

ANALYSIS OF INTERNATIONAL AIR PASSENGERS' MOVEMENT IN NIGERIA

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Abstract

This study examined the international air transport passengers handled with the main aim of analysing the variation in trend of passengers transported and the problems confronting the airports. Six (6) International airports were selected based on geo-political representation and passengers' movement between 2004 and 2017 were collected from Federal Airport Authority of Nigeria (FAAN). These data were analysed using descriptive statistical tools of mean and standard deviation while Analysis of Variance (ANOVA) was used to establish the variation of passengers' movement. It was revealed from the results that, the movement trend is uneven and asymmetrical in nature, characterized with up and down movement. More so, Daily utilization capacity of the airports depicted that DNMM has a high capacity (1,779) and DNAA a fair capacity (514) and other airports are underutilized. This invariably showed that there is no variation in the international air passengers' movement at the airports ($F = 2.589$, $p\text{-value} > 0.05$) which is not significant. Stricter policies and regulations, establishment of indigenous and national carrier, closure of airports that are not viable economically, employment of aviation professionals to curb the problems of bad management and insecurity were recommended for the study.

Keywords: Air transport, International, Nigeria, Passengers Movement.

JEL Classification: R40

1. INTRODUCTION

Transportation provides a very efficient means of moving large number of people with considerable flexibility from one location to another, it plays a key role in shaping urban and rural landscape through its influences on the form and size of settlements, the style and pace of life by facilitating trade, permitting access to

people and resources and enabling greater economies of scale (Adesanya, 2004). It is also viewed as an indicator for development as it has played significant role in the development of cities all over the world (Oyesiku, 2002).

A nation success depends on global interaction and integration of her commerce, political and socio-economy characteristics with the outside world and this strategically based on efficient, effective and vibrant international transport modes to move passengers and cargo. International transportation is an integral part of study of transportation as it enhanced foreign trade and provided by all modes of transportation. Meanwhile, the fastest and quickest means among them, which at the same time can overcome any form of barriers such as water, mountains and high altitudes, is the air transportation (Aderamo, 2006).

Air transportation is the fastest of all transport modes which has engendered development in many countries. Air transport contributes to the overall socio-economic development by providing means of conveyance of persons, goods and services. Air transport is an innovative, environmentally responsible industry that drives economic and social progress. It is essential for world business and tourism. Like it has done in Nigeria, aviation creates jobs and opens up new market opportunities by attracting businesses to locations in the developed and developing world. It moves product and services quickly over long distances enabling economic and social participation by outlying communities locally and internationally (Hassan & Olabosinde, 2017).

International air transport movement is available in four categories; namely air parcel post, express on courier, passengers and cargo. Of the four, there is a complementarity between passenger and cargo transport systems. With some exceptions, such as buses and pipelines, most transport modes have developed to handle both freight and passenger traffic. In some cases, both are carried in the same vehicle, as for instance in air transport where about 80 percent of the freight is transported in the cargo holds of passenger aircraft. In others, different types of vehicle have been developed for freight and passenger traffic, but they both share the same road infrastructure, as for example in rail and road traffic. In shipping, passengers and freight used to share the same vessels and often the same terminals. The air passenger transport is a regular scheduled international passenger flights hauled freight in the belly of the plane.

Abraham, Saheed and Chinyere, (2015), argued that for any economic progress to be achieve in any country, the aviation industry as an integral part of transport must be developed, this is sine-qua-non to development. Adefolalu (1977) opined that air transportation has introduced the most effective method of overcoming the barrier imposed by physical distances and difficult topography and its speed is far superior to any other mode of transport. The Nigerian Federal Government realizing the role of air transport in the nation's development and made significant attempts to develop the country's air transport system. The most gigantic was the 1975-1980 Airport development programme in which the Murtala Mohammed airport complex was appropriated with N240 million (Filani, 1983). Six other airports in Kano, Ilorin, Kaduna, Sokoto, Port Harcourt and Maiduguri

were developed to accommodate the largest intercontinental aircraft. The Nigerian international aviation industry has experienced growth in recent time with regards to passenger traffic.

