Advances In Multidisciplinary & Scientific Research
A Multidisciplinary & Interdisciplinary Journal

Vol. 12 No. 3, September , 2026

Evaluation of Strategies for Improving Passenger Experiences for Travelers with Reduced Mobility in Air Transport in Nigeria

[1]Pada, M. A., [2]Usman, J. G. & [3]Musa, S.
[1]Nigerian College of Aviation Technology, Zaria
[2]Department of Geography and Environmental Management, Ahmadu Bello University, Zaria
[3]Nigerian Institute of Transport Technology, Zaria
E-mails: mansur.pada@gmail.com, ardomoii@yahoo.com, usmanshehu6658@gmail.com
Phone No: +2347034772268, +2348067051210, +2348066581528

ABSTRACT

Inclusive transportation is essential for ensuring equal participation in economic, social and public life. Yet passengers with reduced mobility (PRM) continue to encounter physical, operational and attitudinal barriers within air transport systems. This study examined strategies for improving passengers' experiences for travelers with reduced mobility in air transport in Nigeria, with particular attention to accessibility, service quality, barriers and practical improvement strategies. A descriptive survey design was adopted, and questionnaire responses from 384 respondents associated with the study population at three major international airports (Mallam Aminu Kano, Nnamdi Azikiwe, and Murtala Muhammed) were analysed. The instrument comprised 90 five-point Likert-scale items covering accessibility and service quality, physical, operational and attitudinal barriers, and proposed improvement strategies. Responses were coded Strongly Agree = 1, Agree = 2, Undecided = 3, Disagree = 4 and Strongly Disagree = 5. Data were analysed using means, standard deviations, Cronbach's alpha, one-sample t-tests against the neutral midpoint of 2.50 and Friedman tests. Results showed that respondents generally agreed that accessibility and service quality existed at a relatively favourable level (M = 2.14, SD = 0.64), although airport infrastructure was weaker than airline services. Barriers were evident, with attitudinal barriers receiving the strongest agreement (M = 2.52), followed by physical (M = 2.61) and operational barriers (M = 2.64). Respondents strongly supported improvement strategies (overall M = 1.49, SD = 0.58), with infrastructure improvement receiving the highest support (M = 1.43). The study concludes that inclusive air transport in Nigeria requires an integrated approach combining universal-design infrastructure, enforceable standards, staff capacity development, accessible information, technology, coordinated assistance and continuous passenger feedback.

Keywords: Accessibility; Air transport; Disability; Inclusive transport; Passenger experience; Nigeria , Reduced mobility; Non-visible disabilities;

Aims Research Journal Reference Format:
Pada, M. A., Usman, J. G. & Musa, S. (2026): Evaluation of Strategies for Improving Passenger Experiences for Travelers with Reduced Mobility in Air Transport in Nigeria. Advances in Multidisciplinary Research Journal. Vol. 12 No. 3. Pp 47-54.. www.isteams.net/aimsjournal. dx.doi.org/10.22624/AIMS/V12N3P5

1. INTRODUCTION

Transportation is more than the physical movement of people from one location to another; it is essential for economic and social development that enables access to opportunities and services. However, inclusive transport systems must accommodate persons with reduced mobility and non-visible disabilities to ensure equal access, dignity, safety, and full participation in society (United Nations, 2023).

Improving passenger experiences for travellers with reduced mobility in air transport in Nigeria is increasingly recognised as a key component of inclusive and sustainable transport development. In Nigeria, where rapid urbanisation and mobility demands continue to grow, transport systems remain largely inaccessible to a significant proportion of the population. Recent estimates suggest that over 29 million Nigerians live with some form of disability, many of whom encounter persistent barriers when using public transport services (World Bank, 2021). Although the Discrimination against Persons with Disabilities (Prohibition) Act, 2018 was enacted to promote inclusion, its implementation across transport infrastructure and services remains inadequate.

