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Evaluation of Cargo Trends and Market Share of Import-Export cargo Handled in Nigeria

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Abstract


The importance of air cargo in facilitating global trade cannot be overemphasized, thereby contributing a high value despite low volume. In Nigeria, cargo handling is dominated by NAHCO and SAHCOL, yet existing studies focus on efficiency and infrastructure with little attention to long term import-export trends or market share dynamics. The study addresses the gap by evaluating the volumes and market share of cargo (imports and exports) handled by NAHCO and SAHCOL at Murtala Muhammed International Airport, Lagos over a 10 year period (2015-2024), Secondary data were analyzed using descriptive statistics and visualized with graphs and charts. Findings revealed the market share of imports of NAHCO and SAHCOL to be 51% and 49% respectively while that of their exports are 53% and 47% respectively. With respect to the relationship between imports and export cargo for each company, NAHCO's import is 77% in relations to its 23% export. This indicates a growth rate of 7,899,139.69kg for imports and growth of 5,653,313kg for exports. SAHCOL import is 78% in relation to its 22% exports which also indicates a growth rate of 17,636,256.4kg for imports and growth rate of 13,362,389kg for exports. These results show a highly competitive environment with growing export performance for SAHCOL. The study also reveals that NAHCO consistently handles a slightly higher proportion of overall import and export cargo (51%) compared to SAHCOL (49%), indicating a near equal distribution of market share. The study also highlights fluctuations in cargo volumes over the years. It thus recommends strengthening export support policies, diversifying Nigeria's trade flows and enhancing data sharing mechanisms to inform future planning.

Keywords: Air cargo, Cargo handling, Cargo throughput, Import-Export trends, Market share.

1 | Introduction

The air cargo industry is a critical component of global trade and supply chain management, facilitating the movement of goods efficiently across international borders. It allows businesses to access markets globally,

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expand their customer base and foster economic growth [1]. Despite the air cargo industry only covers 1 to 2% of volume of the world trade in terms of tonnage, this is as much as 35% of the world total terms of value, this makes it the main transport modality for luxury goods and other high value products as well as those consumables with low shelf-lives [2], [3].

As the world economy is recovering from the financial crisis and strong growth rates of international trade and world GDP are expected, the air cargo industry is expected to experience a fast paced growth in the future [4]. The growth in the air cargo market is determined by several factors, prominently including the expansion of e-commerce, advancements in logistics technologies and changes in global trade patterns. E-commerce has particularly revolutionized the retail landscape, increasing the demand for air cargo services to meet consumer expectations for rapid delivery times [5]. Technological advancements that enhance tracking accuracy, route optimization and operational efficiency directly cater to the growing need for reliable and swift cargo services. Moreover, shifts in global manufacturing bases, with companies seeking more diversified supply chains, have increased reliance on air cargo to connect disparate production sites and markets efficiently. Additionally, the rise in cross border trade agreements helps reduce trade barriers, fostering a more interconnected global market conducive to air cargo growth. These dynamics ensure that air cargo remains an indispensable part of global commerce, continually adapting to the changing economic landscape [6]. However, the high cost of air freight reduces demand for it, due to the fact that its price is 4 to 5 times that of road transport and 12 to 16 times that of sea transport. This is a direct advantage for its speed and efficiency advantages [7]. These (cost variations) values differ from country to country, season to season and from product to product and for different volumes also. Cargo shipped by air thus have high values per unit or are very time sensitive, such as documents, pharmaceuticals, fashion garments, production samples, electronics consumer goods, and perishable agricultural and sea food products [8]. They also include some inputs to meet just-in-time production and emergency shipments of spare parts.

As the volume of air cargo grows, there is a natural progression from passenger aircraft to chartered cargo plans of increasing size and ultimately to scheduled cargo services [9]. On a worldwide level, air cargo is a principal economic indicator of international trade and also a thermometer for state of the global economy [10]. They typically respond to changing economic conditions. Rising in cargo activity often signal economic growth while declines can signal economic contraction [11].