2. LITERATURE REVIEW

Air transport is essential for world businesses, creating jobs and opening up new market opportunities by attracting businesses to locations in the developed and developing world. It moves products and services quickly over long distances, enabling economic and social interaction among communities. It is becoming increasingly accessible to a greater number of people who can now afford to travel by air for leisure and business purposes (Aderamo, 2010).

Numerous researchers have dwelled into international air transport in general and international air transport passenger in particular, but their focused were concentrated on air transport service level, air transport operation, development of air transport, air transport and economic development etc. for instance; Afolayan, Malik and Adedayo, (2012) – Comparative analysis in variability of aircraft-passenger movement in Nigeria Airports; Ladan (2012) – An analysis of air transportation in Nigeria; Abraham et al, (2015) – Air Transportation Development and Economic Growth in Nigeria; Button and Taylor (2000) - International air transportation and economic development.

Obviously, aviation is fully superior to other shipping modes of transport especially, in the area of fastness or time saving. However, high cost of transportation is associated with air transportation. But, Samula (2012) observed that since 1970, both price and production cost for air travel have been declining at about 1% annually. Button (2006) on the other hand pointed out that, in United States and Europe; more than 40% of air travels are for business purposes. The remaining trips are either for leisure or for visiting friends and relatives. Furthermore, Onokala (2015) examine air transport operation and focusing on passenger traffic trend opined that the existing infrastructural facilities will not be able to cope with the attendant growth in the traffic passenger level.

The impact of the air transport sector was analysed by Nwaogbe, Wokili, Omoke and Asiegbu (2013), they reported that the air transport sector has contributed immensely to the economic development of Nigeria and the entire globe in two other ways. Firstly, through the taxes levied on Gross Value Added i.e. the sum of profits and wages. Secondly, through its lump sum investment and its use of higher advanced technology systems for its operations and maintenance.

More importantly, Isaac (2013), examined the role of airport infrastructural development on socio-economic development of Nigeria. He observed that, there is a correlation between airport infrastructure development and socio-economic development of the country. The study concludes that, for any proper achievements to be achieved in aviation sector, government must step up its contribution, regulation and due process must be followed in awarding of contract and making decision that relates to the development of aviation. Akanbi, Bamidele and Dunning

(2013) on their study employed an OLS regression technique to investigate empirically the impact of transportation infrastructure improvement on economic growth in Nigeria. They found that transport output and investment made on transport infrastructure in Nigeria is positive and significant on growth.

Oyesiku, Adegbeni and Folawewo (2013) used OLS regression technique, to analyse impact of public sector investment in transport on economic growth. Their study showed that transportation impacted negatively on economic growth in Nigeria. Meanwhile, Oluwakoya and Olufemi (2013), examined the aftermath of the deregulation and liberalization in aviation sector and they observed that the policy has increased airline services at the air terminals of Nigeria. The regression result revealed that reforms in aviation sector, have improve service delivery of the airline operators in Nigeria. Ikpechukwu and Urael (2012) investigated the impact of quality of transport infrastructure on the economy. The results showed that there is a positive correlation between quality of transport and economic growth in Nigeria.

A study of hub airports in the US, which embrace the international gateways, found a significant positive correlation between new economy employment and hubbing (Button and Lall, 1999). The analysis compared the situation at three non-hub airports with the major airline hubs of Cincinnati (which is a Delta Air Lines hub) and Pittsburgh (which is a US Airways hub) and showed a positive correlation between hubs and development. Additional analysis confirmed that the direction of causation was from air service availability to employment rather than the reverse.

The problems of international air transport services in Nigeria include the operating cost, fuel consumption, limited carrying capacity, cost of maintenance and expensive of service. The exorbitant cost of air transport in Nigeria is beyond the financial capability of the average Nigerian and also most of the people in Nigeria find it difficult to distinguish between domestic and international airport and aircraft as well as financial unit of payment (USD). Consequently, the liquidation of many airlines has been attributed to the management problem and maintenance incapability as opined by Afolayan et al, (2012) in their study of comparative analysis in variability of aircraft-passenger movement in Nigeria airports.

