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IMPACT OF FINANCE ON THE PERFORMANCE OF AVIATION BUSINESSES IN NIGERIA

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ABSTRACT: This study examined how finance influences the performance of aviation businesses in Nigeria. Using an ex-post facto research design, secondary data covering 1998 to 2024 were sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin and National Insurance Commission (NAICOM) reports. The study aimed to assess the effects of aviation income and aviation insurance premiums on the output of the aviation sector. Data were analysed using descriptive statistics and the Ordinary Least Squares (OLS) method. Model accuracy was checked using the histogram normality test. Findings show that both aviation income and aviation insurance finance have positive and significant effects on the performance of aviation businesses. This means that revenue generation and insurance financing play essential roles in supporting the growth and stability of the sector. The study concludes that finance is a key driver of aviation business development in Nigeria. Based on these findings, it is recommended that aviation firms adopt more strategic revenue-generation mechanisms and that policymakers enforce comprehensive insurance practices to reduce financial vulnerability and support sustainable aviation development in Nigeria.

Keywords: *Aviation finance, Aviation income, Insurance premiums, Business performance, Aviation sector, OLS regression, Revenue generation, Policy recommendations, Nigeria.*

INTRODUCTION

The performance of aviation businesses plays a crucial role in enhancing a country's connectivity, economic productivity, and global competitiveness. Performance, in this context, refers to the ability of aviation businesses to efficiently deliver services, maintain safety and regulatory standards, manage operational costs, and contribute to economic growth. A key indicator often used to measure this performance is the aviation sector output**,** which includes the overall contribution of aviation services to national GDP, air traffic volumes, service reliability, and customer satisfaction (ICAO, 2023). In Nigeria, the aviation industry serves as a vital economic engine, but it faces persistent challenges such as inadequate infrastructure, high operational costs, policy inconsistencies, and safety concerns (Okonkwo & Nwankwo, 2022). The sector's underperformance, despite its high growth potential, continues to raise questions about the underlying structural and financial issues limiting its sustainability and growth trajectory.

Aviation businesses in Nigeria have struggled with profitability and service efficiency, owing to rising fuel prices, currency volatility, debt overhangs, and low passenger volumes in certain regions. These operational hurdles directly affect productivity levels, route expansion, staff capacity, and investment in modern aircraft and technologies (Adewale & Sule, 2023). One major factor that consistently emerges in the conversation around sectoral inefficiency is finance. More specifically, how financial inflows, both operational revenues (aviation income) and strategic financial provisions (aviation premiums) - influence the ability of aviation firms to improve output, remain competitive, and scale their operations. The need for accessible and sustainable finance has thus become central to the discourse on improving aviation performance in Nigeria.

Finance, in this study, refers broadly to the availability and management of monetary resources required for day-to-day operations, investment in capital-intensive infrastructure, and regulatory compliance. Aviation income encompasses revenues generated from ticket sales, cargo services, and auxiliary services such as leasing and handling fees, while aviation premiums include financial supports such as government subsidies, insurance compensations, and foreign investment

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incentives. Access to adequate finance enables airlines to modernize fleets, enhance service delivery, train personnel, and expand flight networks, all of which boost the overall output of the aviation sector (IATA, 2024). In Nigeria, the unstable macroeconomic environment, limited access to credit, and a weak investment climate have significantly constrained the flow of these funds, thereby limiting the growth and performance capacity of local airlines (Oshikoya et al., 2023). The extent to which these two financial dimensions impact aviation output is central to understanding the sector's long-term sustainability and competitiveness.

Several studies have attempted to examine the relationship between finance and aviation performance, both globally and within Africa. For instance, Zhang and Graham (2022) assessed how financial deregulation influenced airline efficiency in Asia and found that access to external capital significantly improved airline performance. Adegbite and Adebayo (2023) studied West African carriers and highlighted that capital inadequacy remains a key bottleneck for regional airline growth. Ojo and Ezenwa (2021), focusing on Nigeria, noted that poor access to aviation finance has led to fleet underutilization and frequent operational downtimes. Kalu and Okonkwo (2024) also found that Nigerian airlines that accessed aviation insurance and government-backed financial guarantees showed better resilience during economic shocks. Additionally, Smith and Roderick (2020) emphasized that aviation premiums in Europe helped mitigate the effects of COVID-19 on regional carriers, while Mutiso and Kiragu (2022), in Kenya, observed that aviation revenues were the most significant predictor of performance post-pandemic. However, many of these studies either focus exclusively on passenger volumes or lack an in-depth analysis of specific financial dimensions. This study seeks to fill that gap by examining aviation income and aviation premiums as core financial variables, and how they influence aviation sector output in Nigeria, providing both empirical insights and policy implications for improved financial strategies in the sector.