In this context, cargo handling companies at Nigerian airports play a strategic role by ensuring efficient loading, unloading, storage and distribution of freight, ensuring that goods are transported securely and efficiently. Air cargo handling process can also be provided in-house by airlines themselves. Airlines outsource their handling services as this can lead to reduced overheads due to the specialization and economics of scale enjoyed by third party handlers. In doing so, airlines are able to avoid or reduce the high fixed cost component of aviation handling including the purchase and maintenance of expensive equipment which would not have been used frequently enough to justify the expense [12].

The Nigeria air cargo handling market is largely dominated by few key players, including the Skyway Aviation Handling Company (SAHCOL) and the Nigerian Aviation Handling Company (NAHCO), which control a significant share of the industry. Other private operators and emerging firms have also entered the market, increasing competition and improving service offerings [13].

Market share analysis is essential for understanding the structure of the cargo handling industry and assessing their competitive strengths. Similar factors that contribute to logistics efficiency also determine market dominance, which include operational efficiency, cargo throughput, technological advancements, regulatory compliance [14]. Additionally, infrastructure challenges, bureaucratic bottlenecks, regulatory policies set by agencies such as the Federal Airports Authority of Nigeria (FAAN) and the Nigerian civil Aviation Authority (NCAA) also impact the performance and market share of cargo handlers [15].

In Nigeria, aviation cargo handling is rendered by third party handlers at the airports in the country with NAHCO and SAHCOL consistently in a competition for market share. In the country, airlines are not allowed

to render self-handling by law, so they have to outsource to one of the two operational handlers in the country [12].

From the search for literature, some of the work done focusing on aviation cargo handling are; Assessment of terminal capacity for cargo handling in Lagos Airport, Nigeria [16]. Determinant of the development of air cargo handling operations in Lagos International Airport, Nigeria [17]. Econometric analysis of air cargo throughputs in Nigeria [18]. A comparative analysis of the operations and performance of aviation cargo handling companies in Nigeria [12].

The Multi Year period of the Air freight industry Pre and Post Covid-19 [19]. Despite these extensive studies, there is a clear gap in literature when it comes to visual, statistical and trend based analysis of air cargo volumes – disaggregated by companies (NAHCO versus SAHCOL), by cargo types (import versus export), and over a continuous multi year period (2015-2024). This study hereby fills this gap by evaluating the import-export cargo trends and market share between NAHCO and SAHCOL across a decade using visual tools such as line graphs, bar charts and bar charts to track changes and proportions.

The aviation industry in Nigeria, particularly at Lagos International Airport, is a critical hub for air cargo operations. However, there is limited empirical research on the market share distribution among aviation cargo handling companies, making it difficult to assess their competitive strengths and operational efficiencies. The lack of clear understanding of market share dynamics creates challenges for stakeholders, including regulatory bodies, cargo operators and logistics service providers in making data driven decisions.

Despite the increasing demand for air cargo services, issues such as monopolistic tendencies, pricing strategies, service quality and operational bottlenecks may impact fair competition among handling capacity aligns with the growing demand for air freight, potentially leading to inefficiencies and increased logistics costs.

Hence, this study aims to evaluate the import-export cargo trends and market share between NAHCO and SAHCOL with a focus on analyzing the volume and market share of cargo (imports and exports) handled by NAHCO and SAHCOL between 2015-2024, assessing the trend of imports to exports in each of the companies over the 10 years and determining their overall market share for the study period. The study will help assess the level of competition among handling companies in Murtala Muhammed International Airport, Lagos and identify dominant players in the market. The study will also indicate which companies dominate the market. The study also adds to the list of literatures in air cargo operations and performance.

2 | Literature Review

2.1 | Theoretical Framework

This study is anchored on Porter's Five Forces Model which explains how industry structure and competitive pressures influence organizational outcomes. It emphasizes five elements which are rivalry, new entrants, suppliers, buyers and substitutes that shape profitability and performance of firms [1], [20]. It explains the competitive rivalry between NAHCO and SAHCOL under regulatory constraints. It is also anchored on the trend analysis model which is concerned with the study of the movement of variables through time and the detection of any systematic component that can be used to forecast the future [21]. It supports the examination of cargo patterns in NAHCO and SAHCOL over time.

This study is also centered on the concept of trade balance. Eurostat defines it as the difference between the value of the goods that a country exports and the value of the goods that it imports. For the purpose of this study, trade balance is examined as the relative volumes of import and export cargo handled by NAHCO and SAHCOL overtime.