Edobor (2014) focused on the economic impact of air transport in Lagos Nigeria with a special attention to the Murtala Muhammed Airport Lagos Nigeria. In general, the air transport sector was examined in the light of the benefits and the relationship between the air transport and tourism industry and to gain a better understanding of how air transport impacted Lagos economic from the theoretic view-point. The report also looked into how the air travel helped drive the globalization process and the use of ICT changing the face of air travel. In this report, the qualitative method was adopted using the semi structured inter-view to collect data information from the chosen target group in the travel and tourism industry. The information from the interviewees was analysed to arrive at findings regarding the economic impact of air transport in the region of Lagos.

Gbadamosi and Adekunle, (2018) focused their problem of international air transport on revenue loss to other international flights in the absence of a viable National carrier for international flight. They observed that over \$6 billion were being generated by both British airways and Virgin Atlantic airline over the past ten years and the Nigeria's private national carrier generated over \$133 million and both foreign airlines establishing themselves on the route and having over 97% of the market share on the route while the Nigeria's private carrier having 2.18% of the market share.

In addition to the problems of inefficiency, mismanagement and airline mishap identified by Abraham et al, (2015). Ladan (2012), observed that Nigeria air transport is bedeviled, from poor reputation for operational efficiency and safety which reflected in the presence of an incoherent transport policy, bad management, decaying facilities, loose security, closure of airport, intermittent air crashes and a host of other factors. Lima and Verables (2001) observed that a 10% increase in transport costs reduces trade volume by 20%. Furthermore, recent studies have observed that a 10% increase in time reduces bilateral trade volume between 5% and 8% (Hidenobu, 2004).

The summary of the literature reviewed suggest that the problems confronting international air transport passengers is as old as human kind and multi-dimensional in nature some of which include inefficiency cum absence of national carrier and over dependency on foreign airlines operating in the sector, cost of operation and maintenance, favouritism of political accolades rather than economic considerations for the establishment of many major airports in the county, bureaucracy and bad management, decaying facilities and insufficient up-to-date technology, insecurity and air mishaps.

However, the industry is still overshadowed with many challenges out of which passengers' handling in relation to international movement is a big challenge because there has not been an in-depth contribution in this regard. Hence, this study aimed at examine the passengers handled in international air transport in Nigeria with the main objectives of examining the trend and variation passengers handled as well as the reviewing the problems confronting the international airport in Nigeria in respect to passengers handling.

3. MATERIALS AND METHOD

The international and intercontinental air passenger's movement in Nigeria has been the focused of some certain airport in Nigeria, among which include the eight (8) major international airports and few other international airports in the country. However, six (6) airports are used for this study and were abbreviated using ICAO nomenclatures standard namely; Muritala Muhammed International Airport (DNMM), Lagos; Nnamdi Azikwe International Airport, Abuja (DNAA); Port Harcourt International Airport, Port Harcourt (DNPO); Mallam Aminu Kano International Airport, Kano (DNKN); Akanu Ibiam

International Airport, Enugu (DNEN) and Maiduguri International Airport, Borno (DNMA). These airports were chosen for the study due to the fact that:

- (i) Each and every airport in the study represents one geo-political zone in the country as indicated in table 1.
- (ii) They have been in the operation of international passenger air transport movement for at least 5 years and still operating till date.
- (iii) Owned by federal government of Nigeria, and control and managed by the Federal Airport Authority of Nigeria (FAAN).
- (iv) Involved in movement of passengers to and from other countries of the world and rated at least 3-star status of ICAO standard.

Data employed include an expo-facto research design of international air passengers' movement between 2004 and 2017 collected from Federal Airport Authority of Nigeria (FAAN, 2018) and Federal Bureau of Statistics (FBS) and a numerous literature relating to international air transport. The data were analysed using Analysis of Variance (AVONA) to establish the variation in passengers handled by the airports as well as descriptive statistics of table, mean and standard deviation for explanation of the trend of passengers. The study international airports in Nigeria were six (6) as shown in Table 1.

