Redeemer's University Journal of Management and Social Sciences, Vol. 5 (1) 2022

Assessment of the Flows of Passenger Movement at Nigeria International Terminal from 2007 to 2015

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Abstract

This paper provides an assessment of the flows of passenger movement at the Nigeria International terminal between 2007-2015. The need to sustain flow across the various geopolitical zones encourages the establishment of the international terminal, which spans the geopolitical zone of the country; however, the characteristics and pattern of flow of these terminals are yet to be established. Therefore, this research provides the longitudinal dimension of assessment for ten years to examine the pattern of passenger flows and contribution to national development and cohesion. The methodology involves a longitudinal trend evaluation for ten years across the eight international terminals in the country. The data were analysed with descriptive statisics such as percentages. The study reveals variation inflows across the terminal as some recorded a spontaneous increase in the passenger flow pattern, while some were erratic and inconsistent for the years considered. The last pattern reveals a stagnant trend across the period. Generally, there were significant improvements in passenger flows. The most terminal in the study provides consistent benefits for the purpose of their establishment and contributes to Nigeria's national integration and national development.

Keywords: Assessment; Passenger flow; International; Terminal; Nigeria

1. INTRODUCTION

An international airport of any economy is an air terminal that provides customs and immigration facilities to travellers. International airports are typically more extensive than domestic airports and usually feature longer runways and facilities to accommodate heavier aircraft, commonly used for international and intercontinental travel. International airports also host some domestic flights. Buildings, operations and management are now increasingly sophisticated since the mid-20th century when international airports began to provide infrastructure facilities for international civilian flights. Detailed technical standards have already been developed to ensure safety, and common coding systems have been implemented to provide global consistency.

The physical structures that serve millions of individual passengers and flights are among the most complex and integrated. By the second decade of the 21st century, over 1,200 international airports and almost two billion international passengers alongside 50 million metric tonnes of cargo were passing through them yearly. Air transportation is an essential aspect of economic development. It represents one of the yardsticks for gauging growth. The aviation industry worldwide is credited for a significant influence in terms of development. Even in the face of airline mishaps that have ravage the industry.

However, there has been dramatic investment in developing international terminals in Nigeria as they are seen as strategic infrastructure for integration and involvement. The relevant policy has been tinted towards ensuring that the international terminal is located across the country's major geopolitical zones. Such international infrastructure acts as a potential fulcrum that attracts international traffic into such areas. This traffic often provides enormous socio-economic benefits to those regions and locations. Such developmental efforts have already been witnessed in the geopolitical hub where we have an international terminal in Nigeria.

While the importance of international terminal provision abounds in literature. Few studies have focused on international terminal and passenger patterns in a developing economy. Especially those that evolve regional patterns of passenger attraction for socio-economic consideration and factors of regional development. The Nigerian administrative set-up of geopolitical zones perfectly fits the role of having an international airport terminal in each geopolitical zone as a socio-economic development pole for each region. Hence this study assess the passenges flows at the Nigeria international terminal from 2007-2015.

2. LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

This section examines the relevant theoretical underpinning of the assessment of passenger flow between the the period of 2006-2015 The concept of international terminal and passenger and fright are discussed. In addition, the relevant literature on the subject matter reviewed. Adugu-Ani, (2007) claimed that transport analysts and policymakers, particularly in

developed countries, are increasingly interested in the efficiency and performance of airports. However, studies on competence utilisation of airports can be traced to the last decades, when air transport experts and decision-makers or policymakers globally observed significant differences in most airports' operational efficiency and activity patterns.

Oxford Economics (2010) posits that quite a few studies in developing countries, including Nigeria, have addressed the issue of operational efficiency and capacity utilisation of airports. The literature on this issue was reviewed under the following sub-headings: Airport traffic, efficiency and regulation; Economic of the scale of the airport industry and Cost Function, output and input of airport industry. Air services are provided by flights maintained over permanent air routes established by the civil aviation authority subject to navigational regulations. Airports constitute the main component of an air-route network. It is a terminal in the air transport system that performs various functions to facilitate passenger or freight movement. It is a civil aviation establishment that serves airlines and other categories of operators and incorporates various facilities for handling passengers, baggage, freight, and mail (Airports Council International, 2014). A typical airport consists of quite some buildings and structures. The key features include runways, taxiways, aircraft parking areas, terminal buildings, and hangars.

There are facilities for airport buildings and aircraft maintenance. The size and arrangement of these facilities are determined to ensure the safe, efficient, and low-cost functioning of an airport. The primary function of an airport is to serve as a terminal in an airline's network where the movement of passengers or freight is halted so that some "value-adding" activity (transfer, storage, retrieval, repackaging, documentation etc.) can be performed (Airport Council International, 2014). Applying appropriate facilities and services in its logistics, an airport keeps passengers and freight traffic moving at a constant speed through the transport system. These value-adding activities are classified into five major functions**:**

Consolidating Function: Perovic (2013) argued that airports provide the points at which passengers are combined to form a planeload to match an aircraft's seat capacity. The terminal is the ideal point where the passenger manifest is compiled for a specific flight. Likewise, small shipments are combined at the transit sheds to form larger units that can constitute a full load for a cargo plane. This consolidating function is important for aircraft operations as it ensures the carrier's capacity utilisation.

Dispersion Function: It encompasses a broad range of services offered to passengers who disembark from an aircraft and depart from an airport. It involves separating more passengers into small units for delivery to final destinations. An average passenger is self-discharging, and freight may be held temporarily until the consignees or agents come for clearance and collection. (Perovic, 2013).