Statement of the Problem

In recent years, the performance of the aviation sector in Nigeria has continued to generate concern among stakeholders, despite its critical role in facilitating trade, tourism, and economic development. While the global aviation industry is projected to recover and even surpass pre-pandemic levels by 2025 (IATA, 2024), Nigeria's aviation businesses remain hampered by underperformance. According to the National Bureau of Statistics (NBS, 2023), aviation sector output declined by 11% in Q2 2023 compared to the same period in 2022. Domestic airlines continue to operate at below-capacity levels, with frequent flight delays, route suspensions, aircraft shortages, and deteriorating infrastructure. Furthermore, the cost of aviation fuel rose by over 200% between 2021 and 2023, contributing significantly to operational challenges. In spite of government interventions such as the Aviation Roadmap and financial support during the COVID-19 period, the sector's productivity has not shown corresponding improvement. These persistent issues raise critical questions about the actual drivers of poor performance, especially the role of finance in sustaining aviation businesses.

Existing literature suggests a strong relationship between financial capacity and the performance of firms across sectors, including aviation. However, scholarly views differ regarding the exact dimensions of finance that most influence aviation performance. For instance, while Mutiso and Kiragu (2022) emphasized aviation revenue as the primary driver of performance in Kenya, Zhang and Graham (2022) found that access to government premiums and financial deregulation were more impactful in Asia. In Nigeria, studies such as Ojo and Ezenwa (2021) and Adewale and Sule (2023) have highlighted limited finance as a major constraint to sectoral growth, but they often treat finance as a generic construct without disaggregating it into measurable dimensions like aviation income or aviation premiums. This lack of depth creates a gap in understanding the nuanced role that specific financial elements play in shaping aviation sector output. Moreover, most studies focus on broader transport performance or macroeconomic impacts without isolating the internal financial structure of aviation businesses.

Another critical issue is the time-period and scope limitations of prior research. Many studies rely on pre-COVID data or focus on short-term performance indicators like flight frequency or passenger volume, neglecting more comprehensive output measures tied to GDP contribution and operational sustainability. Similarly, there is a scarcity of recent empirical studies that use up-to-date post-pandemic data to assess the

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interplay between finance and aviation performance in Nigeria. This dearth of current, locally contextualized, and financespecific studies presents a major limitation in the body of knowledge and policy direction. This study seeks to address this problem by analyzing the impact of two core financial dimensions: aviation income and aviation premiums on a key performance indicator, aviation sector output. By doing so, it aims to provide empirical evidence that not only clarifies the nature of the financial performance relationship but also informs targeted interventions for enhancing the competitiveness and resilience of Nigeria's aviation sector.

Objectives of the Study

The main objective of this study is to examine the impact of finance on the performance of aviation businesses in Nigeria. The specific objectives are to:

1. Assess the effect of aviation income on aviation sector output in Nigeria.
2. Evaluate the influence of aviation premiums on aviation sector output in Nigeria.

Research Questions

The study is guided by the following research questions:

1. To what extent does aviation income affect aviation sector output in Nigeria?
2. How does aviation premium influence aviation sector output in Nigeria?

Research Hypotheses

The following null hypotheses are formulated to guide the empirical investigation:

H_{01}: Aviation income has no significant effect on aviation sector output in Nigeria.

H_{02}: Aviation premium has no significant effect on aviation sector output in Nigeria.

2.0 LITERATURE REVIEWS

Conceptual Review

Finance

Finance refers to the management, creation, and study of money, investments, and other financial instruments. In a business context, it involves the acquisition and utilisation of funds for day-to-day operations, long-term investments, and strategic planning. According to Abubakar and Bala (2022), finance plays a central role in the survival and growth of businesses, as it determines the availability of resources needed to maintain operations, expand services, and enhance competitiveness. In the aviation sector, finance is considered a lifeline that supports various aspects such as aircraft acquisition, maintenance, training, fuel procurement, and compliance with international safety standards. Finance can be broadly classified into two categories: internal finance, which includes revenue generated from operations, and external finance, which includes government support, loans, grants, and insurance-based compensation (Oshikoya et al., 2023). In aviation, effective financial management ensures operational efficiency, cost control, and long-term sustainability. Moreover, it determines the ability of firms to respond to macroeconomic shocks, invest in innovation, and scale their services in response to demand. As noted by IATA (2024), the availability and proper allocation of finance directly correlate with improvements in service delivery, infrastructure development, and sectoral output, making finance a key determinant of performance in the aviation industry.

Proxies of Finance in Aviation

Aviation Income

Aviation income refers to the total revenue generated from the operational activities of aviation firms, including passenger ticket sales, cargo charges, aircraft leasing, aircraft maintenance services, airport fees, and ancillary services such as onboard sales or baggage handling. According to Mutiso and Kiragu (2022), aviation income is the primary internal financial resource that sustains the operations and capital expenditure of aviation businesses. It provides the liquidity needed to meet short-term obligations, finance operational costs, and reinvest in critical infrastructure. In many developing countries, including Nigeria, aviation income is especially important because external financing options such as capital markets or institutional credit are either underdeveloped or not easily accessible. IATA (2024) asserts that consistent and growing aviation income enables airlines to achieve operational stability, improve route efficiency, and maintain safety standards. The income level of an aviation firm often reflects its market presence, customer loyalty, and pricing efficiency. It also provides a financial cushion against economic volatility and rising input costs, thereby playing a pivotal role in determining aviation sector performance.