Table 1: *Geo-political representation of International Airport in Nigeria.*

S/N	Geo-political zone	Airports
1	South West	Murtala Muhammed International Airport (DNMM)
2	South South	Port Harcourt International Airport (DNPO)
3	South East	Akanu Ibiam International Airport, Enugu (DNEN)
4	North Central	Nnamdi Azikwe International Airport, Abuja (DNAA)
5	North East	Maiduguri International Airport, Borno (DNMA)
6	North West	Mallam Aminu Kano International Airport (DNKN)

3.1. STUDY INTERNATIONAL AIRPORT

3.1.1. MURITALA MUHAMMED INTERNATIONAL AIRPORT (DNMM)

Murtala Muhammed International Airport Originally known as Lagos International Airport located in Ikeja, Lagos State, and is the Nigeria's prime international air gateway and was renamed in the mid-1970s, after a former Nigerian military head of state Murtala Muhammed, the fourth military ruler of Nigeria. The airport was established in 1947 as West African Airways Corporation and was modelled after Amsterdam Airport Schiphol and the new terminal officially opened in March 15 1979. Murtala Muhammed International Airport consists of an international and a domestic terminal, located at about one kilometre from each other. International operations moved to the new international airport when it was ready while domestic operations moved to the Ikeja Airport, which became the domestic airport. The airport housed the headquarters of the Federal

Airports Authority of Nigeria (FAAN), Accident Investigation Bureau (AIB), Nigerian Civil Aviation Authority (NCAA), Arik Air's head office and Aero Contractors head office in the Private Terminal of the Domestic Wing at Murtala Muhammed International Airport.

3.1.2. NNAMDI AZIKWE INTERNATIONAL AIRPORT ABUJA (DNAA)

Nnamdi Azikiwe International Airport is an international airport in Abuja, serving the Federal Capital Territory of Nigeria. It was named after the first Nigeria's President, Nnamdi Azikiwe.

The airport is approximately 20 km (12 mi) west of Abuja, and has an international and a domestic terminal that share its single runway. The airport was built in 2000 and opened in 2002. In November 2006 the Abuja Gateway Consortium signed a US\$101.1 million contract for the management of the airport over the next 25 years. The contract included the construction of an airport hotel, private car parks, shopping malls, and a bonded warehouse, totalling US\$50 million during its first five years, and additionally an upfront payment of US\$10 million. According to the business plan, total investments would have amounted to US\$371 million during the period of the contract. However, then-President Yar'Adua revoked the contract in April 2008 (FAAN, 2018).

3.1.3. PORT HARCOURT INTERNATIONAL AIRPORT (DNPO)

Port Harcourt International Airport is located in Omagwa, a suburb of Port Harcourt, the capital city of the Rivers State in Nigeria. The airport has two terminals for both international and domestic flights. On 18 August 2006, the airport was closed for repairs. The Nigerian Civil Aviation Authority stated that the emergency shutdown was in order to overhaul the runway and build a fence around the facility. Such maintenance had been in planning stages for several months, but an electrical fire on 17 August 2006 made repairs immediately necessary. All domestic flights were diverted to Sam Mbakwe Airport (Owerri), Akanu Ibiam International Airport (Enugu) and Margaret Ekpo International Airport (Calabar), while international flights were diverted to Nnamdi Azikiwe International Airport (Abuja) or Murtala Mohammed International Airport (Lagos) (FAAN, 2018).

3.1.4. MALLAM AMINU KANO INTERNATIONAL AIRPORT KANO (DNKN)

Mallam Aminu Kano International Airport is an airport serving Kano, the capital city of Kano State of Nigeria. It was a Royal Air Force station before the country became independent. It is the main airport serving northern Nigeria and was named after politician Aminu Kano. It is the oldest in Nigeria and the first aircraft landed in Nigeria was landed in Kano in 1922, with operations starting in 1936. The airport has an international and a domestic terminal. Construction started on a new domestic terminal and was commissioned on 23 May 2011. In 2009, the

airport handled 323,482 passengers. The bulk of international flights cater to the large Lebanese community in Kano and Muslim pilgrimages to Mecca.

In the first decades of operation, it became an important fuel stop for airlines flying long-haul services between Europe and Africa. Newer aircraft did not need such fuel stops and, with the demise of the Kano economy in the late 20th century, many international airlines stopped serving the airport. When they indefinitely suspended services to Kano in June 2012, KLM was the only European airline serving Kano, which they had done without interruption since 1947. The airport serves civilian and military flights (FAAN, 2018).