Passenger and Freight Services: These services involve the accommodation of passengers at the terminal from the elements. Ticketing, catering, information, and shopping facilities are provided. Freight services include receiver, sorting, storage, documentation and delivery. (Ishutkina and Hansman 2008)

Vehicle Services: Ishutkina and Hansman (2008) posit that airports provide facilities such as hangars, workshops, and maintenance and repair services for airlines and private operations. Provision of fuels, charging services, and cleaning, food, and water supplies are obtainable at airports.

Interchange Function: Airports are interchanges between the road and rail modes' air and land transport systems. Facilities such as car parks and road traffic control systems are also provided to ease the flow of vehicular traffic. Aprons and loading ramps are essential features of the interchange function.(Agbo, 2008)

Air Transportation: Air transport is relatively expensive compared with other modes of transport like road, rail and water transportation. However, air transport is the fastest of these modes and the choice for medium and long-distance movements for those in positions of authority and the rich. There is, therefore, the temptation for governments in the developing countries to lay more emphasis on its provision and promotion at the expense of other modes that are more relevant to the needs of the governed populace.

An increase in global wealth and life longevity and relative reduction in the global level of poverty has made the demand for air transportation rise in the last two decades. This debate has been heightened in the UK by publishing a strategic framework for expanding airport and runway capacity over the next 30 years (Advisory Council for Aeronautics Research in Europe, 2013). Failure to accommodate this growth would have severe ramifications for tourism, the finance sector, and other businesses that rely on world markets (Adenigbo, Joseph, and Andrew, 2014). Aviation will thus continue to play an important role in the future prosperity of the Nigerian and world economies.

However, transport infrastructures are pretty expensive to put in place. Building one is costly, too, as resources are limited. Several sectors of the economy share these limited resources that must also be considered in resource allocation. (Adugu-Ani, 2007)

The building of airports or any such infrastructures can only be justified when the facilities are optimally utilised. In a developing economy like Nigeria, air transport will not be a priority sub-sector of the transport sector in resource allocation. Therefore, would it be justifiable to invest heavily in airports at the expense of road and rail, both of which are the prime carrier of the majority? Airport capacities must be adequately utilised to remain meaningful for the allocated resources and attract more. Are the airports' capacity adequately utilised? (Adenigbo, Joseph, and Andrew 2014)

Developing countries such as Nigeria face the twin pressures of economic growth and environmental protection in the 21st century. Adenigbo, Joseph, and Andrew (2014) opined that transport demand management needs to be carried out in accordance with the principles of sustainable development and the maintenance of the ecological environment so that we can attain the objective of coordinating the needs of the present without compromising the ability of future generations to meet their own needs.

Airport capacities are increasingly getting smaller and need to be expanded. Adugu-Ani (2007) suggested that 90% of business travellers wanted the UK government to take to action to

increase runway and terminal capacities at Heathrow. Following this, the case runways and terminals have been improved with the building of Terminal 5. In Nigeria, the same is confirmed as the Murtala Mohammed Airport (MMA), and Port Harcourt Airport had their runways increased recently. Few industries have developed and grown as rapidly as air transport. Traffic congestion in both developed and developing countries is getting worse as the capacity of networks cannot increase at a rate to match the increase in demand (Button and Taylor, 2011). However, are the arguments for increasing and increased capacity justifiable, particular in developing countries where in most cases, capacities are often underutilised but vaguely seen as over-utilised?

Button and Taylor (2011) studied the productivity of 58 European airports and their use of infrastructures based on the annual and designed peak hour (DPH) runway and terminal demand using benchmarking to know the role of capacity utilisation in airport performance. To make airports comparable regarding the capacity of the airport system to serve demand, they made an effort to isolate peer groups with productivity characteristics. He also proposed benchmarking, a rule-of-thumb methodology for separating an airport's DPH.

3. METHODS

3.1. Research design: The research design in this context would be a longitudinal study of the international flight operations in Nigeria's international terminals for ten (10) years (from 2005-2015). This research analyses international flight operations in Nigerian international airports from 2006-2015. Therefore, the study population includes eight (8) international airports located across the nation. They include:Murtala Muhammed International Airport (Lagos), Nnamdi Azikwe International Airport (Abuja), Ilorin International Airport (Kwara State),Maiduguri International Airport (Borno State),Sadiq Abubakar International Airport (Sokoto State), Mallam Aminu Kano International Airport (Kano State),Port Harcourt International Airport (Rivers State), Margaret Ekpo International Airport (Cross Rivers State).