2.2 | Empirical Framework

Ayantoyinbo and Oladun [18] examined the contribution of air cargo throughput to Nigeria's economic development using econometric methods over a 10 year period (2009-2018). Relying on secondary data, it analyzed international and domestic air cargo volumes alongside GDP and GNI. The results showed that despite a strong positive relationship between cargo throughput and economic indicators, the sector contributed only 31.5% to Nigeria's GNI and GDP. The study recommended policies that would strengthen the causal relationship between air cargo operations and economic growth to improve competitiveness, especially in regions with active airports.

Tuzun [22], (carried out a research on the Multi Year period of the Air freight industry Pre and Post Covid-19. The study compared air freight performance before and after COVID-19 (2014-2019 vs. 2020-2022) using statistical tools such as means, standard deviation, variance, correlation and T-tests. The result indicated that air metric tons, gross logistics revenues and Cargo Tonne Kilometres (CTK) significantly declined in the post COVID period. The results show a drop in mean air metric tons from 3.28 million to 1.02 million, revenues from \$6.16 billion to \$2.11 billion and CTK from 7,984.25 to 2,687.36.

Lower variability and strong positive correlations suggest consistent trends, though at reduced volumes. The study highlighted the pandemic's severe impact on air freight and the urgent need for adaptive strategies to handle future disruptions. The paper aimed to analyse air metric tons logistics revenue. Adenigbo et al. [17], carried out a research on the Determinants of the development of air cargo handling operation in Lagos International Airport, Nigeria. The results indicated customs efficiency (92.6%), traffic level (62.5%) and the airport links with other airports (63.4%) as the most significant factors determining the development of cargo handling operations at the airport.

Adenigbo and Ubogu [13] analysed the volume of air cargo handled at the major international airports in Nigeria. The results showed that electronic and computers dominated flows in Lagos, Machine parts in Abuja and Port Harcourt, and textiles in Kano airports. Also, the study observed that all the airports are specialized in handling dominant cargo type. Adenigbo et al. [16] conducted an assessment on the capacity of infrastructure for cargo operations at the terminal of Lagos airport. It showed that there is adequate infrastructure, which is in good condition for cargo handling.

Stephen and Adegbulu [12], examines the levels of inputs and output of the cargo handling services and determines the benchmark cargo handling firm in the industry. The research work majored on SAHCOL and NAHCo in Murtala Muhammed International Airport Lagos. The research work employs the use of secondary data sources from SAHCOL and NAHCO. The data collected were analysed using Data Envelopment Analysis (DEA). The study showed that the inputs supplied by the firms are workforce, facilities and equipment while outputs are cargo throughput and revenue. The result indicated that, SAHCOL inputs 0.88 level of inputs and gets 0.88 level of output while NAHCO inputs 1.17 level of inputs and gets 1.07 level of output. Therefore, SAHCOL is the benchmark cargo handling firm in the industry as it has a 100% level of efficiency while NAHCO has 92% level of efficiency. It thus recommends that there should be a well-organized data bank stored by cargo handling companies for the purpose of more research and decision making.

From the several studies of literature, focus has been more on air cargo operations and their handling as well as their relevance to Nigeria's economy but revealed several important gaps. First, there is a lack of disaggregated import-export trend analysis at the company level. Second, existing studies inadequately account for company specific contributions to national cargo volumes. Third, market share distribution between handlers has not been sufficiently examined over an extended period. This indicates a need for a research that focuses on the evaluation of the import-export cargo trends of NAHCO and SAHCOL over a ten year period, assessing their market shares and identifying performance patterns.

3 | Methodology

This study used a descriptive and quantitative research design to assess the import and export cargo volumes handled by the Nigeria Aviation Handling Company (NAHCO) and Skyway Aviation Handling Company (SAHCOL) over a ten year period (2015-2024) at Murtala Muhammed International Airport, Lagos, Nigeria. Secondary data were collected from these companies. The data covering annual import and export volumes were organized into tables for clarity and analyzed to identify patterns, variations and market share distribution. Microsoft Excel was used as the primary tool for data entry, organization and analysis due to its ease of data handling, ability to generate clear graphical outputs and suitability for trend analysis in time series datasets.