Aviation Premium

Aviation premium refers to the external financial inflows or compensation mechanisms available to aviation businesses, such as insurance payouts, government

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subsidies, fiscal incentives, and emergency financial support during economic crises. These premiums act as financial buffers that protect aviation businesses from operational shocks, natural disasters, accidents, pandemics, or sudden economic downturns. As explained by Smith and Roderick (2020), aviation premiums are not earned like income but are critical in maintaining business continuity when internal revenue generation is insufficient. In the Nigerian context, aviation premiums often include government-backed bailouts, interest-free loans, or tax reliefs provided to keep the industry afloat during turbulent periods. For instance, during the COVID-19 pandemic, many Nigerian airlines received financial support to cover fixed costs and maintain minimum operational capacity (Kalu & Okonkwo, 2024). These financial interventions help airlines manage unforeseen risks and maintain performance levels even during adverse conditions. As such, aviation premiums serve as a critical proxy of finance, especially in environments where market risks and uncertainties are high.

Performance of Aviation Business

The performance of aviation businesses refers to the extent to which airline operators and related service providers achieve their operational, financial, and strategic goals. Performance is usually measured through various indicators, including profitability, service reliability, customer satisfaction, market share, and economic contribution. According to Zhang and Graham (2022), performance in aviation is multi-dimensional, encompassing operational efficiency, safety compliance, cost-effectiveness, and contribution to national GDP. In developing countries like Nigeria, performance is often gauged by the ability of airlines to maintain flight schedules, sustain profitability, manage operating costs, and contribute meaningfully to transportation infrastructure. Adegbite and Adebayo (2023) further argue that performance must also include sustainability, resilience, and adaptability to macroeconomic fluctuations. An airline that can maintain consistent service delivery, invest in technology, and comply with regulatory frameworks is generally seen as performing well. Therefore, aviation business performance goes beyond financial profit; it reflects a combination of economic viability, service quality, and long-term operational stability. Performance outcomes, particularly aviation sector output, help stakeholders understand the real-time health and contribution of the sector to the broader economy.

Measures of Aviation Business Performance

Aviation Sector Output

Aviation sector output refers to the total economic value generated by aviation-related activities within a defined period, usually represented in terms of contribution to national GDP. It includes revenues from passenger transport, cargo handling, aircraft services, airport operations, and other auxiliary aviation services. According to the International Civil Aviation Organization (ICAO, 2023), aviation sector output is one of the most reliable indicators of the health and performance of the industry. It reflects not only the commercial success of individual airlines but also the broader contribution of aviation to economic growth, trade facilitation, and regional integration. In Nigeria, aviation sector output is tracked quarterly by the National Bureau of Statistics and is used to measure the industry's direct and indirect contributions to GDP. Oshikoya et al. (2023) emphasise that aviation sector output captures both operational efficiency and financial productivity, making it a suitable indicator for assessing the relationship between finance and performance. It also provides a macro-level understanding of how financial investments and income streams impact the overall contribution of aviation to the national economy.

Theoretical Framework

The relationship between finance and business performance has long been a subject of academic interest across various fields of economics, finance, and management. Numerous theories explain how financial resources influence organisational outcomes, ranging from broad economic models to sector-specific frameworks. At a general level, Resource-Based Theory (RBT) posits that firms with access to valuable, rare, inimitable, and nonsubstitutable (VRIN) resources, including finance, are better positioned to achieve sustained competitive advantage and superior performance (Barney, 1991; Wernerfelt, 1984). Within this theory, finance is viewed as a strategic resource that enables firms to acquire other critical inputs such as labour, technology, and infrastructure. RBT has been widely applied across industries, including transportation and aviation, to explain why firms with greater access to financial and non-financial resources tend to outperform their counterparts (Mutiso & Kiragu,

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2022). However, while RBT provides a broad understanding of how resources like finance affect firm-level performance, it does not fully account for the mechanisms through which finance specifically affects sector-level outputs in heavily regulated and capitalintensive sectors like aviation.