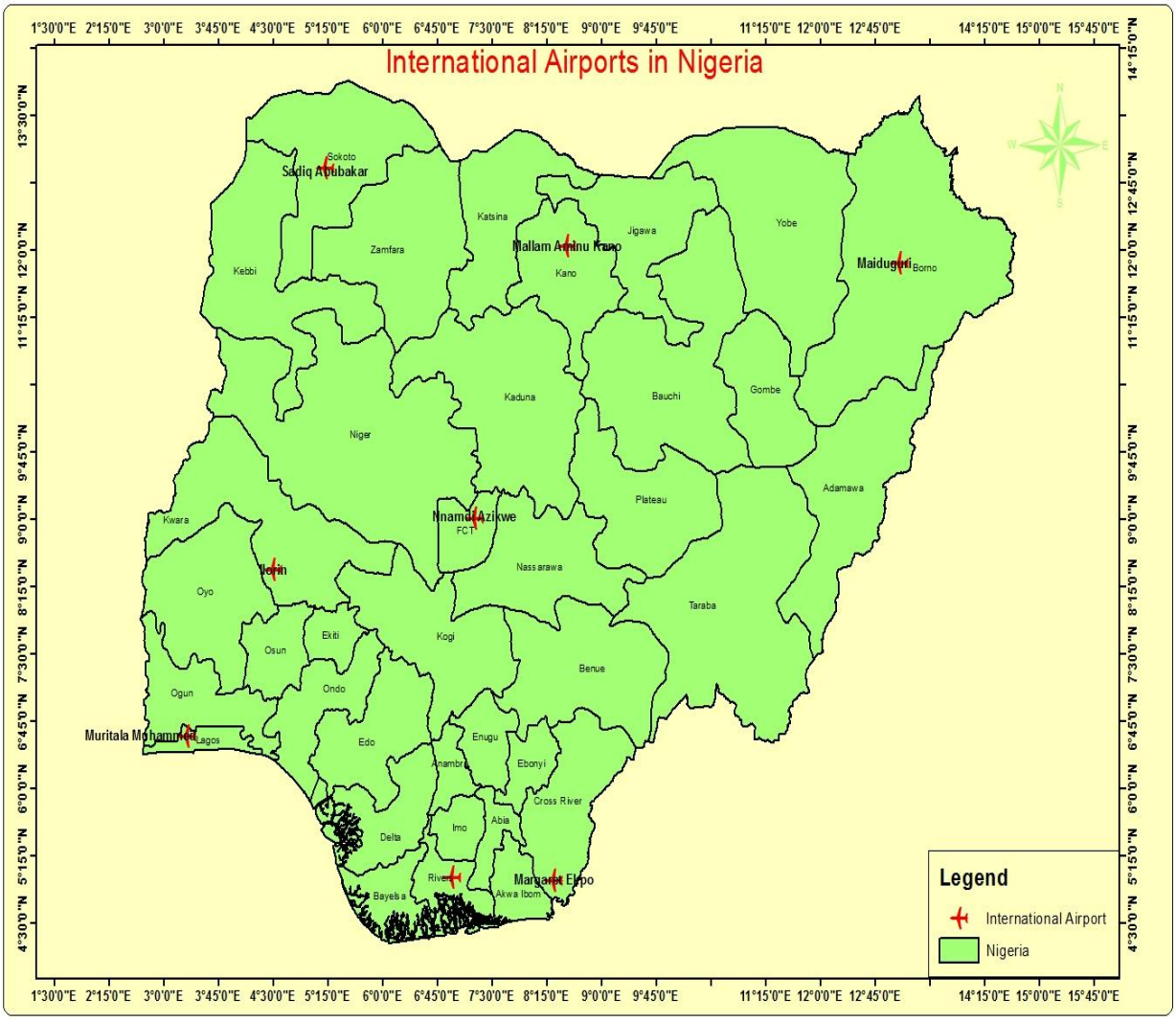

Figure 1 Locations of International Airports in Nigeria

Secondary data was used to gather information (data) for this study, which was used to elicit information from the eight (8) international air terminals in Nigeria (which have been mentioned above) on global flight operations in international terminals in Nigeria. The secondary data was sourced from publications of the Nigerian Airspace Management Agency (NAMA), Nigeria's Air Navigation Provider, and thus is responsible for providing air traffic management in the country. The agency offers services in all the airports in the country and efficiently manages over 30,000 aircraft movements, and provides flight information services.

For this study, secondary data was gathered from publications of the Nigerian Airspace Management Agency (NAMA) on international flight operations in the eight (8) international terminals in Nigeria for the years the research will cover (from 2006-2015).

4. RESULTS AND DATA ANALYSIS

The primary data for the study is described and analysed in this part. Based on passenger characteristics of the passenger sample and the relationship between the variables that describe the attribute and the role, the analyses are both descriptive and inferential. In addition, the variables' significant correlations are examined. Table 1 shows the pattern from 2006 to 2015.

Table 1: Airports Passenger Traffic Flow

Airport	**2006**	**2007**	**2008**	**2009**	**2010**
Mma Int'l	2,152,315	2,430,224	2,742,460	2,459,915	2,819,824
Abuja Int'l	184,163	231,884	331,839	366,606	524,339
Kano Int'l	246,444	219,666	217,234	198,142	222,578
Phc Int'l	106,218	20	11,756	55,555	27,634
Calabar Int'l	3,932	2,361	701	2,966	593
Maiduguri Int'l	13,853	10,908	14,902	16,068	22,864
Sokoto Int'l	30,070	37,520	46,861	27,234	46,385
Ilorin Int'l	2,073	6,837	6,057	7,036	10,517
Total	**2,739,068**	**2,939,420**	**3,371,810**	**3,133,524.00**	**3,674,734**
Airport	**2011**	**2012**	**2013**	**2014**	**2015**
Mma Int'l	3,095,235	683,470	3,383,338	3,243,008	3.095,408
Abuja Int'l	558,251	153.458	829,263	828,977	954,466
Kano Int'l	203,262	109.095	125,377	111,603	128,016
Phc Int'l	66,667	252	119,782	214,792	167,428
Calabar Int'l	386	25,455	687	13,907	0
Maiduguri Int'l	11,050	69,701	30,663	279	21,476
Sokoto Int'l	41,039	4,963	13,025	18,089	4,447
Ilorin Int'l	9,339	0	7,209	2,175	5,049
Total	**3,985,229**	**1,046,394**	**4,509,344**	**4,432,830**	**4,376,290**

