

VARIABILITY PATTERN OF FLIGHTS AND PASSENGERS MOVEMENT IN NIGERIA AIRPORTS

Afolayan^{1*}, O. S., Malik¹, N. A. and Ojerinola², K. B

¹*Department of Geography and Environmental Management, University of Ilorin.*

²*Department of Geography and Planning, Lagos State University, Ojo*

ABSTRACT

*Despite the huge financial involvement in aviation business globally, it remains the most reliable among the influential's. Nigeria as a country is not in exception with respect to both international and domestic operation under the auspice of NAMA, FAAN and NCAA as federal government agents. This paper examines the variation between passengers and aircraft movement Nigeria aviation industry. Annual values of passengers and domestic aircraft across Nigerian domestic and international airports were collected and subjected to correlation analysis to verify the relationship between them. It was show that the rate of passengers movement is directly proportional to the rate of aircrafts movement with correlation value of 0.780** at 0.01 level of significant. Also, about 86% and 72% of aircrafts and passengers movement across Nigeria airspace account for domestic while 14% and 28% approximately account for international route and passengers respectively. Similarity exist in aircraft and passenger trend pattern over years. The study suggest absolute attention from federal government to international sector in aviation industry.*

Keywords: Aviation, aircraft, domestic, flight, and passenger

INTRODUCTION

The history of aviation industry dates back to 1920s in Nigeria. Deba *et al.* (2005) reported that the earliest commercial aviation credited to Bud Carpenter, who undertook high-risk flight between Kano and Lagos, using the rail tracks as his guide. An enterprising pilot carried a few fare-paying passengers in a sea-plane between Lagos and Warri in 1930. The year 1935 ushered the operational flights from London to Nigeria with Imperial Airways later called British Overseas Airways Corporation (BOAC), commenced

operations with flights from London to Nigeria. As a result of development in aviation industry, the need for more aerodrome to handle the aviation enterprises became necessary. By the end of 1940, Lagos became a strategic base from where aircraft were being ferried to Middle East and India as part of the war effort. Also, in 1946, an edict establishing the West African Air Transport Authority (WAATA) was issued by the King of England as well as the formation of the West Airways Corporation (WAAC). Ghana

withdrew from the company in 1957 after her independence and Nigeria government in collaboration with BOAC and Elder Dempster lines formed the West African Airways Corporation (Nigeria) Limited which later transformed to Nigeria Airways. The Nigeria Aviation Industry is divided into three namely; Nigerian Airspace Management Agency (NAMA), Nigerian Civil Aviation Authority (NCAA), and Federal Airport Authority of Nigeria (FAAN). The development of Aviation industry in Nigeria began in 1946 at the end of the Second World War with the defunct West African Airway Corporation (WAAC) with headquarters situated in Lagos (Filani, 1975). The corporation operated between Nigeria, Gold coast (Ghana), Sierra Leone and the Gambia with Dove Aircraft.

Government attention towards air transport in 1970s was more of political and social consideration than the economic aspect. (Afolayan *et al.*, 2012) Thus, the attention gave rise to development and expansion of sixteen (16) Airports including Lagos, Ibadan, Benin, Enugu, Kaduna, Jos, Maiduguri, Port Harcourt among others. The Lagos, Kano, Abuja, Port Harcourt Airports have been upgraded to international standard.

At present, Lagos airport alone handles about 80% of the domestic and international passengers, which makes it to be recognized as the most viable and functional airport in the country. Presently, Nigeria has a total of eight (8) international and twenty (20) domestic

Airports including other landing stations for private organizations as well as the Nigeria military. Despite the fact that air transport is the fastest and most convenient means of transport system in developing nations of Africa, it is the least patronized due to financial constraint amongst citizen and the economic challenges facing most developing nations including Nigeria. Owing to this fact, movement of passengers and aircraft vary with respect to economic challenges facing different individuals, countries as well as time of the year. The holy pilgrimage between 11th and 12th Lunar month Islamic obligation of performing normally generate the highest rate of passengers movement in and out of the country.

