



Analysis of Traffic Trends at Makurdi Domestic Airport, Nigeria

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ABSTRACT

This paper examines the traffic trends at Makurdi Airport, Nigeria with the view to determining its level of viability. Data on passengers and aircraft movement (both arrival and departure) at the Makurdi Airport from 2016-2023 was used. The data was analysed using descriptive statistics and presented in tables and graphs. The findings of the study indicate that passenger and aircraft traffic trends at Makurdi Airport have been increasing steadily until 2019 when the whole world was hit by Covid-19 pandemic. In 2019, lockdowns and travel restrictions were imposed in most countries including Nigeria. This led to a dramatic decline in passenger and aircraft traffic both on arrival and departure at the airport, with only 3.1% arrivals and 2.1% departures. However, air travel has gradually seen an uptick after the lockdowns with year 2023 experiencing the highest traffic at the Makurdi Airport within the period under review which clearly shows that the air transport industry is on the path to recovery. It is therefore important to note that due to the increase in passengers and aircraft movement at Makurdi Airport will continue to play a dominant role in boosting air transport in the region hence the need for strategic air traffic management that would ensure seamlessness in operations.

Keywords: Air traffic trend, Aircraft movement, passenger arrival/departure, Makurdi Airport

1.0 INTRODUCTION

Transport is a critical sector of the Nigerian economy, whose effect on socio-economic development cannot be overemphasized (Oyesiku, Onakoya and Folawewo, 2013). Transportation has remained one of the most vital factors that influence the development of a nation. The efficiency and effectiveness of a nation's transport system with which the mobility and accessibility of passengers and goods are achieved determines the quality of performance of the transport sector among other things. (Hassan, Akanni, and Osoba, 2016). Transportation involves the movement of people, goods, services and information between points in space. It helps in creating useful links between regions and economic activities; between people and the rest of the world (Rodrigue et al, 2006). Air transportation is the use of aircraft in moving people, goods and information from one point to another. The development of air transportation in Nigeria started after the World War II and it has since then, like other transportation modes, contributed to the socio – economic development of Nigeria, especially in areas of movement of people and goods within the country and across international borders, generation of revenue and employment.

According to Rodrigue (2013) transport provides the arteries through which the economic life of the people, information and raw materials as well as finished products is moved from one place to the other. The provision of transport infrastructure and services helps in reducing poverty. It needs no emphasis that various public actions aimed at reducing poverty cannot be successful without adequate transport infrastructure and services. It is difficult to visualize meeting the targets of universal education and healthcare for all without first providing adequate transport facilities (Ruzica, Jasmin and Bajic, 2017).

Makurdi Airport is a domestic airport serving Makurdi, the capital city of Benue State in Nigeria. The runway has an additional 266 metres paved overrun on each end. The Makurdi non-directional beacon is 1.2 nautical miles northwest of the runway. Makurdi Airport is a joint civil/military airport. The airport commenced operations in 1982. The airport is managed by the Federal Airports Authority of Nigeria, (FAAN) – a service organization statutorily charged by the Federal Government of Nigeria to manage airports in Nigeria and provide service to both passenger and cargo airlines. The Airport is a category four (4) Aerodrom based on NCAA classification. Generally to create conditions for the development in the most economic and efficient manner of air transport and the services connected to it, the agency has its head office located at the Murtala Mohammed International Airport in Ikeja, Lagos State. Main users of the airport are the Nigerian Air Force (which operate the runway and have the control tower within its domain which is adjacent the airport premises) and the general public within or visiting Makurdi.

Air transport is one of the fastest modes of public transport which connects international boundaries. Air transport allows people from different countries to cross international boundaries and travel other countries for personal, business, medical, and tourism purposes. Bardi (2017) maintain that, air transport allows the movement of people, goods and mail. Aircraft are the fastest means of transportation and therefore the most suitable for

shipping products within the supply chain that require fast delivery. Bardi (2017) also states that air traffic is classified into passenger, freight and mail. In Nigeria, domestic air traffic is classified into passenger, cargo, mail and excess luggage. Cargo and excess luggage constitute freight traffic; domestic air passenger traffic is the air passenger traffic exchanged by the city-pairs within the air transportation system in any country, including Nigeria. Cohen (2016) list the main characteristics that define air transportation as follows:

- **Faster transportation.** The airplane is much faster than a car, truck, train or ship, making it the ideal transportation system for transporting goods in the shortest possible time.
- **Ideal for accessing remote locations.** In very distant or remote destinations, other types of transport are inefficient. Air transport has practically no limitations to reach any place.
- **Security.** According to statistical data, the airplane is the safest means of transportation. It is a very reliable method of transportation, where the goods arrive at their destination in perfect condition. Freight insurance premiums in air transport are generally lower than in land or sea transport.
- **Shorter delivery times.** One of its main features and advantages, there is no doubt that delivery times are much shorter than in other transportation alternatives.