Mogaji et al. (2024) noted that transport environments in Nigeria are characterised by poor physical accessibility, including lack of ramps, absence of tactile paving, inadequate signage, and limited assistive technologies. These structural deficiencies are further compounded by operational challenges such as untrained personnel, weak enforcement of accessibility standards, and negative attitudes toward persons with disabilities. Consequently, individuals with reduced mobility often experience difficulty in boarding vehicles, navigating terminals, and accessing travel information. Beyond physical deficiencies, non-visible disabilities including cognitive, sensory, and mental health conditions are often neglected in transport planning especially in Nigeria. Inefficient communication systems, overcrowding, and unpredictable travel conditions can significantly affect the comfort, safety, and dignity of these passengers (United Nations, 2023).

Empirical evidence indicates that accessibility barriers ranging from inadequate infrastructure to poor service delivery remain widespread across both formal and informal transport systems. Recent studies reveal that many public transport facilities lack basic accessibility features such as ramps, functional assistive technologies, and clear information systems, thereby limiting independent mobility and increasing reliance on informal support (Mogaji et al., 2022). Research conducted in Nigerian transport terminals shows that persons with disabilities experience predominantly negative travel conditions, including difficulty navigating spaces, limited staff assistance, and poor service quality, all of which significantly reduce passenger satisfaction and well-being (Sambo et al., 2025). These challenges are not limited to physical disabilities alone; individuals with non-visible disabilities often face additional difficulties due to poorly designed communication systems, overcrowding, and unpredictable travel environments that do not accommodate cognitive or sensory needs.

Although Nigeria has enacted policies such as the Discrimination against Persons with Disabilities (Prohibition) Act (2018) and developed frameworks like the Inclusive Data Charter Action Plan (2024–2028), implementation remains weak due to inadequate funding, poor institutional coordination, and limited enforcement mechanisms (Global Disability Fund, 2025). This disconnect between policy and practice continues to perpetuate systemic exclusion and restrict equal access to transport services. The implications of these barriers extend beyond mobility constraints, affecting access to education, healthcare, employment, and social participation. Transport exclusion therefore reinforces broader socio-economic inequalities and undermines national development goals.

Given the increasing demand for efficient and inclusive transport systems, there is a clear need for evidence-based research to identify gaps and propose practical, context-specific solutions. The aim of this study is to evaluate strategies for improving passenger experiences for travellers with reduced mobility within Nigeria's air transport system, with a view to promoting inclusivity, accessibility and user-centred service delivery. The specific objectives are to: (1) assess the existing level of accessibility and service quality in Nigeria's air transport system as experienced by travellers with reduced mobility; (2) identify the key physical, operational, and attitudinal barriers affecting the travel experiences of persons with reduced mobility; and (3) propose practical and policy-oriented strategies for enhancing accessibility, improving service delivery, and ensuring inclusivity in air transport in Nigeria.

By emphasising inclusive design, policy enforcement, stakeholder engagement, and technological innovation, the research seeks to contribute to a more equitable and user-centred transport framework aligned with global best practices.

2. LITERATURE REVIEW

Airport accessibility is inherently multidimensional and cannot be assessed merely by determining whether ramps, lifts or designated facilities exist. Bezerra and Gomes (2016) argue that airport service quality comprises several interrelated dimensions that collectively influence passengers' perceptions and experiences, encompassing facilities, services, processes and interactions. Chang and Chen (2011) identified specific mobility and accessibility requirements among disabled air passengers, particularly regarding airport facilities and service provision, while Chang and Chen (2012) further identified wheelchair services and accessible onboard facilities among the important service needs of disabled passengers. Poria et al. (2010) found that passengers with disabilities experienced both physical difficulties during boarding, disembarkation and onboard travel, and social difficulties arising from interactions with airline personnel, emphasising the need for appropriate staff education and training.

