

Abstract

Operational performance is a key indicator of efficiency and competitiveness in the aviation industry. It is commonly measured using indicators such as on-time performance, aircraft utilization, load factors, fuel efficiency, and operational disruptions. The general objective of the study was to determine the effect of operational efficiency strategies on operational performance in Kenya's aviation industry. Specifically, the study examined the effect of strategic fleet management, digital technology integration in operations, turnaround time optimization, and competency alignment on operational performance. In addition, the study assessed the mediating effect of service quality on the relationship between operational efficiency strategies and operational performance. The study was anchored on the Resource-Based View Theory, Dynamic Capabilities Theory, and Service Quality Theory and adopted an explanatory research design. The target population comprised 320 employees in Kenya's aviation industry working in the Operations Management, Engineering, Human Resource, and Training departments. A sample of 178 respondents was selected using stratified random sampling to ensure proportional representation across departments. Primary data were collected using structured questionnaires. A pilot study involving 18 respondents (10% of the sample) was conducted to test reliability, with Cronbach's Alpha used to assess internal consistency, while validity was determined using the Content Validity Index. Data were coded and analyzed using the Statistical Package for Social Sciences (SPSS). Both descriptive and inferential statistics were applied, including means, standard deviations, and correlation analysis to test relationships and mediation effects. The findings showed that strategic fleet management ($\beta = 0.50$, $p < 0.005$) and turnaround time optimization ($\beta = 0.53$, $p < 0.005$) significantly enhanced operational performance, while digital technology integration had a significant negative effect ($\beta = -0.24$, $p = 0.05$), indicating possible implementation challenges. Service quality significantly mediated the relationship between operational efficiency strategies and operational performance ($\beta = 0.0318$, $p = 0.0478$), strengthening these effects. Overall, operational efficiency strategies improved performance, with service quality playing a reinforcing role. The study recommended investment in fleet systems, turnaround optimization, effective digital technology adoption, staff training, and continuous service quality improvement to enhance operational efficiency in Kenya's aviation industry.