A more sector-relevant theory that directly supports this study is the Financial Intermediation Theory, which argues that financial systems through banks, markets, and instruments facilitate the efficient allocation of resources by connecting surplus units (investors) with deficit units (businesses) (Levine, 2005). This theory emphasises the role of financial access, depth, and efficiency in promoting productive investment and economic growth. In the context of aviation, financial intermediation helps channel funds into airline operations, airport development, fleet acquisition, and other core activities that contribute to sectoral output. The theory assumes that where intermediation is efficient, aviation firms can access affordable financing, stabilise their cash flow, and make long-term investment decisions that enhance performance. As noted by Adegbite and Adebayo (2023), effective intermediation in the aviation sector leads to improved output, better service delivery, and greater resilience to external shocks. This theory is particularly relevant in Nigeria, where financial markets are evolving and the aviation sector heavily relies on both internally generated revenue and external financial support mechanisms.

To narrow it down further and make it specifically applicable to the dual financial constructs examined in this study, aviation income and aviation premiums, the Pecking Order Theory (POT) offers a strong explanatory basis. Initially developed by Myers and Majluf (1984), POT argues that firms prefer to finance activities using internal funds (e.g., income or retained earnings), and only seek external funding (e.g., debt, government subsidies, or insurance compensations) when internal resources are insufficient. This behavioural theory is grounded in the assumption that information asymmetry and financing costs influence how firms structure their capital decisions. Applied to aviation businesses, this theory suggests that airlines will rely primarily on aviation income to fund their operations and expansions, and only turn to aviation premiums such as government bailouts or insurance payouts when facing financial shortfalls or crises. As highlighted by Oshikoya et al. (2023), Nigerian airlines often experience liquidity constraints that force them to seek state-backed interventions or insurance compensation, especially in periods of economic turbulence. Therefore, the pecking order theory not only supports the selection of the study's financial variables but also provides a logical framework for understanding how variations in these financial sources affect aviation sector output.

In conclusion, while the Resource-Based Theory gives a broad lens for understanding the value of financial resources, and Financial Intermediation Theory explains how financial systems support economic activity, the Pecking Order Theory most directly aligns with this study. It provides a precise theoretical justification for investigating aviation income (as internal financing) and aviation premiums (as external financing), and how both influence aviation sector output. As such, Pecking Order Theory forms the core theoretical underpinning of this research.

Empirical Reviews

Zhang and Graham (2022) conducted a quantitative study on the impact of financial deregulation on airline efficiency in the Asia-Pacific region. Using panel data of 23 airlines across seven countries from 2008 to 2020, the researchers applied a stochastic frontier analysis to evaluate how different forms of finance particularly government intervention, debt instruments, and foreign direct investment affected technical efficiency and operational performance. The study found that access to diversified financial sources improved fleet utilisation rates, route expansion, and profitability. Interestingly, the research showed that internal revenues such as ticket sales had a more sustained impact on efficiency than external finance in stable markets. The findings support the notion that consistent internal income provides stability and growth leverage in the aviation industry. This directly informs the current study by underscoring the importance of aviation income as a driver of sectoral output, especially in emerging markets like Nigeria where financial markets are still developing.

Mutiso and Kiragu (2022) examined the role of aviation revenue streams on the performance of commercial airlines in Kenya using a correlational research design. The study utilised primary data collected through structured questionnaires administered to 52 finance and operations managers in the aviation sector, and secondary data from regulatory authorities. Their

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analysis revealed that internally generated revenues, particularly from cargo services and passenger operations, had a significant positive effect on organisational performance indicators such as service coverage, profitability, and customer retention. The study further found that when these revenues were reinvested into infrastructure and fleet maintenance, performance gains were even higher. These findings align with the current study's focus on aviation income as a key proxy for finance and reinforce its relevance to aviation sector output, particularly in sub-Saharan Africa where airlines rely heavily on self-generated revenue.

Ojo and Ezenwa (2021) assessed the relationship between financial access and operational efficiency in Nigeria's aviation sector. Their study covered five major local airlines over a ten-year period (2010 - 2020), using regression analysis to examine the link between credit availability, internally generated revenue, and key performance indicators such as aircraft availability, route efficiency, and revenue per passenger kilometre. The results indicated that poor access to both bank credit and investment finance negatively affected fleet modernisation and service delivery. However, aviation income showed a moderately significant effect on performance, particularly in periods of economic stability. This study provides valuable empirical support for including aviation income in the current research model and highlights the challenges of external financing in developing economies, thereby strengthening the rationale for evaluating both income and premium - based finance streams.

Adegbite and Adebayo (2023) explored capital adequacy and its impact on regional airline performance in West Africa, with a special focus on Nigeria and Ghana. The researchers employed a panel regression model covering 12 regional carriers from 2012 to 2021. Key variables included working capital ratio, operating income, capital investment, and sectoral output. The study found a strong, statistically significant relationship between operating income and performance indicators, especially in firms with structured financial reporting systems. Capital shortfalls, on the other hand, were found to reduce aviation output and increase operational downtime. The study's implication is that airlines with more stable income flows can better maintain operational efficiency and withstand market volatility. This aligns with the present study's conceptualisation of aviation income as a crucial financial variable influencing output, while also highlighting the need to consider structured external support such as aviation premiums.