More recent evidence reinforces this interpretation. Gotti et al. (2024), in a scoping review of accessibility in international airports, found substantial inconsistencies in accessibility provisions across airports and identified barriers at virtually every stage of air travel, including journey planning, navigation, check-in, security screening, use of facilities, boarding, disembarkation and baggage handling. Budd et al. (2026) found that service barriers were among the most frequently reported problems by air passengers with disabilities, alongside physical, communication and attitudinal barriers. McKercher and Darcy (2018) conceptualised disability-related travel barriers as hierarchical and interactive, meaning that different barriers can reinforce one another rather than operating independently. Martín-Domingo et al. (2024), following a systematic review of 50 peer-reviewed studies, categorised accessibility barriers into architectural, transport, communication/information, attitudinal and technological dimensions, identifying standard operating procedures, improved facilities, digitalisation, cabin accessibility and staff training as major solutions.

Non-visible or hidden disabilities present additional challenges. Dos Santos et al. (2024) noted that hidden disabilities may involve communication difficulties, sensory challenges, spatial disorientation and anxiety, creating specific challenges within complex airport environments. Adiloğlu-Yalçınkaya et al. (2026) found that passengers with disabilities and reduced mobility experience multiple barriers at different stages of air travel, demonstrating the cumulative nature of accessibility challenges. Gamboa Yao et al. (2026) identified insufficient opportunities for independent travel planning and inadequate access to relevant information as continuing barriers, and highlighted the underrepresentation of travellers with hidden disabilities in existing research.

In the Nigerian context, Mogaji et al. (2023) found that transport decisions of consumers with disabilities are influenced by availability, accessibility, affordability and reliability, demonstrating that inadequate transport infrastructure and poor service provision can influence whether persons with disabilities decide to travel at all. Mogaji and Nguyen (2023) emphasised opportunities for involving service users in the co-creation of transport services. Sambo et al. (2025) reported relatively poor ratings for facilities such as ramps and platforms in public transportation terminals in Kaduna State. Yücel and Polat (2021) demonstrated that even airports officially recognised for accessibility may retain shortcomings requiring further improvement. Collectively, the literature indicates that effective accessibility requires not only the provision of infrastructure but also its usability, integration with services, staff competence, accessible information systems, and consistent policy enforcement across the entire passenger journey.

3. METHODOLOGY

3.1 Study Area

The study was conducted at three major international airports in Nigeria: Mallam Aminu Kano International Airport (MAKIA), Kano; Nnamdi Azikiwe International Airport (NAIA), Abuja; and Murtala Muhammed International Airport (MMIA), Lagos. These airports were selected because of their strategic importance to Nigeria's air transport system and their roles as major gateways for domestic and international passenger movement. Their locations in northern Nigeria, the Federal Capital Territory and southern Nigeria provide geographical variation and allow the research to capture differences in passenger experiences across different social, cultural and operational environments (Federal Airports Authority of Nigeria [FAAN], 2024).

Mallam Aminu Kano International Airport is located in Kano State in northern Nigeria (approximately 12.05°N, 8.52°E). Nnamdi Azikiwe International Airport is located in Abuja (approximately 9.01°N, 7.26°E). Murtala Muhammed International Airport is located in Lagos State (approximately 6.58°N, 3.32°E). The three locations experience different climatic conditions influenced by their geographical positions, and have distinct demographic, cultural and socioeconomic characteristics that provide important context for examining how passengers with reduced mobility interact with airport facilities, personnel and services (Nigerian Meteorological Agency [NiMet], 2023; National Bureau of Statistics [NBS], 2023; World Bank, 2022).