In addition to all these, air transport has almost no interruptions in space; it has no physical barriers as occurs in other modes of transport. A lot of changes have taken place over the years in the domestic air transport arena in Nigeria. The Nigerian government has formally liberalized the air transport sector since 2001 and as at 2018, many private airlines, among which were Aero Contractors, Arik Airlines, First Nation Airlines, Dana Airlines, Peace Airlines, Medview Airlines, Overland Airways, Azman Airlines and Max Airlines are participating in the provision of air transport services to take care of the increasing air passenger traffic (Aleksandra, 2018). However not all Airports in the country are currently enjoying commercial flight connections. Even those that have passenger traffic they have not been interrogated to ascertain their traffic trends with the view of empirically establishing their level of viability. This study focuses on Makurdi Airport which is one of the domestic Airports in Nigeria

2.0. STUDY AREA AND METHODOLOGY

Makurdi metropolis is one of the cities in Nigeria and is located between latitude 7°44'N and 7°55'N and longitude 8°20'E and 8°40'E (figure 1). The town is about 16km² radius, situated along the banks of the River Benue. The town falls within the tropical humid and mega thermal climate with wet and dry seasons (Aw) according to Koppen's classification. The climatic condition is influenced by two air masses: the warm, moist south westerly air mass, and the dry northeasterly air mass. The southwesterly air mass is a rain-bearing wind that brings about rainfall from the months of March/April to October. The dry north-easterly air mass blows over the region from November to April, thereby bringing about seasonal dryness. The annual rainfall in Makurdi is between 1,200-1,500mm (Adamgbe and Ujoh, 2012). The temperature condition is however, generally high throughout the year with a daily mean of 23°C - 28°C and maximum of 37°C (Tyubee, 2005). Due to the general low relief of the town which rises from 65-66m (210-220ft) in the river valley northwards and southwards to 154m (500ft), sizeable portions of the town are waterlogged and flooded during heavy rainstorm (FMWRRD, 1998).

The town is the largest city in Benue state with a projected population of 391,924 people as at 2016 (Tser, 2013). The town is the administrative capital of Benue state and Makurdi local government council. Major socio-economic activities in the town include government establishments, urban daily markets, banks, industries, two universities among other educational institutions, hotels, filling stations. These activities generate varying degree of traffic that tends to impact on air transport positively. Makurdi metropolis is among few cities in Nigeria with domestic Airports. Makurdi Airport (IATA code: MDI, ICAO code: DNMK) with geographical coordinates of 7° 42' 14'' N and 8° 36' 50'' E is situated at an elevation of 371 feet (113 m) above mean sea level. It has one runway designated 05/23 with a concrete surface measuring 2,996m by 50m (9,829 ft × 164 ft).

