

## **Abstract**

Given the unique geographical challenges and opportunities presented by archipelagos, air transport plays a critical role in facilitating connectivity, trade, and tourism, which are essential for economic development. Through the utilisation of quarterly panel data of Hawaii's counties, spanning from 2001 to 2021, employing Panel Autoregressive Distribution Lag Model (PARDL) and Panel Vector Error Correction Model (VECM), this research examines the short-run and long-run relationships between air transport (measured by passenger and air freight) and real GDP in Hawaii. The findings reveal that there is significant relationship both in the short-run and long-run for both passengers and air freight. Specifically, the results suggest that increases in air passenger and cargo volumes contribute positively to Hawaii's GDP, but these effects materialise with a lag of approximately three to four periods. This lag highlights the delayed but substantial influence of air transport infrastructure and activities on economic performance. These results implies that investments in aviation infrastructure are critical for sustaining economic growth in Hawaii. Furthermore, this research contributes to the understanding of the pivotal role of air transport in island economies and provides valuable insights for policymakers, aviation authorities, and economic planners aiming to enhance economic resilience and growth in archipelagic regions.

**Keyword:** Air Transport, Economic Growth, Archipelago, Hawaii, Panel Autoregressive Distributed Lag, Panel Vector Error Correction Model