Therefore, this study aim to assess the variation in passengers and aircrafts movement pattern across the airports in Nigeria. This study particularly analyze the trend pattern in passengers and aircrafts movement for twelve years, establish the association that exist between the rate of passengers and aircrafts movement in both international and local airports.

STUDY AREA

Nigeria is located in longitude 3⁰E and 15⁰E and latitude 4⁰N and 14⁰N of the equator. It is bounded in the north by Niger Republic, south by Atlantic ocean, east by Cameroon and Chad and west by Benin Republic. With respect to NPC, 2006, Nigeria was over 140 million and projected to be about 167 million by 2011.

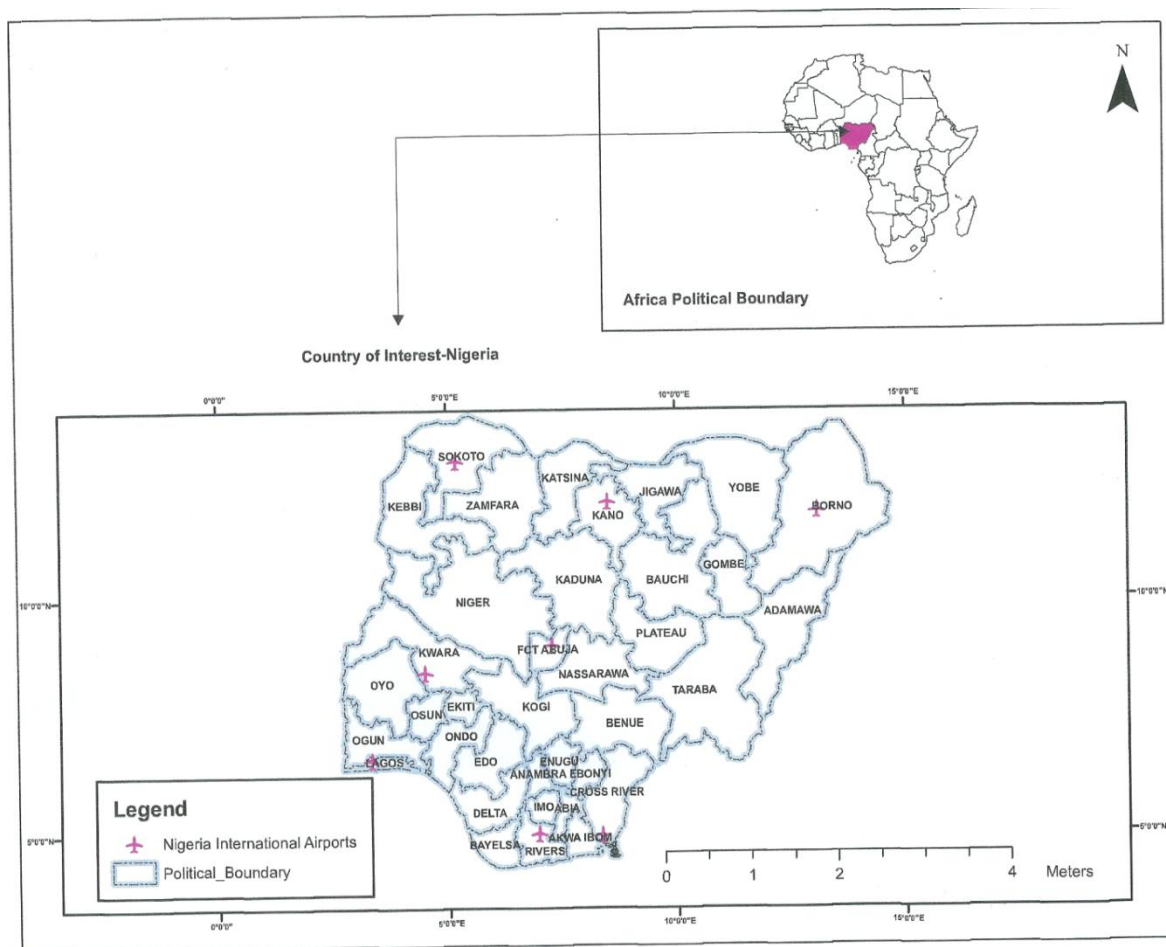


Figure 1: Spatial Location of International Airport in Nigeria

Source: Federal Airport Authority of Nigeria, 2012

Presently, Nigeria has eight (8) major International Airports and the most functional among them are Murtala Muhammed Airport (MMA), Lagos, Nnamdi Azikwe International Airport, Abuja and Mallam Aminu Kano International Airport, Kano (MAKIA). MMA is the busiest international Airports in Nigeria that always account for more than 80% of the international airport service operation in Nigeria follow by MAKIA. Five (5) of the International Airport were located in the northern part of the country

while the three (3) were in the southern. The figure below illustrate the spatial and geographical location of International Airports in Nigeria.

MATERIALS AND METHODS

Data for this analysis primarily sourced from Nigerian Airspace Management Agency (NAMA) and Federal Airport Authority of Nigeria (FAAN). Collection of data mainly based on information about passengers, aircraft arrivals and departure across the airports. The data covers twelve

years (from 2000 to 2012).The data collected were analyzed using descriptive and inferential statistics. The descriptive analysis involved using tables and graphs. The inferential statistics involved using Time Series Analysis to show annual