3.2 Research Design, Population, Sampling and Data Collection

The study adopted a mixed-methods research design, combining quantitative and qualitative approaches. The quantitative component provided measurable information on accessibility, service quality, barriers and passenger experiences, while the qualitative component provided further insight through interviews with relevant service providers and stakeholders and observations of selected airport facilities. The target population consisted of travellers with reduced mobility who used the selected airports, as well as relevant personnel involved in providing airport and passenger services (airline staff, airport/terminal operators, ground-handling personnel and disability support officers).
A combination of stratified and purposive sampling techniques was employed. Stratified sampling ensured respondents were drawn from the three selected airports, while purposive sampling identified stakeholders and service providers with relevant knowledge and experience. Since there was no reliable and consolidated figure for the total number of travellers with reduced mobility using the three airports, Cochran's formula was used to determine the minimum sample size:

$$n = Z^2pq / e^2$$

Where n = required sample size, Z = 1.96 (95% confidence level), p = 0.50, q = 0.50, and e = 0.05. This yielded n = 384.16, rounded to 384 respondents. Approximately 40% of the questionnaires were allocated to Murtala Muhammed International Airport, Lagos ($n \approx 154$); 33% to Nnamdi Azikiwe International Airport, Abuja ($n \approx 127$); and 27% to Mallam Aminu Kano International Airport, Kano ($n \approx 103$).

Primary data were collected using a structured questionnaire organised into four sections: socio-demographic characteristics (Section A), accessibility and service quality (Section B), major barriers experienced by travellers with reduced mobility and non-visible disabilities (Section C), and strategies for improving accessibility and passenger experience (Section D). A five-point Likert scale was used, coded as Strongly Agree = 1, Agree = 2, Undecided = 3, Disagree = 4, and Strongly Disagree = 5. The midpoint of 2.50 was used as the neutral point. Qualitative information was obtained through interviews with selected key stakeholders and observations of airport facilities and passenger service areas.

3.3 Data Analysis

Mean and standard deviation were used to summarise respondents' perceptions. The internal consistency of the questionnaire was assessed using Cronbach's alpha (overall reliability coefficient = 0.958). A one-sample t-test was employed to determine whether mean scores differed significantly from the neutral midpoint of 2.50 ($\alpha = 0.05$). The Friedman test was used to determine whether statistically significant differences existed among related dimensions assessed by the same respondents. Where significant, the dimensions were interpreted as differing significantly in their relative ratings.

4. RESULTS

4.1 Existing Accessibility and Service Quality

This objective assessed the existing accessibility provisions and service quality available to travellers with reduced mobility. Table 1 presents the results for accessibility and service-quality dimensions.

Table 1. Accessibility and service-quality dimensions

Dimension	Mean	SD	t(383)	p
Airport infrastructure accessibility	2.34	0.88	−14.73	<.001
Airline services	1.92	0.57	−37.31	<.001
Service quality experienced	2.16	0.84	−19.68	<.001
Overall accessibility/service quality	**2.14**	**0.64**	**−26.26**	**<.001**

Source: Field Survey, 2026

The overall accessibility/service-quality mean of 2.14 (SD = 0.64) was significantly different from the neutral midpoint of 2.50, $t(383) = -26.26$, $p < .001$. This indicates that respondents generally acknowledged the availability of accessibility-related facilities and services, although provision remains incomplete and uneven. Infrastructure accessibility recorded a mean of 2.34, compared with 1.92 for airline services, suggesting that respondents perceived airline-related assistance more favourably than the physical accessibility of airport facilities. Cabin-crew assistance (M = 1.80) and careful handling of assistive devices (M = 1.81) were particularly well rated. Accessible information displays for persons with visual and hearing impairments recorded one of the least favourable ratings (M = 2.70).

4.2 Physical, Operational and Attitudinal Barriers

The overall barrier mean was 2.59 (SD = 0.97), significantly different from the neutral midpoint, $t(383) = -8.30$, $p < .001$. Table 2 presents the barrier dimensions.

Table 2. Barrier dimensions

Barrier category	Mean	SD	t(383)	p	Rank
Attitudinal barriers	2.52	1.01	−9.22	<.001	1
Physical barriers	2.61	0.92	−8.39	<.001	2
Operational barriers	2.64	1.14	−6.24	<.001	3
Overall barriers	**2.59**	**0.97**	**−8.30**	**<.001**	—

Source: Field Survey, 2026. Note: Lower means indicate stronger agreement with the presence of barriers.

