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Reimagining Airport Lounges: Enhancing the Passengers Experience in Gate Hold Rooms/Departure Lounges of Nigerian Airports

Oladunmoye, O.M. & Obakin, O.A.
Department of Architecture
University of Ibadan
Ibadan, Nigeria
E-mail; bjarchimat23@gmail.com

ABSTRACT

The Aviation industry plays a crucial role in the global transportation sector facilitating the migration of people both locally and internationally for business, tourism, religion, and other purposes. In this paper, the researchers focused on innovative practices aimed at future improvement of the design quality of Gate hold rooms/departure lounges in Nigerian Airports with respect to aesthetics, functionality, and sustainability. The paper chronicles the general history of air transportation, the aviation industry, and airports, classifying Airports into the land-side (comprising of all land-facilitated activities inspired by the airports), terminal (comprising all physical buildings that facilitate the identification and check-in of passengers, luggage, and shipments), and airside(comprising of all structures that facilitate airplane take-offs, landing, and maintenance/storage example runways and hangars). It goes on to highlight the impact of Airports, stating the research question as an inquiry into innovative design practices that can improve Gate hold-rooms/departure lounges in Nigerian Airports for the improvement of passengers experience. Using a case study and survey, it explores the reality of existing Gate hold rooms/departure lounges in Nigerian Airports appraising their design performance in Architectural terms. The paper concluded with a call for reimagining the subject matter and proposing possible design strategies for future improvement.

Keywords; Airports, Aviation, Holdrooms, Lounges, Transportation

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1. INTRODUCTION/BACKGROUND

1.1. General history of air transportation, aviation industry, and airports

Migration, the movement of people between cities or across borders for business, tourism, pleasure, religious, or scholastic purposes, is an unavoidable aspect of every civilization. This migration is facilitated by the available forms of transportation which include Land transportation, Rail transportation, Air Transport, and Water Transportation. Of these 4 available modes of transportation, Air Transport is considered the safest and most convenient. Airports, according to the Oxford Dictionary, is "a complex of runways and buildings for the take-offs landing, and maintenance of civil aircraft, with facilities for passengers." Airports designs began as small-scale airstrips featuring grassy runways, hangars (for plane maintenance and storage), as well as spectators' stands, and in rare cases, airplane factories. In Europe during World War I, Le Bourget was born from a military airfield that was converted into a commercial airport with a terminal.

Croyden Airport was born in 1920 following the conversion of the Royal Air Force and the National Aircraft Factory, followed by the introduction of a two-story administration building, between 1926 and 1928. 1922 saw the design of the first permanent airport and terminal at Konigsburg, Germany. In 1923, the Tempelhof airport was designed

in Berlin. And in the late 1920s, the "depot" or "lean-to"hangar was introduced in the United States combining a waiting room, offices, and a hangar in a single building. What began as has since evolved into as small airstrips has since evolved into complex structures both facilitating air transportation and supporting commercial activities.

1.2. Classification of Airport Facility

a) Vidyapeetham (2018) has classified Airports into three:
b) The Landside - comprising all land-facilitated activities inspired by the airports
c) The Terminal - comprising all physical building that facilitates the identification and check-in of passengers, luggage, and shipments.
d) The Airside - comprising of of all structures that facilitate airplane take-offs, landing, and maintenance/storage example runways and hangars.

This paper focused on the appraisal of Gate hold rooms/departure lounges (classified under the terminal) in Nigerian Airports with respect to aesthetics, functionality, and sustainability. It used the case study of 5 local airports to analyze the present reality while exploring best practices for future improvements.