Trend analysis was employed to examine the changes in cargo handling over time, evaluate operational efficiency and competitiveness. It also allows for detection of growth trends, anomalies and potential areas for strategic improvement. Line graphs, bar charts and pie charts were used to visually represent the data, allowing for comparative analysis between the two companies and between import and export operations. The findings gotten from the analysis provided a basis for evaluating the relative performance of the firms and understanding their contributions to the air cargo sector at Murtala Muhammed International Airport, Lagos as Nigeria's busiest cargo airport.

4 | Results and Discussion

Analysis of the volume and market share of imported cargo handled by NAHCO and SAHCOL between 2015-2024

The difference between the volume of imported cargo handled by NAHCO and SAHCOL between 2015-2024 at the Lagos International Airport as shown in *Table 1*. In the years 2015, 2016, 2018, 2019, 2022, 2024, NAHCO handles more imported cargoes at the airport than SAHCOL. NAHCO shows a fairly stable trend with mild fluctuations in import volumes. There were slight dips in 2017, 2020 and 2023 but overall maintains a steady performance. This indicates operational stability with minor annual changes while in the years 2017, 2020, 2021, 2023 SAHCOL handled more imported cargoes than NAHCO. It has more irregular growth. It has a lower volume than NAHCO until 2017, but begins competing closely from 2018 onward. It peaks in 2021 surpassing NAHCO significantly in that year. It maintains a competitive volumes from 2020-2022, though shows a declining trend in 2023 and 2024.

Table 1. Import cargo weight for NAHCO and SAHCOL.

Years	NAHCO Imports (Kg)	SAHCOL Imports (Kg)
2015	31,754,219	15,615,621
2016	42,885,788.2	25,296,426.8
2017	32,092,225.2	37,148,878.6
2018	41,072,538.88	36,644,547.2
2019	43,351,355.02	34,654,345.23
2020	35,846,335.94	43,675,854.9
2021	48,149,796.86	68,171,715.8
2022	44,623,832.42	43,989,038.91
2023	37,640,640.07	40,908,267.42
2024	39,653,358.69	33,251,877.4
Total Imports	397,070,090.3	379,356,573.3

*Source: Field Work (2025)

The visualization of the imported cargo handled by the companies is shown in *Fig. 1*. The two lines converge, diverge and cross each other over time, showing that: NAHCO maintains a steady lead early on while

SAHCOL shows growth and competitiveness in the middle years. Both companies face a downturn in imported cargo volume after 2022.

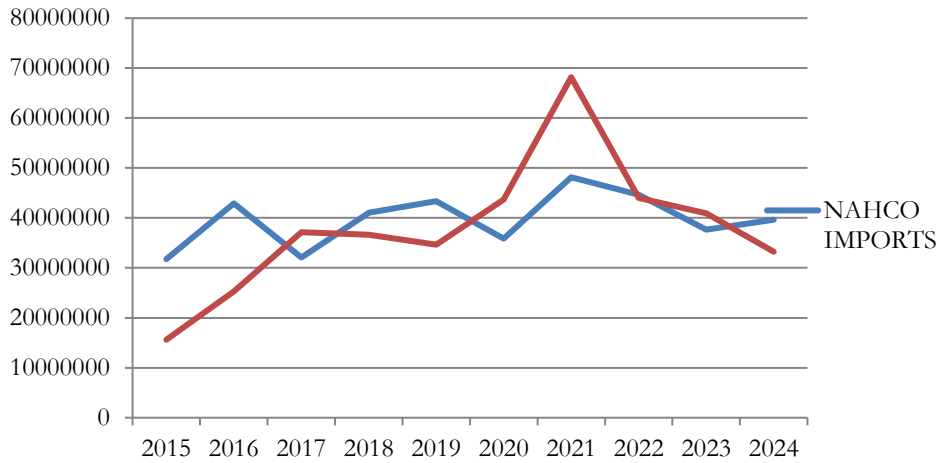


Fig. 1. Import cargo weight for NAHCO And SAHCOL.