pattern of both movements while Pearson Moment Product Correlation was applied to examine the relationship between the annual aircrafts and passengers movement over the years.

RESULTS AND DISCUSSION

Table 1: Annual Movement of Aircraft and Passengers in Local and International Airport in Nigeria

Aircrafts in Domestic and International					Passengers in Domestic and International			
Year	Domestic	International	Variation(%)	Total	Domestic	International	Variation(%)	Total
2000	101530	22540(22.20)	78990(77.80)	124070	3384262	1882124(55.69)	1502138(44.39)	5266386
2001	123684	21689(17.54)	101995(82.46)	145373	4399333	2151542(48.90)	2247791(51.09)	6550875
2002	120507	24566(20.39)	95941(79.61)	145073	4831525	2601330(53.84)	2230195(46.16)	7432855
2003	138699	22997(16.58)	115702(83.42)	161696	5573101	2334493(41.89)	3238608(58.11)	7907594
2004	168054	23185(13.79)	144869(86.21)	191239	6461551	2458557(38.04)	4002994(61.95)	8920108
2005	160198	26681(16.16)	133517(83.34)	186879	6839707	2744888(59.87)	4094819(40.13)	9584595
2006	196321	26795(13.65)	169526(86.35)	223116	7016780	2780256(39.62)	4236524(60.38)	9797036
2007	191805	27976(14.59)	163829(85.41)	219781	7174200	2984192(41.60)	4190008(58.40)	10158392
2008	216502	32166(14.86)	184336(85.14)	248668	8675937	3439629(39.65)	5235308(60.35)	12115566
2009	232459	33686(14.49)	198773(85.51)	266145	10030821	3182602(31.73)	6848219(68.27)	13213423
2010	230532	39181(16.99)	191351(83.01)	269713	1140165	3746236932.86)	7655415(66.13)	15147887
2011	244926	39758(16.23)	205168(83.77)	284684	11576181	4061508(35.08)	7514673(64.91)	15637689
	(85.88%)	(14.12%)	(83.50%)	205536.42	(71.77%)	(28.23%)	(56.69%)	10144367.17

The aircrafts and passengers movement in table 1 revealed that the domestic flights are higher than the international flights. The variation in domestic and international aircraft for the movement for the period of 12 years was 85.50%. Also percentage variations in movement between domestic and international airports was 56.69% for the 12 years period.