1.3. History of Nigerian Airports

Decker (2008), in his "A history of aviation in Nigeria, 1925-2005" chronicles the evolution of Aviation facilities in Nigeria as follows:

1. witnessed growth between 1949 and 1960
2. Increase of revenue from landing fees from 39,000 pounds in 1949 to 222,500 pounds in 1959
3. 1960 - Establishment of aviation school and a dedicated landing field to service the training school
4. 1970 - high demand for aviation services
5. 1971 - the birth of international travel between Lagos and London by the Nigeria Airways inspiring infrastructural development to facilitate both local and international operations.
6. 1975 - 1980 Incorporation of the Aerodrome Development Programme by the Federal Government in the Third National Development Plan period. And the allocation of N800 million towards the development of modern airports.
7. The Aviation sector has since blossomed bringing the total number of Airports in the country operated by the Federal Airports Authority to 16. These include:
8. Murtala Muhammad International Airport
9. with a runway dimension of 2745M X 45M
10. Nnamdi Azikiwe International Airport Abuja with a runway orientation and dimension of 04R / 22L and 3600M X 60M respectively.
11. Port Harcourt International Airport, Rivers State Nigeria with a runway orientation and dimension of 03 / 21 and 3000M X 60M respectively.
12. Mallam Aminu Kano International Airport, Kano State with a runway orientation and dimension of 03 / 21 and 3000M X 60M respectively.
13. The Benin Airport, Edo State with a runway orientation and dimension of 05R / 23L and 2400M X 45M respectively.
14. Ilorin International Airport, Kwara State with a runway orientation and dimension of 05R / 23L and 3100M X 60M respectively.
15. Sultan Abubakar III International Airport, Sokoto with a runway orientation and dimension of 08R / 26L 3000M X 60M respectively.
16. Yola Airport, Adamawa State with a runway orientation and dimension of 17R / 35L and 2999M X 45M respectively.
17. Ibadan Airport, Oyo State with a runway orientation and dimension of 05R / 23L and 2400M X 45M respectively.

18. Kaduna Airport, Kaduna State with a runway orientation and dimension of 05R / 23L and 3000M X 60M respectively.
19. Katsina Airport, Katsina State with a runway orientation and dimension of 05R / 23L and
20. 3045M X 45M respectively.
21. Maiduguri Airport with a runway orientation and dimension of 05R / 23L and 3000M X 60M respectively.
22. Makurdi Airport, Benue State with a runway orientation and dimension of 05R / 23L and 2996M X 50M respectively.
23. Minna Airport, Niger State with a runway orientation and dimension of 05R / 23L and 3400M X 44M respectively.
24. Akure Airport, Ondo State with a runway orientation and dimension of 03R / 21L and 2800M X 45M respectively.
25. Margaret Ekpo International Airport, Calabar Cross River State with a runway orientation and dimension of 03R / 21L and 2450M X 8,038M respectively.
26. Peter, Van den Bergh, Zozuľák, and Bínová (2020) highlighted the primary and secondary Economic impact of Air Transport (Airports) on the economy, other industries, and the environment measured using inferring all direct, indirect, induced, and spillover or catalytical effects created by the aviation sector birthing economic enhancing opportunities estimated to constitute 4.7% of the world's GDP in 2016.

1.4. Study Area

The aim of this research is to examine the state of Holdrooms/departure lounges in Nigerian Airports. Hold rooms/departure lounges are a crucial requirement in airports. They serve as a temporary shelter and constitute a major part of customer satisfaction experienced by passengers, and these passengers constitute a crucial part of stakeholders in the air transport sector (Jelena, Štimac, Vidović, and Boc, 2020). Consequently, the design of Holdrooms/departure lounges is of crucial importance.

1.5. Research question

What innovative design practices can improve Gate hold-rooms/departure lounges in Nigerian Airports?

1.6. Research objectives

The objective of this paper is to appraise the Gate hold-rooms/departure lounges in Nigerian Airports and propose aesthetics, functionality, and sustainability features to improve the user experience.

2. METHODOLOGY

Case studies and surveys were conducted by the researchers.

