

Research Trends and Results

Support for Aviation Policy Formulation by Enhancement of Aviation Demand Forecasting Method

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1. Introduction

In order to provide a basis for a technical review aimed at further enhancement of the capability of airports in the Tokyo metropolitan area, the Civil Aviation Bureau publicized prediction of demand at the Transportation Policy Council on September 26, 2013 (see Figure-1). The predictive model was developed and improved by the NILIM Airport Planning Division. We also provided technical advice to the Ministry of Land, Infrastructure, Transport and Tourism on application of the model.

Furthermore, using a stated-choice survey, we are examining air transport demand changes when low cost carriers (LCCs) enter domestic aviation service between Tokyo International Airport and Kansai International Airport and the Linear Chuo Shinkansen (high-speed railway) begins the operation.

2. Estimation of Impact of Entry of LCCs on Domestic Aviation Service

(1) Overview

A revealed-preference survey is not suitable when presently nonexistent modes of transportation such as LCCs from/to HND or the Linear Chuo Shinkansen should be considered in predictions of transportation demand. In such cases, a stated-preference survey is used instead, since it can assess the inter-regional movement of passengers even when several presently-nonexistent modes of transportation are included as alternative means of transportation, whereas a revealed-preference survey can assess the movement of passengers only by existing alternatives. In order to advance the examination, we are

collecting data by stated-choice surveys and developing a prototype for a mode choice model that can treat LCCs as an independent transport mode.

(2) Results

Figure-2 shows the simulation results for the route between the Tokyo metropolitan area and Kinki area. The share of airlines is boosted by about 10% by the entry of LCCs with 50% off the Line-Whole Fare, even when the Chuo Linear Shinkansen begins operation. In this case, the total share of FSCs decreases by about half.

(3) Future Prospects

In this paper, we adopted a two-tiered transition transportation choice model for simplification in place of the three-tiered civil aviation demand forecast model officially adopted by the government. We plan to elaborate a stated-preference choice model encompassing a route choice model and an access/egress choice model, corresponding to the official civil aviation demand forecast model, in order to conduct more detailed analyses.

[Source]

TECHNICAL NOTE of NILIM No. 784

<http://www.nilim.go.jp/lab/bcg/siryou/tnn/tnn0784.htm>

Transportation Policy Council on September 26, 2013.

<http://www.mlit.go.jp/common/001018977.pdf>

Fig. 1 Prediction of aviation demand in Tokyo metropolitan area

Fig. 2 Simulation results

Figure-1 Prediction of Aviation Demand in the Tokyo metropolitan area

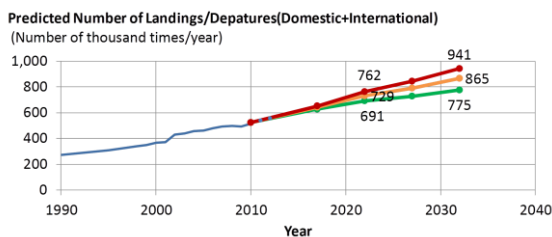


Figure-2 Simulation Result

