefore, the innovative policy of developing proper flight allocation between these two airports is necessary in providing more convenient options for air travelers. The main objective of this research is to investigate the major factors underlining air travelers' choice behavior in Tokyo Metropolitan area's multiple-airport system and apply these findings as backup information for further policy implementation in order that both existing airports to be effectively utilized in the future.

As unprecedented situations of air traveling in Tokyo are introduced, the revealed preference data is impossible to be collected. Hence, in order to fulfill this main objective, stated preferences experiment is conducted using internet-based questionnaire survey. Hypothetically controlled combinations include three attributes. The first two attributes, namely airfare and flight frequency, are presented to respondents for evaluation in form of choice sets. The last attribute, access time, is computed according to each respondent's exact times used from home to airports, which are interactively asked in the survey questionnaire. Responders are requested to choose their prefer air ticket profiles operated from Haneda and Narita Airports. There are totally eight groups of experiment divided by four destinations, both domestic and international, and two travel purposes, business and recreation. In addition, several subjective rating questions are shown in order to group the respondents with similar attitudes into the same cluster.

The binary logit model is applied to estimate the parameters. In the whole picture, airfare and access time are more significant factors in respondents' airport decision-making process, while the factor of flight frequency seems to be consistent but less significant, especially for international destinations. Moreover, significance of airfare for recreational travelers is higher than that of business travelers for every groups of experiment.

Principle Component Analysis is conducted to calculate scores of each behavioral factor for every responder. Then, respondents are segmented into luxury-oriented and economy-oriented groups using Cluster Analysis. The results show that luxury-oriented people value the significant of access time higher than those of economy-oriented whose airport choice decisions depend primarily on airfare.