2.1. Case Studies

2.1.1. Case study 1: Margaret Ekpo International Airport, Calabar.

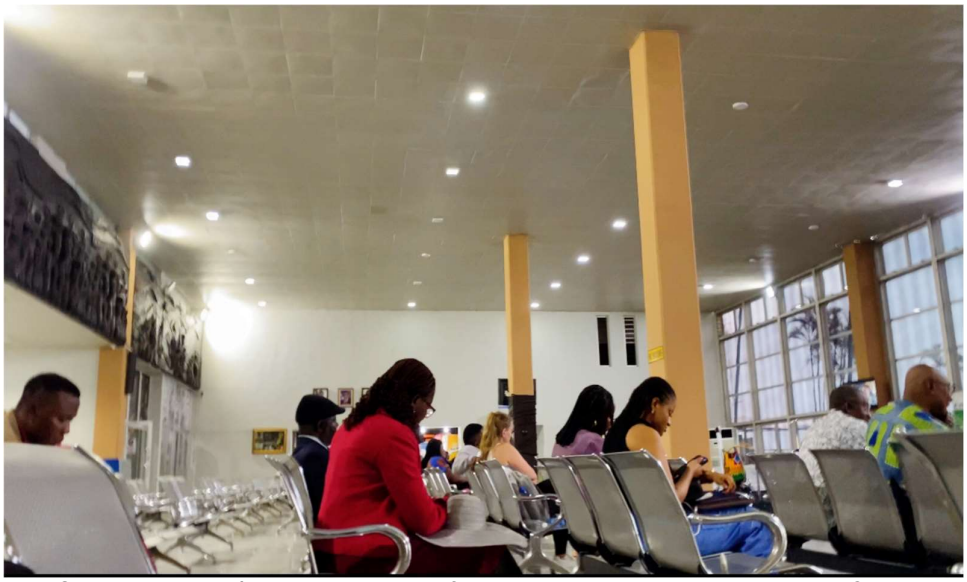

Figure 1: Gate hold-rooms/departure lounge of Margaret Ekpo International Airport Calabar] [JPG].

2.1.2. Case study 2: Murtala Muhammed Airport, Lagos

Figure 2: Gate hold-rooms/departure lounge of Murtala Muhammed Airport Terminal2] [JPG].

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2.1.3. Case study 3: Victor Attah International Airport, Uyo

Figure 3: Gate hold-rooms/departure lounge of Victor Attah International Airport] [JPG].

2.2. Survey:

The research survey was conducted on the state of Gate hold rooms/departure lounges Design in Nigerian Airports.

