

Chapter 28

Performance Efficiency Measurement of Airports: A Comparative Analysis of Airports Authority of India and Public Private Partnership

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ABSTRACT

This article describes how to improve the overall efficiency and effectiveness of the aviation sector and also to source extra funding, the Government of India has paved the way for private investors through to a Public Private Partnership (PPP) model since the 1980s. This liberalization step in the Indian aviation market has minimized the institutional barriers which have hindered the freedom and flexibility of air transport operations among private investors. Now, competition within the aviation sector has become fiercer; the Airports Authority of India (AAI) and Public Private Partnership (PPP) in Indian airports are not only providing varied services, but also attracting consumers with new infrastructure and full modern facilities. The importance of this article is because after privatization, no studies have been conducted to examine the efficiency of Indian airports by using Data Envelopment Analysis (DEA). An output-oriented DEA model is employed to determine the efficiency score of airports by taking a sample of 15 airports, including airports run by PPP, for comparison. Output-oriented DEA calculates the efficiency by maximizing the outputs for a given level of inputs. Therefore, this article contributes to the existing literature on Indian airports. Based on available data, three variables - length of runways, terminal size and number of check-in counters, are used as inputs and two variables - passenger movement and aircraft movement, are used as outputs.

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INTRODUCTION

The transport sector is seen as the lifeline of an economy (Koçak, 2011). To a large extent, the growth and development of an economy is dependent on the growth of the transport sector. The transport sector consists of road, railways, ports and airports. The airport sector is considered as one of the essential elements of the transport sector, as growth of the airport sector is crucial for the overall growth of the transport sector and the Indian economy. Modern and full-facility airports can help India to move forward as one of the most powerful economies of the world (Kumar et al., 2017a; Kumar et al., 2017b). Airports and airlines have historically been considered as vital components of the national aviation system, and therefore both are regarded as public utilities. An earlier traditional airport management model was more prevalent but governments realized that it is an unsustainable model in the long run because of inefficiency and the burden of financing airports. Since the 1980s, airports have been privatized in an effort to become more efficient and to allow governments to use funding in other ways. Currently, the government regards airports as potential profit-making enterprises instead of just considering them as suppliers of infrastructure.

Airport Infrastructure in India

Earlier Indian airports were administered by the Civil Aviation Department, Government of India, till the creation of the International Airports Authority of India (IAAI) in 1972 and subsequently the National Airports Authority (NAA) in 1986. Airports Authority of India (AAI) was constituted by an Act of Parliament on 1st April 1995. It came into being by merging the erstwhile National Airports Authority and the International Airports Authority of India. Through the merger, a distinct organization evolved being responsible for creating, improving, maintaining and supervising civil aviation infrastructure (Airport Authority of India). AAI manages 125 airports, which include 11 International Airports, 8 Customs Airports, 81 Domestic Airports and 27 Civil Enclaves at Defence airfields. The report quoted from AAI (Airport Authority of India) on traffic trends at all airports of AAI shows that in the years 2002-2003, 2003-2004 and 2004-2005 passenger traffic increased by 9.35%, 11.56% and 21.5% respectively. Similarly, there was also rapid growth in freight and aircraft traffic. Cargo traffic grew by 14.64%, 9.1% and 19.8% while aircraft movement increased by 9.9%, 14.4% and 11.88% respectively.

According to the report of the Investment Commission (Investment Strategy for India, 2006), the encouraging statistics on the trend of human population and rapid growth in the economy points to a continued expansion in domestic passenger traffic and international outward traffic. The rise in traffic and cargo movement leads to over-crowding situations at different airports in India. This is apparent in Chennai, Delhi, Bangalore, Hyderabad, Kolkata and Mumbai. That's why the country requires modernization of metro airports, development of new airports, generation of technology for efficient treatment of passengers, cargo and better practices in management.

Public Private Partnership in Indian Airports

Since the revenue generated by AAI was found to be inadequate to satisfy spending requirements, public private partnership became essential to bridge the funding gap. Public Private Partnership (PPP) projects deliver an infrastructure service which is based on a long-term contract between government or legal entity on one side and a private sector company on the other. It is particularly targeted towards

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