The import cargo market share for NAHCO and SAHCOL is shown in Fig. 2. It reveals that NAHCO handled 51% of all imported cargo volume at Lagos International Airport across the 10 years while SAHCOL handled 49% which is only slightly less than NAHCO. The close percentages suggest a highly competitive cargo handling market, with none of the companies having overwhelming dominance.

Total Market Share For NAHCO And SAHCOL Imports (2015-2024)

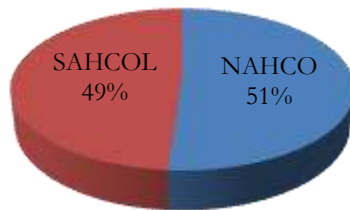


Fig. 2. Import cargo market share for NAHCO and SAHCOL.

Analysis of the volume and market share of exported cargo handled by NAHCO and SAHCOL over time

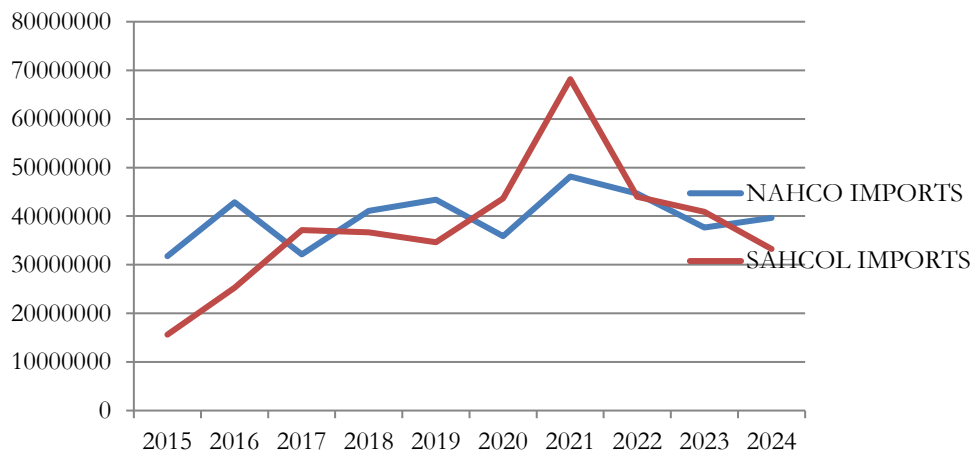
The difference between the volume of exported cargo handled by NAHCO and SAHCOL between 2015 – 2024 at the Lagos International Airport is shown in Table 2. It is important to note that between years 2015 to 2018 NAHCO consistently handled more export cargo than SAHCOL. In 2019 through 2024, SAHCOL maintained a lead in exports. NAHCO’s export fluctuated slightly between 2015 and 2020, but grew significantly from 2021 onwards. Despite this, it remained slightly behind SAHCOL in the later years. From the table, increasing competition in export cargo handling was observed.

Table 2. Export cargo weight for NAHCO And SAHCOL.

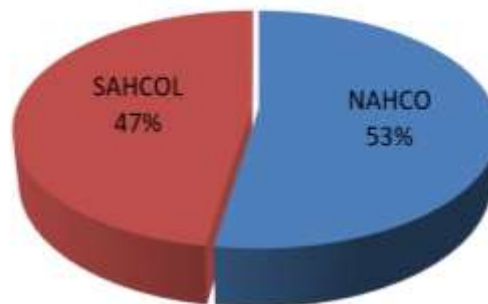
Year	NAHCO Exports (Kg)	SAHCOL Exports (Kg)
2015	9,609,772.00	3,503,067.00
2016	11,207,623	6,665,340
2017	10,893,781.00	7,127,221.82
2018	10,681,907.00	7,878,394.00
2019	10,060,239.00	10,235,385.00
2020	9,468,803.61	10,193,184
2021	14,218,502.20	13,657,617.00
2022	13,410,981.58	15,759,087.00
2023	13,589,107.11	15,188,134.00
2024	15,263,085.00	16,865,456.00
Total exports	118,403,801.50	107,072,885.82

*Source: Field Work, 2025

It was shown in *Fig. 3* that NAHCO has a steady growth in export volume with a notable peak in 2024. It has a minor decline between 2016 and 2020, followed by a strong recovery from 2021 onwards. SAHCOL experienced a rapid and consistent increase from 2015 to 2024. It surpassed NAHCO in 2019 and maintained the lead through 2024, indicating significant operational growth.