3.1.5. AKANU IBIAM INTERNATIONAL AIRPORT, ENUGU (DNEN)

Akanu Ibiham International Airport also known as Enugu Airport, is an airport serving Enugu, the capital city of Enugu State of Nigeria, and nearby cities, such as Abakaliki, Awka, Onitsha, Nnewi, Afikpo, Okigwe, Nsukka, Ugep, Orlu, Idah, Otukpo and Ogoja. The airport is named after the late Akanu Ibiham (1906–1995), a medical doctor and statesman who hailed from Afikpo in Ebonyi State. The airport was closed on February 10, 2010, by the Federal Airports Authority of Nigeria (FAAN) for the first phase of major renovation and expansion works. The airport was re-opened on 16 December 2010, but the second and third phase of the construction work is still ongoing. The airport is being prepared for its new status as an international airport (FAAN, 2018).

3.1.6. MAIDUGURI INTERNATIONAL AIRPORT, BORNO (DNMA)

The Airport serves as both domestic and international operations during Hajj operations. Maiduguri International Airport (IATA: MIU, ICAO: DNMA) is an airport serving Maiduguri, the capital of Borno State in Nigeria. The runway length does not include a 120 metres (390 ft) displaced threshold on each end. The Maiduguri VOR-DME (Ident: MIU) is located 2.9 nautical miles (5.4 km) northeast of the airport. The Maiduguri non-directional beacon (Ident: MA) is located on the field (FAAN, 2018).

4. RESULTS AND DISCUSSION

This section examines the trend and variation of passengers' movement on international air transport for an operational period of 14 years and reviews of the literature on problems confronting the international airport in regards to passengers handled.

4.1. TREND AND VARIATION OF PASSENGERS INVOLVING INTERNATIONAL MOVEMENT

The trend in passenger movement across the six (6) airports for the period under investigation showed an uneven and unbalance characterized with up and down movement from base year 2004 to 2014 but later sky rocketed with an unusual asymmetrical nature from 2014 to 2017 as revealed by table 2.

Table 2: International Air Transport Passenger Movement between year 2004 and 2017 for Six (6) International Airports in the Six (6) Geo-political Zones in Nigeria.

YEAR	DNAA	DNEN	DNMA	DNKN	DNM M	DNP O	TOTAL	%
2004	2,132	NIL	1,518	1,456	17,009	1,151	23,266	0.1803
2005	4980	NIL	1256	1692	19,948	12,426	40,302	0.3123
2006	3382	NIL	916	1926	21,499	5,800	33,523	0.2597
2007	3332	NIL	983	1853	24,493	N/A	30,661	0.2376
2008	3318	NIL	1375	1886	24,493	448	31,520	0.2442
2009	4400	NIL	1766	1971	24,712	1,025	33,874	0.2624
2010	7054	NIL	1773	1832	24,927	849	36,435	0.2823
2011	8288	NIL	1213	2218	28,128	1,494	41,341	0.3203
2012	7918	NIL	1174	1932	29,387	2,312	42,723	0.3310
2013	8592	157	1,386	1,803	31,543	2,845	46,326	0.3589
2014	9500	387	1576	2531	32,931	2,426	49,351	0.3824
2015	954466	43051	49957	167428	3,095,408	128,016	4,438,326	34.3871
2016	885926	38200	110613	202589	2,945,914	91,499	4,274,741	33.1197
2017	687977	41004	49605	175304	2,748,367	82,296	3,784,553	29.3218
Total	2,591,265	122799	225,111	566,421	9,068,759	332,587	12,906,942	100
Daily passengers	514	86	45	112	1,799	71	174,418	
% Passenger Handled	20.08	0.95	1.74	4.39	70.26	2.58		
Descriptive Statistics								
	N	Minimum	Maximum	Mean	Standard Deviation			