Kalu and Okonkwo (2024) examined the role of government-backed financial guarantees and premiums in enhancing the resilience of Nigerian airlines during economic shocks, particularly the COVID-19 pandemic. The study applied a case-study approach, analysing data from three domestic airlines that received intervention funds or insurance compensation during 2020–2022. It found that these aviation premiums played a crucial role in sustaining employment, maintaining minimal operations, and preventing business closure. The research highlighted that such financial interventions positively impacted short-term performance and enabled recovery planning. Though temporary in nature, aviation premiums proved instrumental in stabilising output and keeping the aviation sector active. This empirical evidence strongly justifies the inclusion of aviation premiums as a financial proxy in the current study and supports the investigation into how such interventions translate into measurable aviation sector output in Nigeria.

Smith and Roderick (2020) provided a comparative empirical study on the impact of aviation insurance and government premiums on airline performance in Europe during the COVID-19 period. Using data from Eurocontrol, the European Commission, and major airline financial reports between 2019 and 2021, the authors employed a difference-in-difference analysis to examine how state support and insurance payments influenced revenue recovery, route reinstatement, and capacity utilisation. They found that airlines that received substantial government premiums bounced back faster, with measurable improvements in output by late 2021. The research also showed that the effect of premiums was more significant when paired with strong internal revenue. These findings provide further empirical support for the current study by validating the impact of both internal and external finance, aviation income and aviation premiums on aviation performance indicators such as sectoral output. It also helps frame the importance of exploring these relationships in the Nigerian context, where similar financial challenges and interventions exist but have been less empirically explored.

Methodology

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This study adopts an ex-post facto research design to examine the impact of finance on the performance of aviation businesses in Nigeria, focusing on the period from 1998 to 2024. The design is appropriate because the data under investigation - aviation income, aviation premiums, and aviation sector output already exist and cannot be manipulated. The study relies entirely on secondary data sourced from reputable government and international institutions, including the Central Bank of Nigeria (CBN), and the National Insurance Commission (NAICOM) annual report. The variables used include aviation income and aviation premiums as proxies for finance, while aviation sector output serves as the indicator of performance. The data will be analysed using descriptive statistics, correlation analysis, and multiple regression techniques to determine the extent and significance of the relationships among the variables. All analyses will be conducted using E-views 10, with results presented in tables and charts for clarity and interpretation.

Model Specification

To investigate the impact of finance and aviation business performance in Nigeria, the study employs an OLS regression model. The model can be specified functionally as:

AviationSOPT = f(**AviationINC**, **AviationPREM**) ……. (i)

Explicitly, this is specified to carry its parameters

$\mathbf{AviationSOPT}_t = \beta_0 + \beta_1\mathbf{AviationINC}_t + \beta_2\mathbf{AviationPREM}_t + \epsilon t$ ..... (ii)

Where:

$AviationSOPT_t$ = Aviation Expansion (proxied by aviation output) in year t.

$AviationINC_t$ = Aviation Income in year t .

$AviationPREM_t$ = Aviation Insurance Financing (Premium) in year t. β_0: Intercept term.

β_1,β_2: Coefficients representing the marginal effects of Aviation Income and Aviation Insurance Financing on Aviation Performance.

ϵt: Error term, capturing unobserved factors and random disturbances.

4.0 DATA ANALYSIS AND DISCUSSION

Appendix 1: Data of Finance on the Performance of Aviation Businesses in Nigeria

YEAR	Aviation Income ₦, Bill	Aviation Premium ₦, Mill	Aviation Sector Output ₦, Bill
1998	6.82	893.92	14.28
1999	7.69	956.78	14.63
2000	9.20	1,335.26	15.22
2001	10.53	1,625.32	15.83
2002	14.03	2,547.35	18.84
2003	15.37	4,467.89	20.23
2004	16.76	5,598.01	21.42
2005	18.29	5,032.95	22.66
2006	22.41	5,315.48	24.37
2007	25.44	7,154.96	26.21
2008	25.75	13,012.41	28.20
2009	29.20	10,083.69	30.44
2010	32.67	15,071.67	32.67
2011	56.49	16,680.44	51.89
2012	65.61	16,636.39	54.10
2013	76.91	9,561.03	59.14
2014	84.41	12,987.83	60.87

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2015	95.74	10,242.06	63.12
2016	94.50	10,851.24	60.05
2017	105.86	10,568.12	61.16
2018	149.35	14,740.78	73.81
2019	198.62	16,608.87	83.53
2020	151.05	16,608.87	52.64
2021	206.54	17,854.26	63.01
2022	268.67	18,788.31	79.54
2023	330.80	19,722.35	96.07
2024	392.92	20,656.39	112.60

Source: CBN Bulletin, and NAICOM Report

The data from 1998 to 2024 reveals a consistent upward trend in Nigeria's aviation income, insurance premiums, and sector output, indicating that increased financial investment has played a pivotal role in expanding aviation businesses. This steady growth highlights the sector's responsiveness to funding, with aviation income rising from ₦6.82 billion in 1998 to ₦392.92 billion in 2024, and sector output climbing from ₦14.28 billion to ₦112.60 billion, underscoring the critical role of finance in driving aviation development in Nigeria within the African context.