**Fig. 3. Export cargo weight for NAHCO and SAHCOL.**

The export cargo market share for NAHCO and SAHCOL as shown in *Fig. 4*. NAHCO handled 53% of all exported cargo volume at Lagos International Airport across the 10 years while SAHCOL handled 47% which is only slightly less than NAHCO. This implies that NAHCO's early year dominance still gives it a narrow edge in cumulative performance, though SAHCOL is quickly catching up.

TOTAL market share for nahco and sahcol exports (2015-2024)**Fig. 4. Export cargo market share for NAHCO and SAHCOL.**

Assessment of the trend of imports to exports in NAHCO over the 10 years

It was shown in *Table 3* that imports and exports cargo volumes from NAHCO in Murtala Muhammed International Airport, Lagos. Over the 10 years, NAHCO shows a consistent dominance of imports with imports increasing from 31,754,219kg in 2015 to 39,653,358.69kg in 2024. Here, imports represent an absolute growth rate of 7,899,139.69kg. Exports increased from 9,609,772kg in 2015 to 15,263,085kg in 2024 representing an absolute growth of 5,653,313kg. This suggests that although imports remained the main focus, exports recorded steady expansion during the study period.

Table 3. Export and Import cargo from NAHCO.

Years	Nahco Imports (Kg)	Nahco Exports (Kg)
2015	31,754,219	9,609,772.00
2016	42,885,788.2	11,207,623
2017	32,092,225.2	10,893,781.00
2018	41,072,538.88	10,681,907.00
2019	43,351,355.02	10,060,239.00
2020	35,846,335.94	9,468,803.61
2021	48,149,796.86	14,218,502.20
2022	44,623,832.42	13,410,981.58
2023	37,640,640.07	13,589,107.11
2024	39,653,358.69	15,263,085.00
Total Imports	397,070,090.3	118,403,801.50

*Source: Field Work, 2025

It was shown in *Fig. 5* that the volume of cargo imports and exports handled by NAHCO over ten years. It reveals dominance role in imports while showing promising growth in exports, an important insight for strategic planning and resource location.

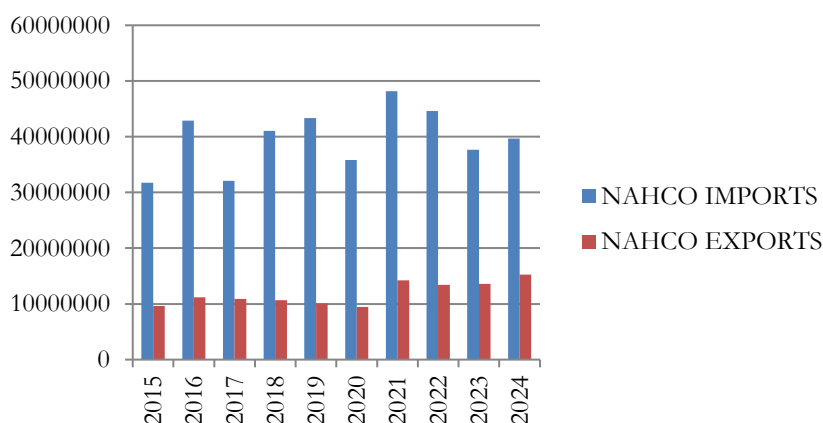


Fig. 5. Export and import cargo from NAHCO.

The distribution of NAHCO’s total cargo operations over a 10 year period, revealing a significant dominance of imports of 77% compared to exports of 23% as shown in *Fig. 6*. This wide gap shows that NAHCO’s focus on handling inbound cargo is likely driven by higher import demand at Lagos International Airport. The relatively low export percentage suggests underutilization of outbound logistics capacity or less export activity, which could point to structural or market factors affecting export volumes. This imbalance highlights a potential area for strategic development, especially if NAHCO aims to expand its role in facilitating outbound trade and improve overall operational balance.

