

A Benchmarking of Operational Efficiency in Asia Pacific International Cargo Airports



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Abstract

This paper compares operational efficiency of major cargo airports in the Asia Pacific region. The multi-dimensional scaling cluster analysis by R-square method was used as the benchmarking tool to provide airport management with a means to examine various aspects of their operational efficiency against those of other airports. Ten operational efficiency factors for the clustering and efficiency estimation of airports in the Asia Pacific region were used in a regression model to overcome the complexity of multi-dimensional scaling approach. The resulting classification is used to identify the efficiency benchmarks of leading air cargo airports which have implications for Incheon airport in Korea.

Key Words : Asian Pacific Cargo Airports, Operational Efficiency Index, Multidimensional Scaling Analysis, Benchmarking Practices, Regression Model

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I. Introduction

Recently, the business paradigm of air transport management has shifted from providing basic public service to commercial operation emphasizing on customer service. The concepts of commercialization and privatization in air transport management have appeared as the most remarkable issues, which forced airports worldwide to strategize their operation tactics to provide better service to their customers. Airports will therefore need to find a model of appropriate practices from different perspectives. Besides, benchmarking by constantly monitoring, comparing and assessing airports' operations has been developed as a tool for airport managers to adapt and efficiently manage the changing market requirements, such as privatization, commercialization and furthermore, the formation of global alliances and de-regulation in the aviation industry.

The Air Transport Research Society (ATRS) first presented the Global Airlines Benchmarking Report in 2001. In this report, the measurement metrics of the operational performance which consider different characteristics of airports and their management strategies were used to provide an accurate interpretation of significant results. The Global Airlines Benchmarking Report presented by ATRS in 2003 differentiated the size and ownership of 90 main international airports in South America, Europe and Asia and evaluated their operational performance by various productivity indicators such as unit cost, cost competitive factors, and other financial factors (Oum and Yu, 2004).

Further from the study of Oum and Yu (2004), there are several objectives that this paper aims to achieve. Firstly, we propose a meaningful comparison of airport operational efficiency. Secondly, the relationships between the efficiency measures and airport characteristics as well as operational strategies in order to better understand the observed differences in airport clustering will be investigated. Next, how different airport group management strategies and how air cargo handling facilities impact on airport group evaluation will be examined. Finally, this paper aims to group the studied airports in terms of their cargo operations efficiency using the Multi-dimensional Scaling analysis. Based on this, leading air cargo airports in the Asia Pacific region can be benchmarked by analyzing and comparing their cargo operational efficiency performance, of which the results can help to determine the direction for

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