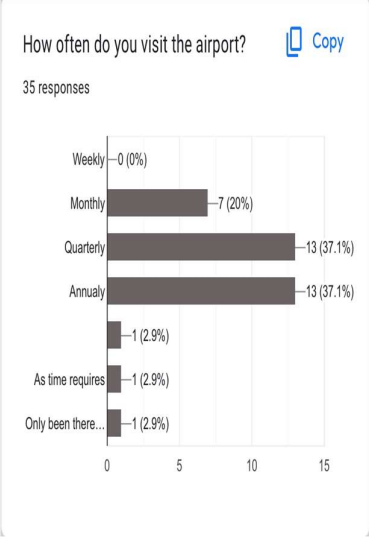

Figure 4: Survey Question 1

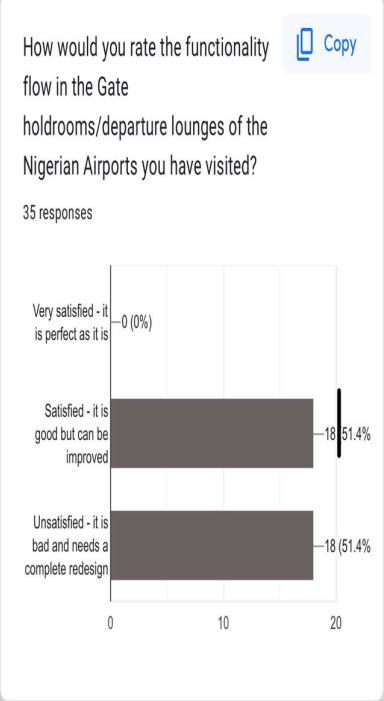

Figure 5: Survey Question 2

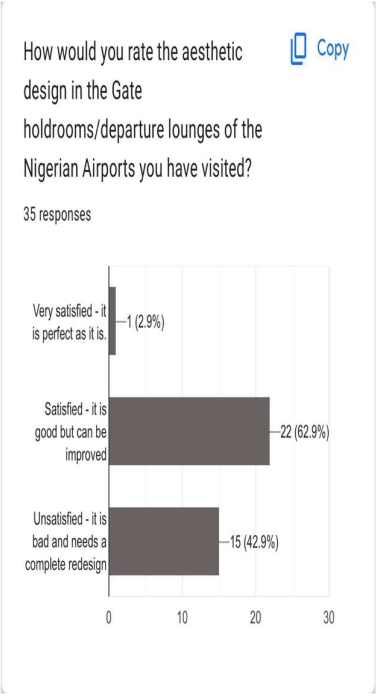

Figure 6: Survey Question 3

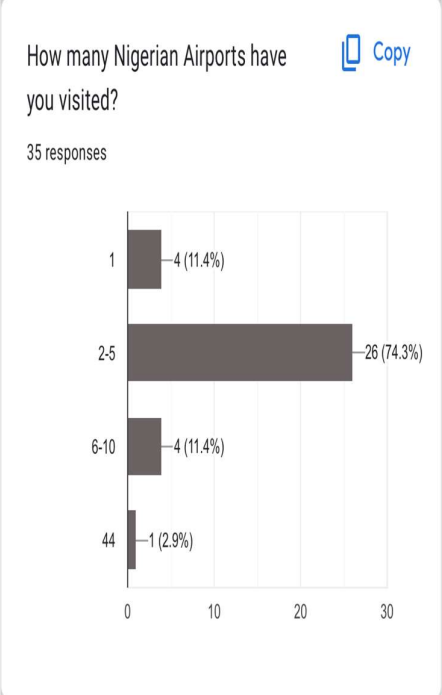

Figure 7: Survey Question 4

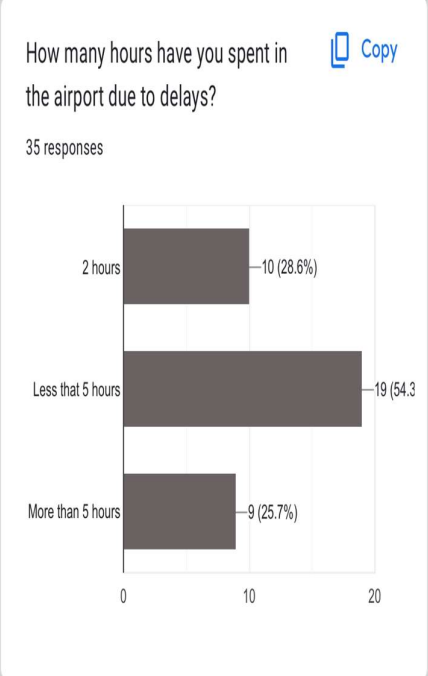

Figure 7: Survey Question 5

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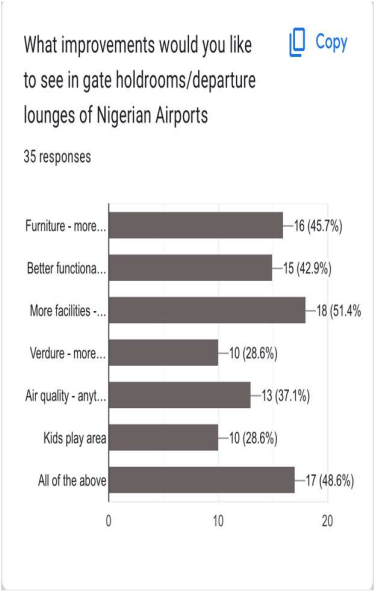