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MARKET SHARE OF CARGO HANDLED BY NAHCO (2015-2024)

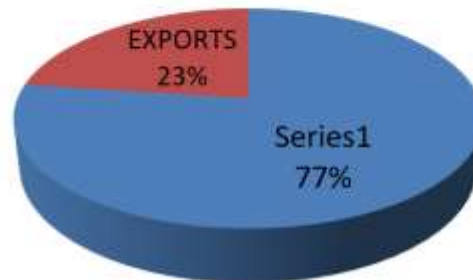


Fig. 6. Market share of cargo handled by NAHCO.

Assessment of the trend of imports to exports in SAHCOL over the 10 years

The import and export cargo volume from SAHCOL in Murtala Muhammed International Airport, Lagos is shown in *Table 4*. Over the 10 years, SAHCOL import volumes rose from 15,615,621kg in 2015 to 33,251,877.4kg in 2024, representing an absolute growth of 17,636,256.4kg. Exports, though smaller in volume, grew more sharply, expanding from 3,503,067kg in 2015 to 16,865,456kg in 2024 which is an increase of 13,362,389kg. This indicates that while imports remained the bulk of SAHCOL's operations, its export activities grew at a faster pace, especially in the later years.

Table 4. Import and export cargo from SAHCOL.

Years	SAHCOL Imports (Kg)	SAHCOL Exports (Kg)
2015	15,615,621	3,503,067
2016	25,296,426.8	6,665,340
2017	37,148,878.6	7,127,221.82
2018	36,644,547.2	7,878,394
2019	34,654,345.23	10,235,385
2020	43,675,854.9	10,193,184
2021	68,171,715.8	13,657,617
2022	43,989,038.91	15,759,087
2023	40,908,267.42	15,188,134
2024	33,251,877.4	16,865,456
Total Imports	379,356,573.3	107,072,885.8

*Source: Field Work (2025)

Import and export cargo volumes over a period of 10 years as shown in *Fig. 7*. It reveals a consistent dominance of imports over exports in every year observed. However, a closer look shows that exports have grown steadily, especially from 2019 onward, gradually reducing the gap between the two. Between 2015 and 2018, exports were less than one third the size of imports. By 2024, exports accounts for more than half of imports, marking a significant shift in SAHCOL's operational balance. The trend indicates that while imports remain a major component of SAHCOL's cargo activities, export services have strengthened significantly, possibly due to improvements in infrastructure, partnerships or market demand. Hence, this chart demonstrates a positive upward trend in export growth, suggesting that SAHCOL is moving towards a more balanced import-export operation.

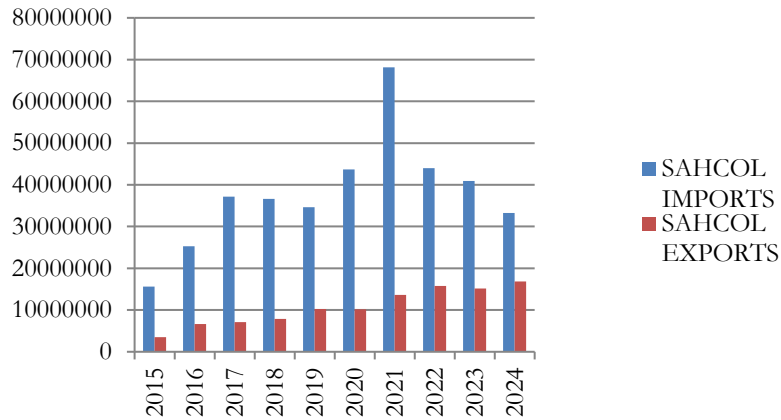


Fig. 7. Import and export cargo from SAHCOL.

The market share of cargo handled by SAHCOL with 22% exports and 78% imports as shown in Fig. 8. This indicates a significant operational focus on import cargo, which made up the majority of the companies activities. This imbalance is as a result of higher demand for imported goods and limited outbound trade volume.