Furthermore, international and aircraft movement were highest between

2000-2003 with 55.61%, 48.90% and 53.84% as well as 22.20%, 17.14% and 20.39% for passengers and aircraft movement respectively (See table 2). However, domestic passenger and aircraft movement were above 60% for 2000-2003 while the remaining 9 years(2004-2011) were above 70%. Figure 1 and 2 revealed that the domestic aircraft variation follow similar trends with slight oscillation.

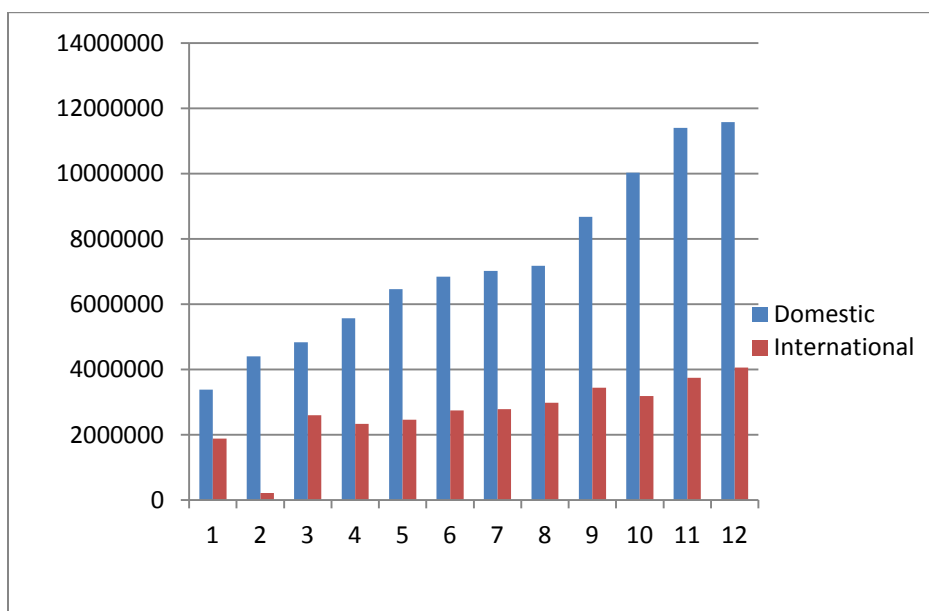


Figure1. Passenger in domestic and international

Source: Authors Fieldwork, 2012

Table 2: Percentage Variation in Passenger, Aircraft and Revenue

Year	Passengers Variation	Aircrafts Variation
2000	44.39	77.80
2001	51.09	82.46
2002	46.16	79.61
2003	58.11	83.42
2004	61.95	86.21
2005	40.13	83.34
2006	60.38	86.35
2007	58.40	88.41
2008	60.35	85.14
2009	68.27	85.51
2010	66.31	83.01
2011	64.91	88.77
	56.70	84.17

Source: Authors Fieldwork, 2012

Correlation Coefficient Passengers and Aircrafts Variation

$R = 0.688^*$, $R^2 = 0.4733$ @ 0.05

The correlation analysis revealed a correlation coefficient of 0.780** at 0.01 level of significant for international passengers and aircraft movement. The implication of this result is that the rate of aircraft movement is directly proportional to

passengers movement. Similar interpretation is applicable to domestic passengers and aircraft movement with correlation coefficient of 0.749** at 0.001 level of significant.