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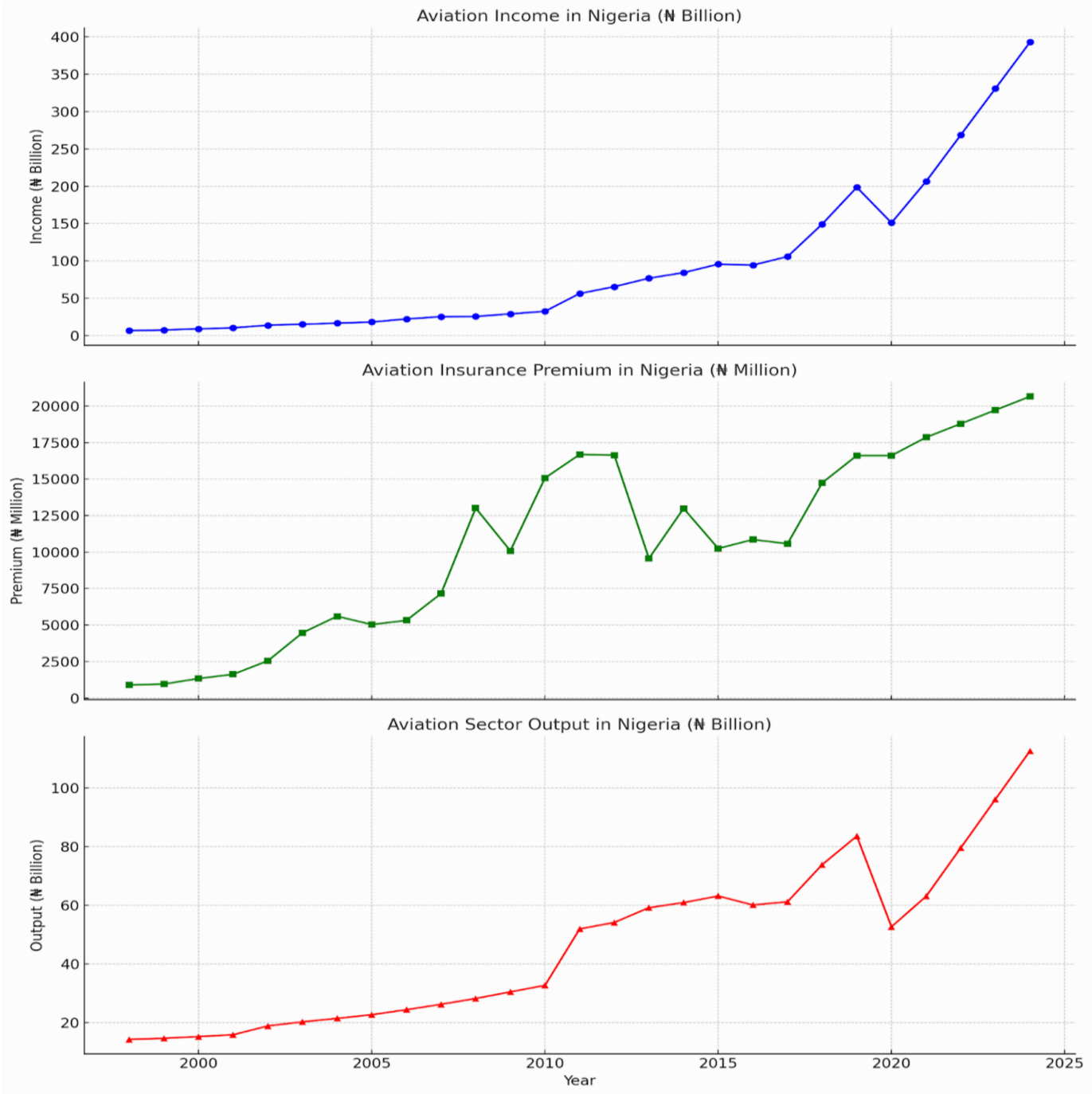

Fig 1: Visual Illustration of Trend Analysis of Data

Here are the separate visual illustrations for each variable:

1. **Aviation Income** shows a strong and steady increase over the years, especially after 2010.
2. **Aviation Premium** exhibits fluctuations but generally trends upward, with significant spikes around 2008 and 2010.

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3. **Aviation Output** demonstrates consistent growth, reflecting expanding productivity in the aviation sector.