Table 1 and figure 1 show the pattern from 2006 to 2015. In 2006 MMA INT'L recorded the highest passenger movements (2,152,315). This figure accounts for 79.6% of the total passenger movement; in the same order, KANO INT'L recorded (246,444), representing 8.9% of the total passenger movement. ABUJA INT'L recorded a total passenger movement of 184,163, representing 6.8% of the total passenger movement, PHC INT'L recorded an entire passenger movement of 106,218, representing 3.8% of the whole passenger movement, SOKOTO INT'L recorded a total passenger of 30,070 representing 1.1% of the total passenger, MAIDUGURI INT'L recorded a whole passenger movement of 13,853 representing 0.5% of the total passenger movement, CALABAR INT'L recorded a total passenger of 3,932 representing 0.2% of the total

passengers' movement. In comparison, ILORIN INT'L registered 2,073, representing 0.1% of the full passenger movement. This statistic implies that for the year 2006, MMA INT'L recorded the highest number of passenger movements (2,152,315) while ILORIN INT'L, the lowest, registered 2,073, representing 0.1% of the total passenger movement.

In 2006 MMA INT'L recorded the highest number of passenger movement (2,430,224); this account for 82.6% of the total passenger movement, and the total passenger movement recorded in 2007 is higher than that of 2006 ((2,152,315). In the same order, ABUJA INT'L recorded (231,884) representing 7.9% of the total passenger movement, KANO INT'L recorded a total passenger movement of 219,666, representing 7.5% of the total passenger movement, SOKOTO INT'L recorded a total passenger movement of 37,520 representing 1.3% of the total passenger movement, MAIDUGURI INT'L recorded a total passenger of 10,908 representing 0.4% of the total passenger, ILORIN INT'L recorded a total passenger movement of 6,837 representing 0.1% of the total passenger movement, CALABAR INT'L recorded a total passenger of 2,361 representing 0.2% of the total passengers' movement. In comparison, PHC INT'L recorded 20 representing 0.01% of the total passenger movement. This data implies that for the year 2007, MMA INT'L recorded the highest number of passenger movement (2,430,224), which accounted for 82.6% of the total passenger movement, while PHC INT'L recorded the lowest recorded 20 representing 0.01% of the total passenger movement

In 2008 MMA INT'L recorded the highest number of passenger movement (2,742,460) this account for 81.3% of the total passenger movement. in the same order ABUJA INT'L recorded (331,839) representing 9.8% of the total passenger movement, KANO INT'L recorded a total passenger movement of 217,234, representing 6.4% of the total passenger movement, SOKOTO INT'L recorded a total passenger movement of 46,861, representing 1.4% of the total passenger movement. MAIDUGURI INT'L recorded a total passenger of 14,902, representing 0.4% of the total passenger. PHC recorded a total passenger movement of 11,756, representing 0.3% of the total passenger ILORIN INT'L recorded a total passenger of 6,057, representing 0.2% of the total passengers' movement. CALABAR INT'L recorded 701, representing 0.1% of the total passenger movement. This outcome implies that for the year 2008, MMA INT'L recorded the highest number of passenger movement (2,742,460), which accounted for 81.3% of the total passenger movement, while PHC INT'L recorded the lowest recorded 20 representing 0.01% of the total passenger movement

In 2009 MMA INT'L recorded the highest passenger movement (2,459,915), accounting for 78.5% of the total passenger movement. The ABUJA INT'L recorded 366,606, representing 11.7% of the total passenger movement. KANO INT'L recorded 198,142, representing 6.3% of the total passenger movement. The PHC INT'L recorded 55,555, representing 1.8% of the total passenger movement, and SOKOTO INT'L recorded a total passenger of 27,234. This result means 0.9% of the total passenger. The MAIDUGURI INT'L recorded a total passenger movement of 16,068, representing 0.5% of the total passenger movement. ILORIN INT'L registered 7,036, representing 0.2% of the total movement. CALABAR INT'L recorded 2,966,

representing 0.1% of the total passenger movement. This result implies that for the year 2009, MMA INT'L recorded the highest number of passenger movement (2,742,460), which accounted for 81.3% of the total passenger movement, while CALABAR INT'L recorded 2,966, representing 0.1% of the total passenger movement

The table above revealed that in 2010 MMA INT'L recorded the highest number of passenger movements (2,819,824). This account for 76.7% of the total passenger movement. In the same order, ABUJA INT'L recorded (524,339) representing 14.3% of the total passenger movement, KANO INT'L recorded a total passenger movement of 222,578, representing 6.1% of the total passenger movement, ILORIN INT'L recorded a total passenger movement of 10,517 representing 0.2% of the total passenger movement, SOKOTO INT'L recorded a total passenger of 27,234 representing 0.9% of the total passenger, PHC INT'L recorded a total passenger movement of 27,634 representing 0.8% of the total passenger movement, MAIDUGURI INT'L recorded a total passenger of 22,864 representing 0.6% of the total passengers' movement while CALABAR INT'L recorded 593 representing 0.1% of the total passenger movement. This statistic implies that for the year 2009, MMA INT'L recorded the highest number of passenger movements (2,819,824). This account for 76.7% of the total passenger movement, while CALABAR INT'L recorded 593 representing 0.1% of the total passenger movement. In 2011 MMA INT'L recorded the highest number of passenger movements (3,095,235). This account for 77.72% of the total passenger movement. In the same order, ABUJA INT'L recorded (558,251) representing 14.0% of the total passenger movement, KANO INT'L recorded a total passenger movement of 203,262, representing 5.1% of the total passenger movement, PHC INT'L recorded a total passenger movement of 66,667 representing 1.7% of the total passenger movement, MAIDUGURI INT'L recorded a total passenger of 11,050 representing 0.3% of the total passenger, ILORIN INT'L recorded a whole passenger movement of 9,339 representing 0.2% of the total passenger movement, MAIDUGURI INT'L recorded a total passenger of 22,864 representing 0.6% of the total passengers' movement. In comparison, CALABAR INT'L recorded 386 representing 0.1% of the total passenger movement. This implies that for the year 2010 MMA INT'L recorded the highest number of passenger movement (3,095,235) this account for 77.7% of the total passenger movement while CALABAR INT'L recorded 386 representing 0.1% of the total passenger movement.