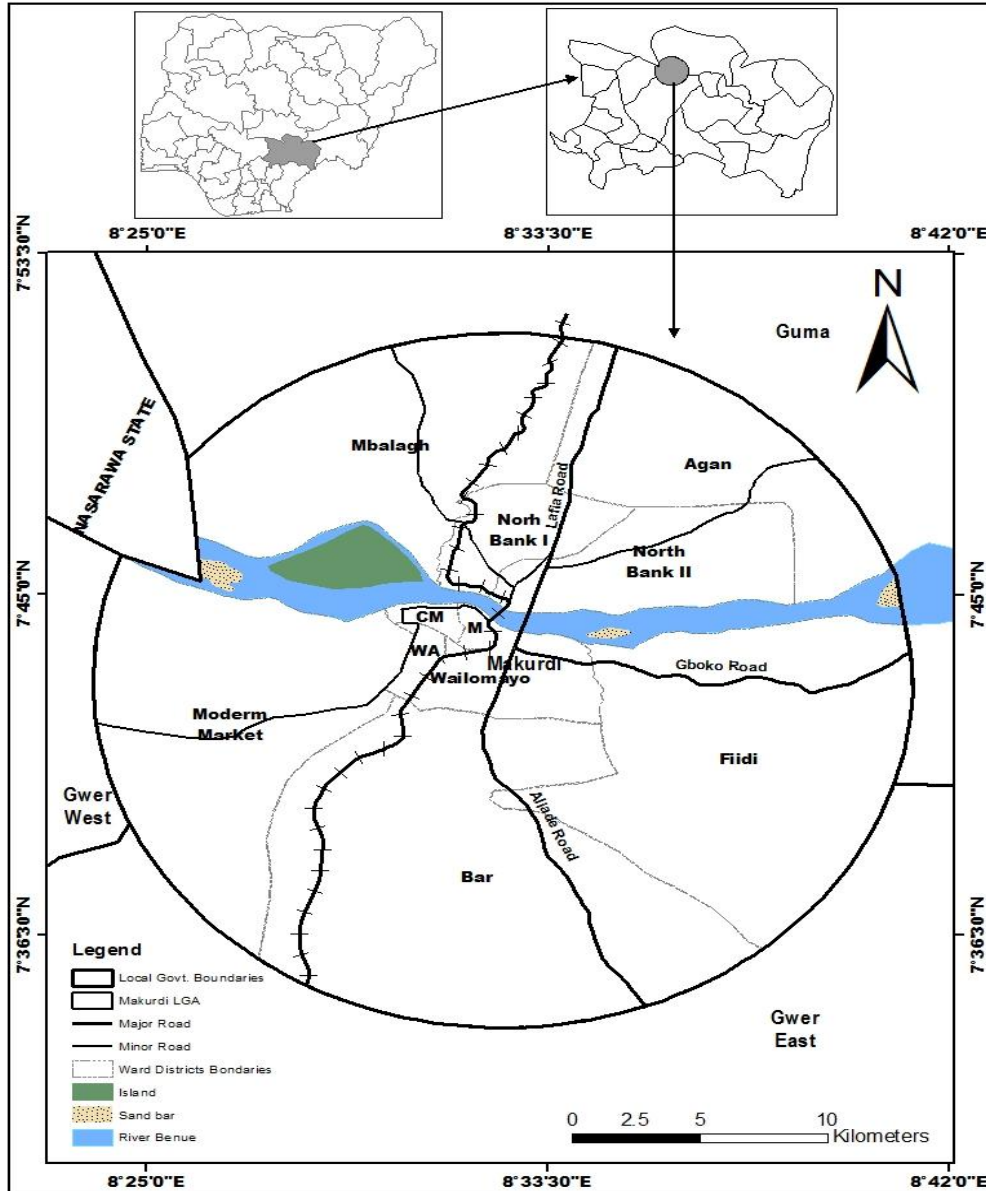


Figure 1: Map of Makurdi Town showing the Airport

Source: Benue State Ministry of Lands and Survey, 2023

The study used passengers and aircraft movement data at Makurdi Airport between 2016-2023 to analyse the traffic trend at the airport. The data was analysed using descriptive statistics and presented in tables, graphs and charts.

RESULT AND DISCUSSIONS

The Traffic Trends at Makurdi Airport

Traffic trend is very vital in revealing the viability of an Airport in terms of aircraft movement and passengers' patronage. This study sought to determine the traffic trends at Makurdi Airport using annual Air traffic data (number of Passenger on arrivals and departures at Makurdi Airport) by the Federal Airports Authority of Nigeria Makurdi Airport from 2016-2023. The data obtained is analyzed and presented in table 1.

Table 1: Annual Passenger Traffic (arrivals and departures) trend at Makurdi Airport

Year	Passenger Arrival	Percentage difference%	Passengers Departure	Percentage difference%
2016	211	3.5	217	3.9
2017	282	4.7	290	5.2
2018	293	4.9	272	4.9
2019	189	3.1	148	2.6
2020	283	4.7	252	4.5
2021	559	9.3	528	9.6
2022	845	14.2	839	15.2
2023	3286	55.2	2942	53.6
Total	5948	100%	5488	100%

Source: FAAN Makurdi Airport, 2023

The information on table 1 indicates that passenger traffic trends at Makurdi Airport have been increasing steadily until 2019 when the whole world was hit by Covid-19 pandemic. In 2019, lockdowns and travel restrictions were imposed in most countries including Nigeria. This led to dramatic decline in traffic passenger both on arrival and departure at the airport, with only 3.1% arrivals and 2.1% departures.

It can be deduced from the analysis that, Passenger traffic at airports is characterised by fluctuations resulting from the influence of several factors. The influence of each factor is different, leading to unpredictable passenger traffic patterns that make planning difficult.

The COVID-19 pandemic has caused the largest drop in global passenger traffic ever observed from 2016 to 2023. Air travel has gradually seen an uptick after the lockdowns with year 2022 and 2023 experiencing the highest traffic within the period under review which clearly shows that the air transport industry is on the path to recovery. For the purpose of the ensuing analysis, year 2019 has provided a baseline in understanding traffic trend before and after covid-19 pandemic. Throughout 2020 to date, there has been a slow but steady recovery in air traffic for Makurdi airports. Passenger traffic arrivals in 2020 (4.7%) has continued to rise 2021 (9.3%), 2022 (14.2), and 2023 (55.2%) respectively.

In terms of passenger traffic departures, the same scenario was observed with steady increase as indicated as follows 2020 (4.5%), 2021 (9.6%), 2022 (15.2), and 2023 (53.6%).