Each graph clearly illustrates the individual contributions of financial factors to the development of Nigeria's aviation industry over time

Table 2: Descriptive Statistics

	AVIATIONSOPT	AVIATIONINC	AVIATIONPREM
Mean	46.53856	93.02409	10577.88
Median	51.88995	56.49478	10568.12
Maximum	112.6002	392.9244	20656.39
Minimum	14.27691	6.824278	893.9200
Std. Dev.	27.58557	104.6066	6359.930
Skewness	0.578991	1.475688	-0.110607
Kurtosis	2.439718	4.333612	1.706841
Jarque-Bera	1.861693	11.80028	1.936347
Probability	0.394220	0.002739	0.379776
Sum	1256.541	2511.650	285602.6
Sum Sq. Dev.	19785.06	284506.1	1.05E+09
Observations	**27**	**27**	**27**

Source: E-views 10, 2025

The descriptive statistics show that aviation sector output (mean = 46.54), income (mean = 93.02), and insurance premium (mean = ₦10,577.88 million) have all grown substantially over the years, with aviation income displaying the highest variability (Std. Dev. = 104.61) and a strong right skew (Skewness = 1.48), indicating occasional high income years. Aviation premium appears relatively symmetrically distributed (Skewness ≈ -0.11), while aviation output is moderately right-skewed. Only aviation income is significantly non-normally distributed (Jarque-Bera p = 0.0027), suggesting potential outliers or uneven growth trends in income. Overall, the data reflect dynamic but uneven growth patterns across financial indicators in Nigeria's aviation sector.

Table 3: Ordinary Lest Square (OLS) Regression Result

Dependent Variable: AVIATIONSOPT
Method: Least Squares
Date: 07/30/25 Time: 23:45
Sample: 1 27
Included observations: 27

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	14.90722	3.731160	3.995331	0.0005

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AVIATIONINC	0.173386	0.028125	6.164839	0.0000
AVIATIONPREM	0.001466	0.000463	3.168100	0.0041

R-squared	0.894864	Mean dependent var	46.53856
Adjusted R-squared	0.886102	S.D. dependent var	27.58557
S.E. of regression	9.309780	Akaike info criterion	7.404447
Sum squared resid	2080.128	Schwarz criterion	7.548429
Log likelihood	-96.96004	Hannan-Quinn criter.	7.447260
F-statistic	102.1376	Durbin-Watson stat	2.025765
Prob(F-statistic)	0.000000		

Source: E-views 10

The OLS regression results reveal that both aviation income and aviation insurance premium have a statistically significant positive effect on aviation sector output in Nigeria, with coefficients of 0.1734 ($p < 0.0001$) and 0.0015 ($p = 0.0041$) respectively. The model fits the data well, as indicated by a high R-squared value of 0.8949, meaning approximately 89% of the variation in aviation output is explained by the independent variables. The DurbinWatson statistic of 2.03 suggests no autocorrelation in the residuals, and the overall model is highly significant (F-statistic $p = 0.0000$), confirming the strong influence of financial investment on sectoral performance.

Post-Analysis Test:

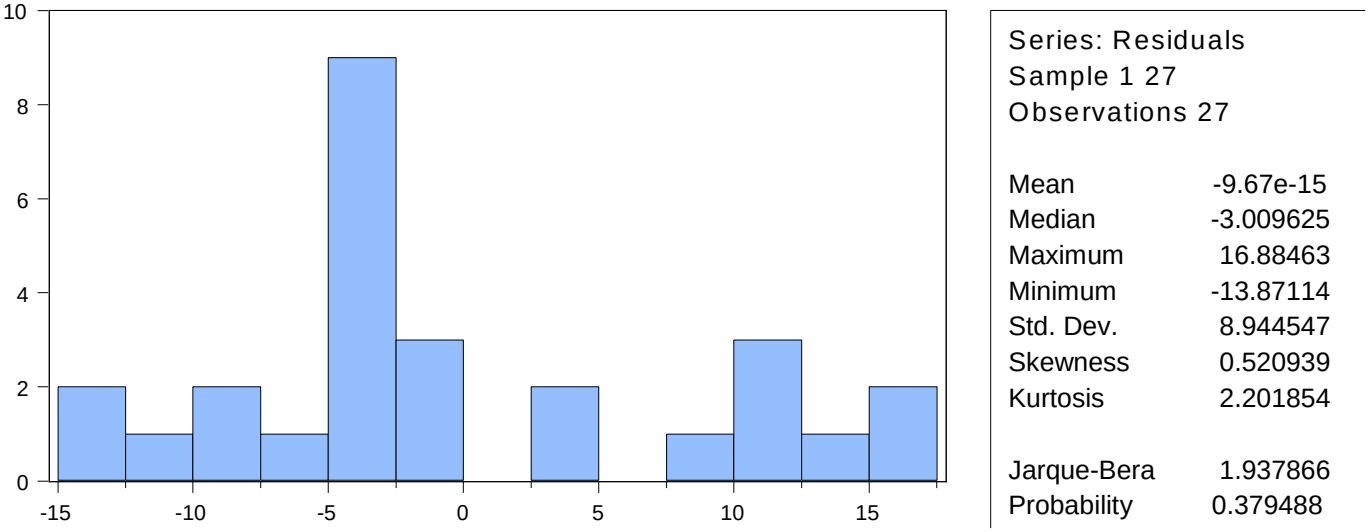

Fig 1: Histogram Normality Test

The Histogram Normality Test shows a Jarque-Bera statistic of 1.9379 with a p-value of 0.3795, indicating that the residuals of the regression model are normally distributed, since the p-value is greater than the 0.05 significance level. This confirms the validity of the OLS assumptions and supports the reliability of the model's estimates.