In 2012 MMA INT'L recorded the highest passenger movement (683,470), accounting for 65.3% of the total passenger movement. ABUJA INT'L recorded (153.458), representing 14.7% of the total passenger movement. KANO INT'L recorded a total passenger movement of 109.095, representing 10.4% of the total passenger movement, and MAIDUGURI INT'L recorded a total passenger movement of 69,701, representing 6.7% of the total passenger movement. The CALABAR INT'L recorded a total passenger of 25,455, representing 2.4% of the total passenger. SOKOTO INT'L recorded a total passenger movement of 4,963 representing 0.5% of the total passengers PHC I INT'L recorded a total passenger of 252, representing 0.02% of the total passengers' movement. In contrast, ILORIN INT'L recorded no passenger movement in this

year. This figure implies that for the year 2012, MMA INT'L recorded the highest passenger movement (683,470). This statistic accounts for 65.3% of the total passenger movement, while ILORIN INT'L recorded no passenger movement this year.

The table above revealed that in 2013 MMA INT'L recorded the highest number of passenger movements (3,383,338). This account for 75.0% of the total passenger movement. in the same order, ABUJA INT'L recorded (829,263), representing 18.4% of the total passenger movement, and KANO INT'L recorded a total passenger movement of 125,377, representing 2.9% of the total passenger movement. The PHC INT'L recorded a total passenger movement of 119,782 representing 2.7% of the total passenger movement. The MAIDUGURI INT'L recorded a total passenger of 30,663 representing 0.7% of the total passenger. SOKOTO INT'L recorded a total passenger movement of 13,025 representing 0.3% of the total passenger ILORIN INT'L recorded a total passenger of 7,209, representing 0.2% of the total passengers' movement. CALABAR INT'L recorded passenger movement of 687, representing 0.02%. This statistic implies that for 2012, MMA INT'L recorded the highest number of passenger movements (3,383,338). This account for 75.0% of the total passenger movement, while CALABAR INT'L recorded a passenger movement of 687, representing 0.02%. of the total passenger movement. In 2014 MMA INT'L recorded the highest number of passenger movements (3,243,008). This account for 73.2% of the total passenger movement. in the same order, ABUJA INT'L recorded (828,977) representing 18.7% of the total passenger movement, PHC INT'L recorded a total passenger movement of 214,792, representing 4.8% of the total passenger movement, KANO INT'L recorded a total passenger movement of 111,603 representing 2.5% of the total passenger movement, SOKOTO INT'L recorded a total passenger of 18,089 representing 0.4% of the total passenger, CALABAR INT'L recorded a total passenger movement of 13,907 representing 0.3% of the total passenger movement, ILORIN INT'L recorded a total passenger of 7,209 representing 0.2% of the total passenger's movement. In comparison, MAIDUGURI INT'L recorded passenger movement of 279, representing 0.01%. This data implies that for 2014, MMA INT'L recorded the highest number of passenger movements (3,243,008). This account for 73.2% of the total passenger movement, while MAIDUGURI INT'L recorded a passenger movement of 279, representing 0.01% of the total passenger movement.In 2015 MMA INT'L recorded the highest passenger movement (3.095,408). This account for 70.7% of the total passenger movement. in the same order ABUJA INT'L recorded (954,466) representing 21.8% of the total passenger movement, PHC INT'L recorded a total passenger movement of 167,428 representing 3.8% of the total passenger movement, KANO INT'L recorded a total passenger movement of 128,016 representing 2.9% of the total passenger movement, MAIDUGURI recorded a total passenger of 21,476 representing 0.5% of the total passenger, SOKOTO INT'L recorded a total passenger movement of 4,447 representing 0.1% of the total passenger movement, ILORIN INT'L recorded a total passengers of 5,049 representing 0.2% of the total passengers movement while CALABAR INT'L recorded no passenger movement for this year This implies that for the year 2015 MMA INT'L recorded the highest number of passenger movement (3.095,408) this account for 70.7% of the total passenger movement, while