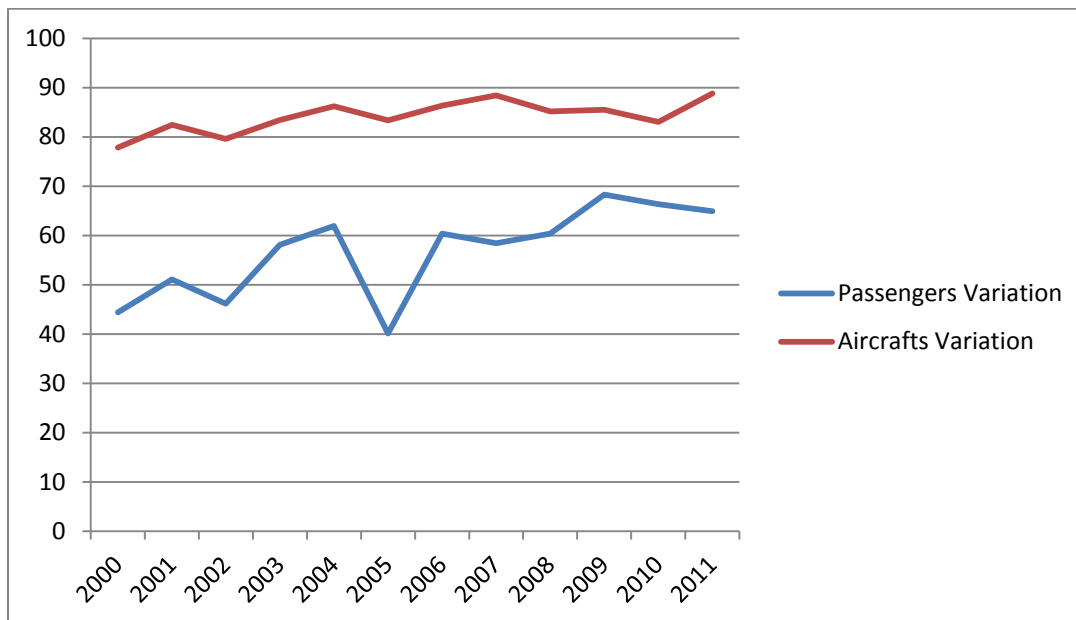


Figure 2. Passenger and Aircraft Variation in Nigeria Airports.

Source: Authors Fieldwork, 2012

Both domestic aircraft and passenger variation follow the same pattern of change with slight oscillation. From correlation coefficient ($R^2=0.47$), it shows that the rate of passengers movement is directly proportional to the rate of aircrafts movement across the airports with correlation value of 0.780** at 0.01 level of significant. However, the higher the rate of aircraft flight, the higher the rate of passenger movement across both internal and international boundary. From table 1, about 86% approximately of aircraft

movement across the Nigeria airports account for domestic while the remaining 14% are for international flight. Most of Nigeria airlines are owned by Nigerian Politician in government and highly responsible for the major debts in aviation industry than international airlines. This has been the root of the dead of the then Nigeria Airway. Most of these airlines default of operation payment unlike foreign airline. However, despite a lot of transfer of ownership and privatization of aviation

industry, some local airlines are dying while few are spring up.

CONCLUSION AND RECOMMENDATION

This work has shown the trends of passengers and aircraft movement for domestic and international airports in Nigeria. This study has shown that despite

the recent occurrence of aircraft accident, the rate of aircraft and passengers movement in Nigeria is high. This implied that people still patronize air transport in Nigeria. Therefore, it is recommended that great attention should be directed towards the aviation industry by the necessary agencies such as NAMA, NCAA and FAAN.

REFERENCES

- Deba, U. (2005) A Flight Higher. 80 Years of Aviation in Nigeria 1925-2005. Business Traveling Company, Lagos
- Filani, M.O. (1975) Air Transport Geography of Nigeria Development. 2nd Edition, Heinemann Publication, Ibadan.
- Federal Airport Authority of Nigeria (2011) Service Profile Murtala Muhammed Airport Headquarter, Ikeja Lagos, Nigeria.
- Nigerian Airspace Management Agency, (2010) Annual Report Murtala Muhammed Airport Headquarter, Ikeja Lagos, Nigeria.
- Nigerian Civil Aviation Authority,(2010) Annual Report Murtala Muhammed Airport, Headquarter, Ikeja Lagos.
- Federal Airport Authority of Nigeria,(2011) Annual Report Murtala Muhammed Airport, Headquarter, Ikeja Lagos, Nigeria.