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EXPLORING THE EVOLUTION OF ASIA PACIFIC AIR TRANSPORTATION NETWORK STRUCTURE

Collin WH Wong[a], Tommy Cheung[b], Yue Wang[c]
[abc] Hang Seng Management College, Hong Kong, China
Corresponding email: collinwong@hsmc.edu.hk

Abstract

The Asia Pacific air traffic volumes have grown significantly since the 21st century. In 2014, the Asia Pacific passenger traffic volumes accounted for one third of the world volume, while the air cargo accounted for 40% of the market share. Air transport industry and other related industries, such as tourism and hospitality, all put their focuses on identifying the blooming routes, so as to develop and expand the Asia market. In this study, we analyzed the past five years' air traffic data of the world, including routing and capacity. Applying various network properties, including degree centrality, betweenness centrality, clustering coefficient and node strength, we analyzed the developments of the three tiers airports, as well as new airports. The airports were classified according to their traffic volumes. The study shows that first tier airports, with the highest traffic volumes, outperformed other tiers airports substantially in terms of growth rates of degree centrality and betweenness centrality. Among the second and third tier airports, the airports in China had better performances than airports in other countries. This study also analyses the effect of an individual airport and a particular route on the global aviation network evolution. Finally, managerial insights are identified to provide a comprehensive and in-depth picture of Asia Pacific aviation industry development.

Keywords: Aviation, Network structure, Airport, Routing.

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