The year with highest traffic trend at Makurdi Airport is 2023 (55.2% for passengers arrivals and 55.6% for passengers departures). This coincidentally falls within the election year when politicians traversed the country canvassing for votes. This may account for the sharp rise in air traffic volume in the study area. the information in table 1 is graphically presented in figure 2

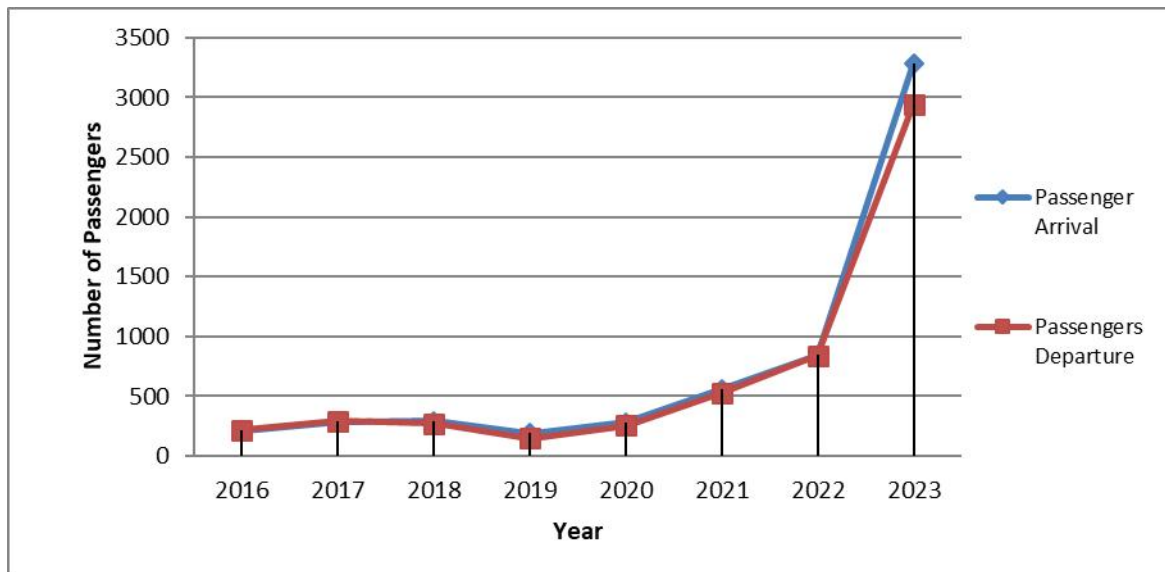


Figure 2: Annual Passenger Traffic (arrivals and departures) trend at Makurdi Airport

Aircraft movement (Arrival and Departure)

This study sought information on number of aircraft arrivals and departures at Makurdi Airport. The data obtained is analysed and presented in table 2

Table 2: Annual Aircraft movement (arrivals and departures) at Makurdi Airport

Year	Passenger Arrival	Percentage difference%	Passengers Departure	Percentage difference%
2016	51	7.3	51	7.3
2017	56	8.0	56	8.1
2018	52	7.5	51	7.3
2019	23	3.3	23	3.3
2020	28	4.0	28	4.0
2021	110	15.8	110	15.8
2022	146	21.0	146	21.0
2023	227	32.7	227	32.7
Total	693	100%	692	100%

Source: FAAN Makurdi Airport, 2023

The information in table 2 reveals that only 23 aircrafts (3.3%) arrived and departed Makurdi Airport in 2019. This marks the lowest aircraft movement ever recorded at Makurdi Airport, and this is due to mobility constraints caused by the COVID-19 epidemic. Air travel has gradually seen an uptick after covid-19 with year 2022 and 2023 experiencing the highest traffic within the period under review which clearly shows that the air transport industry is on the path to recovery. The highest number of aircraft movements was reported in 2023, when 227 (32.7%) aircraft arrived and departed. It can be deduced from the result that the 2023 general elections and rising incidents of insecurity in the country has forced most people to prefer travelling by air than by road, which is why we are getting more planes traveling into Makurdi airport.

CONCLUSION

Air transport is an important enabler to achieving economic growth and development as it facilitates integration into the global economy and provides vital connectivity on a national, regional, and international scale. It helps generate trade, promote tourism, and create employment opportunities. Understanding the traffic trend of any airport is a sure way of assessing its viability. The traffic trend of Makurdi Airport shows that there is an increased demand for air travel and the airport has gradually recovered from the covid-19 pandemic with increasing traffic both for passengers and aircraft movement, hence the need for strategic air traffic management that would ensure seamlessness in operations. It's therefore important to note that due to the rapid increase in numbers of passengers and aircraft movement, Makurdi Airport will continue to play a dominant role in the boosting air transport in the region.

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