MAIDUGURI INT'L recorded passenger movement of 279 representing 0.01% of the total passenger movement CALABAR INT'L recorded no passenger movement for this year. In 2006 MMA INT'L recorded the highest number of passenger movement (20,522) this account for 77.3% of the total Aircraft movement,. in the same order ABUJA INT'L recorded (2,416) representing 9.1% of the total Aircraft movement, KANO INT'L recorded a total passenger movement of 1,644 representing 6.2% of the total Aircraft movement, PHC INT'L recorded a total Aircraft movement of 1,526 representing 5.7% of the total Aircraft movement, CALABAR INTL recorded a total Aircraft of 196 representing 0.7% of the Aircraft movement MAIDUGURI INT'L recorded a Aircraft movement of 113 representing 0.4% of the total Aircraft movement, SOKOTO INT'L recorded a total Aircraft movement of 127 representing 0.5% of the Aircraft movement while ILORIN INT'L recorded 15 Aircraft movement representing 0.06% of the total Aircraft movement for that year This implies that for the year 2006 MMA INT'L recorded the highest number of passenger movement (20,522) this account for 77.3% of the total Aircraft movement, while ILORIN INT'L recorded 15 Aircraft movement representing 0.06% of the total Aircraft movement for that year. In 2007 MMA INT'L recorded the highest number of passenger movement (22,493) this account for 81.2% of the total Aircraft movement,. in the same order ABUJA INT'L recorded (3,071) representing 11.1% of the total Aircraft movement, KANO INT'L recorded a total passenger movement of 1,636 representing 5.9% of the total Aircraft movement, MAIDUGURI INT'L recorded a total Aircraft movement of 163 representing 0.6% of the total Aircraft movement, CALABAR INTL recorded a total Aircraft of 149 representing 0.5% of the Aircraft movement, SOKOTO INT'L recorded a Aircraft movement of 145 representing 0.5% of the total Aircraft movement, ILORIN INT'L recorded a total Aircraft movement of 45 representing 0.2% of the Aircraft movement while PHC INT'L recorded 14 Aircraft movement representing 0.05% of the total Aircraft movement for that year This implies that for the year 2007 MMA INT'L recorded the highest number of passenger movement (22,493) this account for 81.2% of the total Aircraft movement, while PHC INT'L recorded 14 Aircraft movement representing 0.05% of the total Aircraft movement for that year.

In 2008 MMA INT'L recorded the highest number of passenger movement (25,804) this account for 81.1% of the total Aircraft movement,. in the same order ABUJA INT'L recorded (3,391) representing 10.7% of the total Aircraft movement, KANO INT'L recorded a total passenger movement of 1,682 representing 5.3% of the total Aircraft movement PHC INT'L recorded a total Aircraft movement of 374 representing 1.2% of the total Aircraft movement, MAIDUGURI INTL recorded an entire Aircraft of 248 representing 0.8% of the Aircraft movement, SOKOTO INT'L recorded a Aircraft movement of 176 representing 0.6% of the total Aircraft movement, CALABAR INT'L recorded a total Aircraft movement of 86 representing 0.3% of the Aircraft movement while ILORIN INT'L recorded 70 Aircraft movement representing 0.2% of the total Aircraft movement for that year This implies that for the year 2008 MMA INT'L recorded the highest number of passenger movement (25,804) this account for 81.1% of the total Aircraft movement, while ILORIN INT'L recorded 70 Aircraft movement representing 0.2% of

the total Aircraft movement for that year. **I**n 2009 MMA INT'L recorded the highest number of passenger movement (24,963) this account for 74.7% of the total Aircraft movement,. in the same order ABUJA INT'L recorded (4,961) representing 14.8% of the total Aircraft movement, KANO INT'L recorded a total Aircraft movement of 1,761 representing 5.3% of the total Aircraft movement PHC INT'L recorded a total Aircraft movement of 1,316 representing 3.9% of the total Aircraft movement, MAIDUGURI INTL recorded an entire Aircraft of 151 representing 0.5% of the Aircraft movement, SOKOTO INT'L recorded a Aircraft movement of 173 representing 0.6% of the total Aircraft movement, CALABAR INT'L recorded a total Aircraft movement of 44 representing 0.2% of the Aircraft movement while ILORIN INT'L recorded 42 Aircraft movement representing 0.1% of the total Aircraft movement for that year This implies that for the year 2009 MMA INT'L recorded the highest number of passenger movement (24,963) this account for 74.7% of the total Aircraft movement, while ILORIN INT'L recorded 42 Aircraft movement representing 0.1% of the total Aircraft movement for that year. In 2010 MMA INT'L recorded the highest number of passenger movement (28,469) this account for 73.3% of the total Aircraft movement,. in the same order ABUJA INT'L recorded (6,725) representing 17.8% of the total Aircraft movement, KANO INT'L recorded a total Aircraft movement of 1,890 representing 4.9% of the total Aircraft movement, PHC INT'L recorded a total Aircraft movement of 1,268 representing 3.3% of the total Aircraft movement, MAIDUGURI INTL recorded a total Aircraft of 296 representing 0.5% of the Aircraft movement, SOKOTO INT'L recorded a Aircraft movement of 132 representing 0.3% of the total Aircraft movement, ILORIN INT'L recorded a total Aircraft movement of 105 representing 0.2% of the Aircraft movement while CALABAR INT'L recorded 31 Aircraft movement representing 0.08% of the total Aircraft movement for that year This implies that for the year 2010 MMA INT'L recorded the highest number of passenger movement (28,469) this account for 73.3% of the total Aircraft movement, while CALABAR INT'L recorded 31 Aircraft movement representing 0.08% of the total Aircraft movement for that year.

In 2011 MMA INT'L recorded the highest number of passenger movement (28,606) this account for 72.5% of the total Aircraft movement,. in the same order ABUJA INT'L recorded (6,715) representing 17.0% of the total Aircraft movement, KANO INT'L recorded a total Aircraft movement of 2,126 representing 5.4% of the total Aircraft movement ,PHC INT'L recorded a total Aircraft movement of 1,506 representing 3.8% of the total Aircraft movement, MAIDUGURI INTL recorded a total Aircraft of 127 representing 0.3% of the Aircraft movement, SOKOTO INT'L recorded a Aircraft movement of 288 representing 0.7% of the total Aircraft movement, ILORIN INT'L recorded a total Aircraft movement of 74 representing 0.2% of the Aircraft movement while CALABAR INT'L recorded 17 Aircraft movement representing 0.04% of the total Aircraft movement for that year This implies that for the year 2011 MMA INT'L recorded the highest number of passenger movement (28,606) this account for 72.5% of the total Aircraft movement, while CALABAR INT'L recorded 17 Aircraft movement representing 0.04% of the total Aircraft movement for that year.