Figure 7: Survey Question 6

2.3. Observation and appraisal of case studies and survey

- **Capacity constraints**: Congestion, overcrowding, and insufficient seating during peak periods and flight delays.
- **Sustainability**: High dependency on electric power for thermal comfort and lighting. As well as the absence of green building elements.
- **Functionality**: Rigid arrangement of seats that hampers networking and mobility for disabled and elderly persons. Technology:
- **Electrical Facilities for mobile Phones:** Insufficient charging ports.
- **Amenities**: Absence of passenger support amenities like play area, and changing rooms for nursing mothers to improve customers' comfort.

3.. RECOMMENDATION

3.1.Reimagining Gate hold rooms/departure lounges Design in Nigerian Airports

With respect to demand forecasts estimate and future passenger activity, it is proposed that the incorporation of innovative and sustainable design elements to enhance the user experience at airport Holdrooms/departure lounges, be adopted in a manner that provides optimum comfort for passengers needs. Hunt (2020) identified architectural design as a major element enhancing airport users' experience Fosters a Sense of Arrival, relaxation, and comfort listing the aesthetic use of "lighting, greenery, and local culture", as well as an infusion of ambiance and scents as these design elements.

3.2. Analysis of how various design components impact hold rooms/departure lounges Design in Nigerian Airports

- **Aesthetics**: The use of colour, form, texture, line, and other interior design elements to improve visual appeal and enhance passengers' comfort.
- **Durability**: the use of high-quality building materials that will withstand the high traffic of departure lounges.

- **Edu-tainment**: This connotes the incorporation of educative and entertainment facilities (such as Virtual Reality hubs) to creatively educate users of local culture in travel destinations, airport services, flight schedules, local culture, and tourism attractions.
- **Sustainability**: Air Misting systems, Biosweles, Greenery.
- **Variety**: Gaming Arcades, Libraries, and Themed Selfie boots to improve airport hold rooms and departure lounges engagements. Also, the use of dedicated lounge hashtags, selfie spots, or interactive displays that allow passengers to post directly from the lounge. This not only boosts engagement but also promotes the lounge to other potential members.
- **Technology**: The incorporation of smart furniture which feature charging dock stations and kiosks, multi-device lockers, or weireless charging powered by sustainable energy to promote efficiency.
- **Inclusivity**: the spatial arrangement of furniture to support indipendent circulation for nursing parents, elderly, and disabled passengers.
- **Funding and Maintenance**: Shared cost of redesign and maintenance of hold rooms/departure lounges between the Nigerian Airports Authority, the airline operators, and vendors.
- **Costs**: The cost of hold room/departure lounges can be reduced by collaborative share.

3.3. Justification: effectiveness & potential of improved design in Gate hold rooms/departure lounges Design of Nigerian Airports

1. Improves air quality and thermal comfort within departure lounges.
2. Variety options constitutes an additional source of revenue for airport management.
3. Sustainable features reduce the Airport's dependency on conventional power.
4. Promotes airport facilities and services.
5. The incorporation of cultural and historic art pieces and monuments promotes local culture and heritage.

4. CONCLUSION

Airports make massive contributions to the global economy, and the design of airports impact the user experience of its passengers. The researcher recommended sustainable design solutions that improve the quality of airport hold rooms and departure lounges, especially during daily fluctuations or long hours of flight delays due to unforeseen circumstances. This research therefore recommends an upgrade of airport hold rooms and departure lounges with the foowin major areas of concentration: Aesthetics, Furniture Durability, Edu-tainment facilities, Sustainable features, Variety, Technology, Inclusivity, Funding, maintenance and other key design considerations to influence their re-imagination,

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