DNAA	14	2132	954466	185090.4	360554.3
DNMA	14	916	110613	16079.4	32336
DNKN	14	1456	202589	40458.6	76926.8
DNMM	14	17009	3095408	647768.5	1238682.3
DNPO	13	448	128016	25583.6	44004.7
DNEN	5	157	43051	24559.8	22238.5
Valid N (list wise)	5				
ANOVA					
	Sum of Squares	Degree of Freedom	Mean Square	F- Ratio	Sig.
Between Groups	4140930786537. 629	5	828186157307.5 26	2.589	0.03 3
Within Groups	21752070812055 .020	68	319883394294.9 27		
Total Groups	25893001598592 .650	73			

Source: Author's Computation, 2020

5. CONCLUSION AND RECOMMENDATIONS

This paper examined the variation in trend of international air passengers transport operation as well as problems militating against the operations of the six (6) international in passengers handling in Nigeria. International air passenger's movement between 2004 and 2017 collected from FAAN were examined and analysed using descriptive statistics (table, mean and standard deviation) coupled with ANOVA to establish the variation of passengers' movement.

The finding revealed that, the trend of passenger movement across the six (6) airports is unusual, uneven and asymmetric in nature throughout 14 years period. The total number of passengers handled by the 6 airports for the period of 14 years is Twelve million Nine Hundred and Six Thousand, Nine Hundred and Forty Two (12,906,942), out of which the highest conveyed passengers was in year 2015 forming 34.4% in proportion and the lowest conveyed passengers was in year 2004 with 0.2% as also revealed by similar table 2.

On an individual airport basis, DNMM contributed most with a huge proportion of 70.3% of the total passengers followed by DNAA contributing 20.1% and the least 1% from AIAE while the remaining 3 airports handled 8.6%. The study also observed that an average of 174,418 passengers were carried per year for all the airports and the individual average for each of the airport per day shows as follows; { DNAA ($\bar{x} = 514$), DNEN ($\bar{x} = 68$), DNMA ($\bar{x} = 45$), DNKN ($\bar{x} = 112$), DNMM ($\bar{x} = 1,799$) and DNPO ($\bar{x} = 71$)}. The daily passengers handled showed that, DNMM capacity is highly utilized while DNAA is moderately utilized but the utilization capacity of the other airports is very low as shown in the same table 2.

More importantly, the study revealed the minimum and maximum passengers handled in the various airport as well as mean and standard deviation of

the individual airport. The highest maximum passengers handled were in DNMM with 3,095,408 passengers and highest minimum was in DNMM with 17009 passengers. It was also revealed that the highest minimum passengers' movement was recorded in DNEN with 43,051 while the least minimum passengers' movement occurred in DNEN with 157 passengers. The average annual mean and standard deviation of the passengers showed that DNMM has the highest with 647769 and 1238682 respectively. Meanwhile, the lowest annual mean passengers' movement was observed in DNMA with 16079 and lowest standard deviation in DNEN with 22239 passengers. The F-ratio of the study revealed that there is no significant variation in the international air passenger's movement of the airports examined, as the value of 2.589 is not significant at 5% alpha level (p -value >0.05).

It could therefore be concluded that the establishment of most of the airports in the northern and southern regions were more of a political than economic reason as they are being underutilized, this thus collaborate and go in line with the submission of Afolayan et al, (2012). More so, the high capacity and concentration of MMIA could be far-fetched from the facts that it is located at the economic nerve centre of the country as numerous multinational companies, headquarter of financial institutions, foreign high commission to mention a few are present there while little contribution of NAIA could also be traced to the presence of various federal government ministries and parastatals where it is located, as the city federal capital territory serves as the seat of power.

More importantly, the success of the international air passengers in economic and social integration has been over whelmed with high bureaucracy and favouritism among politicians, absence of national carrier and over dependency on foreign airlines operating in the shore of the country, cost of operation and maintenance, decaying facilities, absence of up-to-date technology, misplaced priority in the establishment of the most of the airports and most importantly incessant insecurity. Hence, the study recommended that, a stiff and strict policies and regulations be formulated for the establishment of airport on economic basis rather than political motive and also to encourage and enhance patronage of national carriers in other to less the burden of dependency of foreign airlines on international flights, employment and engagement of aviation professionals in the sector to curb the problems of bad management.

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