In 2012 MMA INT'L recorded the highest number of passenger movement (29,063) this account for 73.0% of the total Aircraft movement,. in the same order ABUJA INT'L recorded (7,358) representing 18.5% of the total Aircraft movement, KANO INT'L recorded a total Aircraft movement of 1,390 representing 3.5% of the total Aircraft movement ,PHC INT'L recorded a total Aircraft movement of 1,807 representing 4.5% of the total Aircraft movement, MAIDUGURI INTL recorded a total Aircraft of 53 representing 0.04% of the Aircraft movement, SOKOTO INT'L recorded a Aircraft movement of 96 representing 0.2% of the total Aircraft movement, ILORIN INT'L recorded a total Aircraft movement of 15 representing 0.04% of the Aircraft movement while CALABAR INT'L recorded 25 Aircraft movement representing 0.06% of the total Aircraft movement for that year This implies that for the year 2012 MMA INT'L recorded the highest number of passenger movement (29,063) this account for 73.0% of the total Aircraft movement, while CALABAR INT'L recorded 25 Aircraft movement representing 0.06% of the total Aircraft movement for that year.

In 2013 MMA INT'L recorded the highest number of passenger movement (31,318) this account for 71.6% of the total Aircraft movement,. in the same order ABUJA INT'L recorded (8,364) representing 19.1% of the total Aircraft movement, KANO INT'L recorded a total Aircraft movement of 2,316 representing 5.3% of the total Aircraft movement ,PHC INT'L recorded a total Aircraft movement of 1,508 representing 3.4% of the total Aircraft movement, MAIDUGURI INTL recorded a total Aircraft of 95 representing 0.2% of the Aircraft movement, SOKOTO INT'L recorded a Aircraft movement of 89 representing 0.2% of the total Aircraft movement, ILORIN INT'L recorded a total Aircraft movement of 52 representing 0.1% of the Aircraft movement while CALABAR INT'L recorded 20 Aircraft movement representing 0.05% of the total Aircraft movement for that year This implies that for the year 2013 MMA INT'L recorded the highest number of passenger movement (31,318) this account for 71.6% of the total Aircraft movement, while CALABAR INT'L recorded 20 Aircraft movement representing 0.05% of the total Aircraft movement for that year.

In 2014 MMA INT'L recorded the highest number of passenger movement (31,424) this account for 69.4% of the total Aircraft movement, in the same order ABUJA INT'L recorded (8,977) representing 19.8% of the total Aircraft movement, KANO INT'L recorded a total Aircraft movement of 2,164 representing 4.8% of the total Aircraft movement ,PHC INT'L recorded a total Aircraft movement of 2,484 representing 5.5% of the total Aircraft movement, CALABAR INTL recorded a total Aircraft of 120 representing 0.3% of the Aircraft movement, SOKOTO INT'L recorded a Aircraft movement of 66 representing 0.1% of the total Aircraft movement, MAIDUGURI INT'L recorded a total Aircraft movement of 13 representing 0.03% of the Aircraft movement while ILORIN INT'L recorded 8 Aircraft movement representing 0.02% of the total Aircraft movement for that year This implies that for the year 2014 MMA INT'L recorded the highest number of passenger movement (31,424) this account for 69.4% of the total Aircraft movement, while ILORIN INT'L recorded 8 Aircraft movement representing 0.02% of the total Aircraft movement for that year.

In 2015 MMA INT'L recorded the highest passenger movements (9,870). This account for 83.6% of the total Aircraft movement; in the same order, ABUJA INT'L recorded (8,977) representing 19.8% of the total Aircraft movement, and KANO INT'L recorded a total Aircraft movement of 2,246, representing 2.6% of the total Aircraft movement, PHC INT'L recorded a total Aircraft movement of 2,065 representing 2.4% of the total Aircraft movement, MAIDUGURI INTL recorded a total Aircraft of 60 representing 0.07% of the Aircraft movement, SOKOTO INT'L and CALABAR INTL has no Aircraft movement for this year. This implies that for the year 2015, MMA INT'L MMA INT'L recorded the highest number of passenger movement (9,870), this account for 83.6% of the total Aircraft movement, while OKOTO INT'L and CALABAR INTL had no Aircraft movement for that year. Figure 1 shows the pattern from 2006 to 2015:

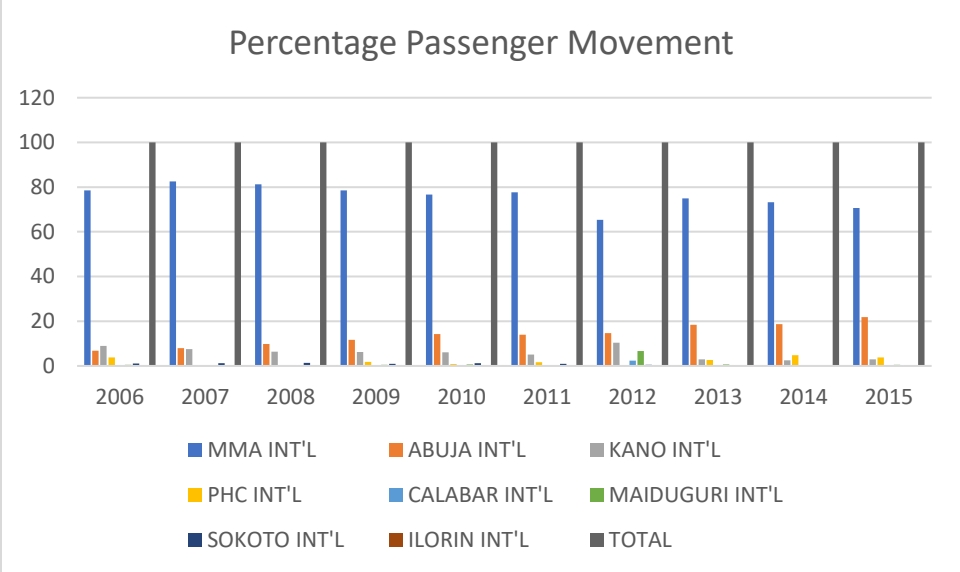

Fig 1 Percentage Passenger Movement

5. DISCUSSION OF FINDINGS

The study set out to examine the analysis of international flight operations in Nigerian international airports from 2006-2015. However, a longitudinal study was used to obtain a response, with secondary data from Nigerian Airspace Agency (NAMA) as the main research instrument. The result from the findings of the research work shows that:

The objective is to examine the trends of passenger movement at these international airports from 2006-2015. The findings showed that from 2006-2015; passenger movement has always been on the increase in all the eight (8) international airports for both arrivals and departure, except in the year 2012 which saw a drop in the flow of passengers in all the international airports to 1,046,394 compared to the 3,985,229 of 2011.

According to research objective two, which examines the flow pattern of aircraft movement in the eight (8) Nigerian international terminals from 2006-2015. The findings showed that from 2006-2015; aircraft movement has always been on the increase in all the eight (8) international airports for both arrivals and departure, it was shown that there was no occurrence of a decrease in the flow of aircrafts into all the eight airports.

According to research objective three which is to examine the relationship between passenger movement and flight movement patterns in these international airports for the years (2006-2015). The findings showed that for passenger movement in all the eight (8) airports from 2006-2015, Muritala Muhammed Airport (MMA) has the highest number of passengers arriving and departing from the airport, the second in this order is Nnamdi Azikiwe Airport (ABUJA INT'L), the third is the Mallam Aminu Kano Airport (KANO INT'L). From the findings, it was revealed that passenger movement in the other airports varied for different years so there was no specific order; the only predictable ones are the first three that have been mentioned above. Also from the findings it was revealed that Magaret Ekpo Airport (CALABAR INT'L) had the lowest figures for passenger movement for the period of 2006-2015.

Also the findings showed that for aircraft movement in all the eight (8) airports from 2006-2015, Muritala Muhammed Airport (MMA) has the highest number of aircrafts arriving and departing from the airport, the second in this order is Nnamdi Azikiwe Airport (ABUJA INT'L), the third is the Mallam Aminu Kano Airport (KANO INT'L). From the findings, it was revealed that aircraft movement in the other airports varied for different years so there was no specific order; the only predictable ones are the first three that have been mentioned above. Also from the findings it was revealed that Magaret Ekpo Airport (CALABAR INT'L) had the lowest figures for aircraft movement for the period of 2006-2015.

According to research objective five which is to ascertain if passenger and aircraft flow at Nigeria international terminals has improved over time. (From 2006-2015). The findings show that for the period of 2006-2015 which the research was conducted, passenger and aircraft flow have been on the increase in all the eight (8) international airports except for the year 2012 that saw a drop in the flow of passengers in all the international airports to 1,046,394 compared to the 3,985,229 of 2011, apart from this occurrence passenger and aircraft flow in all these terminals have been increasing as the years have passed by; therefore from the findings it was concluded that passenger and aircraft flow at Nigerian international airports has improved over time (from 2006-2015).

6. CONCLUSIONS

Without any contradiction, it is obvious that variation exist in aviation industry in Nigeria with respect to festivities, season and economy situation of the country. Movement of both passengers and aircrafts in and out of the country peak-up from the month of September to December, Islamic and Christian Pilgrimages periods (that is impact of religion).Strategic location of international Airports in Nigeria is more of political and religion bias rather than population

density and economy (high purchasing power, standard of living, industrial concentration e.t.c) consideration. These are more of some international airport located in the northern part of Nigeria with the exception of Mallam Aminu Kano Airport. Activities peak up there seasonally during political campaign and religion pilgrimage. Commence and trade also play prominent roles in the functioning of international airport. With respect to the most functioning airport 'MMA' being situated in the economy and commercial nerve of the country. It accounts for more than 80% of both international and domestic services in Nigeria. The impart of population cannot be underscored in relation to aviation industry owing to the fact that Lagos is the most populous and congested city in Africa.

High rate of departure over arrival has several impacts range from economic to social implication in the country. This may be attributed to brain-drain in Nigeria economy (Industrial Sector) because most of the emigrants are able-bodies people either underemployed or unemployed. This also reduces the country population at the expense of their destination increase. Some people's purpose of travelling during the peak months (September to December) may also be of tourism but they are less compare to those that have been staying back. The study had also discovered from the data analysed that, there has been a in aircraft as well as passenger movement in the eight (8) Nigerian international airports for the years 2006-2015, this has been due to different factors e.g airline participation in airports, pilgrimage and holiday seasons, closure and airport renovations etc. However, annual trend and pattern of passenger and aircraft movement in term of percentage variation shows high rate of change in passenger than aircraft for observed years.

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