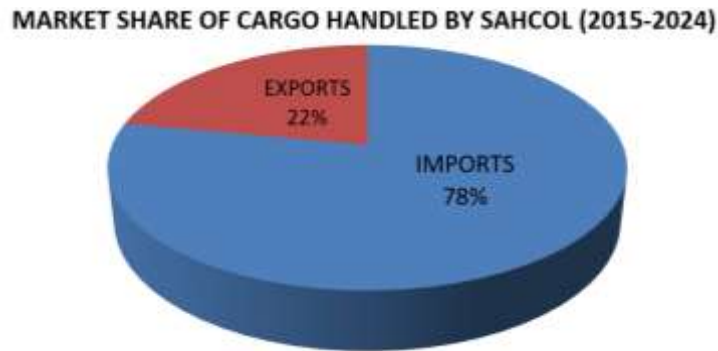


Fig. 8. Market share of cargo handled by SAHCOL.

Determination of the overall cargo market share of the aviation cargo handling companies during the study period

An overall market NAHCO and SAHCOL cargo volume. NAHCO has a market share of 51% while SAHCOL has a market share of 49% as shown in Fig. 9. This near equal distribution reflects a highly competitive cargo handling landscape between the two major players. The minimal difference of 2% implies that both companies are key players in Nigeria’s aviation logistics, sharing the cargo handling responsibilities at near parity.

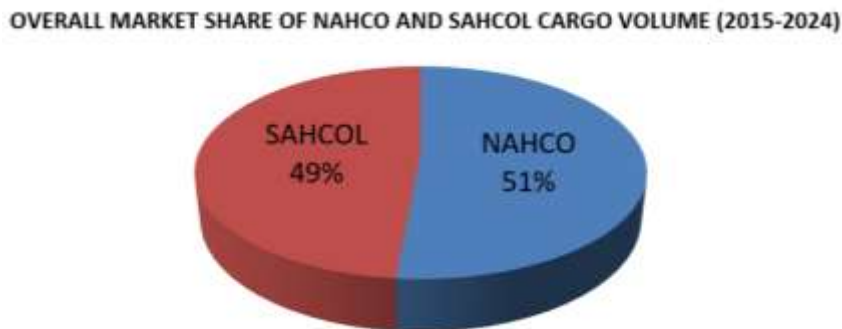


Fig. 9. Overall cargo market share of NAHCO AND SAHCOL.

5 | Conclusion

This study evaluates cargo trends and market share between NAHCO and SAHCOL at Murtala Muhammed International Airport, Lagos, using a ten year import and export data (2015-2024). The results confirm a near parity competitive environment, with NAHCO handling more cargo overall (51%) than SAHCOL (49%). Both companies showed stronger emphasis on imports, with imports consistently exceeding export each year, reflecting Nigeria's structural trade imbalance. However, exports demonstrated a steady upward trend, especially in later years.

A key finding is that although NAHCO maintained a marginal lead in market share, SAHCOL exhibited faster growth in both imports and exports, particularly exports where the growth rate is (13,362,389kg) which tripled that of NAHCO (5,653,313kg). This suggests a shifting competitive balance in Nigeria's air cargo industry, with SAHCOL potentially positioning itself as a stronger player in export facilitation.

The study contributes to the limited empirical literature on Nigerian air cargo handling by providing a decade long comparative analysis of the two dominating firms. It also highlights structural imbalances in Nigeria's trade, given the overwhelming dominance of imports. In conclusion, cargo handling at Murtala Muhammed International Airport is competitive but import driven and sustaining future growth will require deliberate policies to stimulate exports and ensure balanced trade flows.

Nevertheless, the study is constrained by its reliance on secondary data without commodity level disaggregation and by its focus on a single airport which may limit the generalizability of results.

Future research should extend the analysis to other airports, include commodity- specific breakdowns and apply forecasting models to provide deeper insights. Despite these limitations, the study offers a valuable benchmark for policymakers, operators, and researchers seeking to enhance cargo handling performance and trade facilitation in Nigeria.

It is therefore suggested that:

- I. Efforts should be made to reduce the gap between imports and exports by supporting export businesses and improving logistics.
- II. Efforts should be made to address Nigeria's reliance on imports by diversifying cargo flows.
- III. Cargo handling companies should establish transparent, publicly accessible cargo performance databases to enhance data driven planning and policy-making.
- IV. The companies should make use their yearly operational data to plan better, manage resources more efficiently and improve services.
- V. Further research should examine commodity specific trends and apply forecasting models to predicts future cargo dynamics.

Conflict of Interest

The authors declare no conflict of interest.

Data Availability

All data are included in the text.

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