Test of Hypotheses

Using the OLS regression output and testing at the 5% significance level:

H_{01}: Aviation income has no significant effect on aviation sector output in Nigeria. The result shows a t-statistic of 6.1648 and a p-value of 0.0000, which is less than 0.05. This indicates that the effect of aviation income on aviation sector output is positive and statistically significant. Therefore, we reject the null hypothesis and conclude that aviation income has a

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significant and positive impact on aviation sector output in Nigeria. This implies that increases in aviation income significantly contribute to the growth and performance of the sector.

H_{02}: Aviation premium has no significant effect on aviation sector output in Nigeria. The result for aviation premium reveals a t-statistic of 3.1681 and a p-value of 0.0041, also less than the 0.05 threshold. This suggests that the effect of aviation premium on sector output is likewise positive and statistically significant. Hence, we reject the null hypothesis and conclude that aviation insurance premiums significantly and positively influence the output of the aviation sector. This means that better financial protection through premiums may enhance sector confidence and operational expansion.

Discussion of Findings:

The findings of this study, based on the Ordinary Least Squares (OLS) regression analysis, reveal that aviation income has a positive and statistically significant effect on the performance of the aviation sector in Nigeria, as indicated by a coefficient of 0.1734 and a pvalue of 0.0000. This implies that a one-unit increase in aviation income leads to an estimated 0.1734 unit increase in aviation sector output. The implication is that enhanced income levels within the aviation industry, likely derived from increased ticket sales, cargo services, and operational activities, directly contribute to the sector's overall productivity and output. This finding supports the work of Eneh & Ugwunta (2022), who found that internally generated financial resources significantly stimulate operational efficiency in the Nigerian aviation industry. Similarly, Adeniran and Aremu (2021) assert that profitability and reinvestment of aviation-generated income have a ripple effect on infrastructure upgrades and service delivery, leading to higher sector output. Thus, the study affirms that financial growth within aviation enterprises is a critical driver of sectoral performance.

Furthermore, the coefficient of aviation insurance premium is 0.0015, with a p-value of 0.0041, indicating a positive and statistically significant impact on aviation sector output at the 5% level of significance. This means that an increase in aviation insurance premiums representing greater investment in risk management and financial protection leads to measurable improvements in sector output. The result suggests that financial safeguards, such as comprehensive insurance coverage, foster greater investor and operational confidence, reduce uncertainties, and encourage expansion and technological investment in the sector. This finding aligns with the empirical evidence presented by Chika and Obasi (2020), who argue that risk mitigation through insurance in capital-intensive sectors like aviation enhances stability and operational resilience. Additionally, Okonkwo and Adewale (2019) found that increased insurance penetration in aviation operations enhances stakeholders' willingness to commit long-term investments due to reduced exposure to catastrophic losses. Thus, the significance of insurance premiums in this study confirms the strategic role of finance-driven risk control mechanisms in improving aviation business outcomes.

In summary, the findings clearly demonstrate that both aviation income and aviation insurance premiums serve as essential financial levers that significantly influence the performance of aviation businesses in Nigeria. These results reinforce existing literature and highlight the importance of strengthening financial inflows and risk management instruments to ensure sustainable growth within the sector.

CONCLUSION

This study examined the impact of finance on the performance of aviation businesses in Nigeria, using aviation income and aviation insurance premiums as proxies for financial input, and aviation sector output as the performance indicator. The findings from the OLS regression analysis show that both aviation income and insurance premiums have positive and statistically significant effects on sector output. This suggests that financial strength through revenue generation and risk protection plays a critical role in enhancing the productivity and overall performance of Nigeria's aviation sector. The study, therefore, concludes that increased financial inflows and well-structured insurance systems are vital to the sustainable growth and operational expansion of aviation businesses in the country.

Recommendations

1. **Enhance Revenue Mobilisation Strategies:** Aviation businesses should strengthen their income generation channels through diversified service offerings, improved customer experience, and digital innovations to drive up revenue, which has been shown to significantly improve sector output.

2. **Strengthen Insurance Integration in Aviation Finance:** Policymakers and aviation operators should prioritise comprehensive insurance coverage and timely premium payments as strategic tools for risk management. This not only promotes operational confidence but also contributes positively to overall sector performance.

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