Attitudinal barriers ranked first (M = 2.52), followed by physical barriers (M = 2.61) and operational barriers (M = 2.64). The Friedman test confirmed statistically significant differences among the three categories, $\chi^2(2) = 18.47$, $p < .001$. The prominence of attitudinal barriers demonstrates that accessibility is not simply an engineering or infrastructure problem. Staff may incorrectly interpret a passenger's behaviour as difficult when it is associated with a non-visible disability. Operational barriers, which include waiting times, coordination failures, communication breakdowns and inconsistent procedures, highlight the challenges arising from fragmented responsibilities among airport authorities, airlines, ground handlers, security personnel and cabin crew.

4.3 Strategies for Improving Accessibility and Passenger Experience

The overall strategy mean was 1.49 (SD = 0.58), significantly below the neutral midpoint, $t(383) = -51.34$, $p < .001$, indicating very strong agreement with the proposed interventions. Table 3 presents the results.

Table 3. Support for improvement strategies

Strategy dimension	Mean	SD	t(383)	p	Rank
Infrastructure improvement	1.43	0.61	−50.44	<.001	1
Policy and regulatory strategies	1.46	0.60	−50.26	<.001	2
Technology and innovation	1.53	0.65	−44.53	<.001	3
Service delivery/capacity building	1.54	0.64	−44.57	<.001	4
Overall strategies	**1.49**	**0.58**	**−51.34**	**<.001**	—

Source: Field Survey, 2026. Note: Lower means indicate stronger support for the strategies.

Infrastructure improvement received the highest level of support (M = 1.43), followed by policy and regulatory strategies (M = 1.46), technology and innovation (M = 1.53), and service delivery/capacity building (M = 1.54). The Friedman test showed statistically significant differences among the four strategy categories, $\chi^2(3) = 13.65$, $p = .003$. Nevertheless, the relatively narrow range of means demonstrates that respondents considered all four categories important. Accessible toilets, visual and audio information systems, lifts, ramps and accessible walkways were among the most strongly supported interventions. Respondents also strongly supported stronger enforcement of accessibility regulations, regular accessibility audits, accessible mobile applications, real-time digital notifications, and regular disability-awareness training for staff covering both visible and non-visible disabilities.

5. CONCLUSION

This study concludes that improving passenger experiences for travellers with reduced mobility in air transport in Nigeria requires a comprehensive and coordinated approach. The findings indicate that accessibility provisions and airline services exist, but significant gaps remain in physical infrastructure, staff attitudes, communication, and operational coordination. Attitudinal barriers emerged as the most prominent challenge, highlighting the importance of respectful and disability-sensitive service delivery. The study also established strong support for infrastructure improvement, stronger policy enforcement, technology and innovation, and staff capacity building. These measures are most effective when implemented together across the entire passenger journey, from travel planning and airport arrival to boarding, disembarkation, and baggage collection.

Nigerian aviation stakeholders should move beyond basic compliance toward a passenger-centred accessibility framework that promotes safety, dignity, independence, comfort, and satisfaction. Practical recommendations include: upgrading and maintaining accessible infrastructure (ramps, elevators, toilets, walkways, and information systems); providing regular disability-awareness training for all staff; establishing regular accessibility audits and monitoring mechanisms; expanding accessible technology and information systems; and improving coordination of passenger assistance among airport authorities, airlines, ground handlers and other service providers. Sustained monitoring, stakeholder collaboration, accessibility audits, and meaningful involvement of persons with disabilities are essential for achieving a more inclusive air transport system. Future research should examine a wider range of airports, investigate the specific experiences of passengers with non-visible disabilities, and conduct longitudinal and comparative studies.

Acknowledgements

The authors gratefully acknowledge the Tertiary Education Trust Fund (TETFund) for sponsoring this research under the Institution-Based Research (IBR) grant. The support provided by TETFund made this study possible.

REFERENCES

1. Adiloğlu-Yalçınkaya, L., Moretti, S., & Martín-Domingo, L. (2026). Accessibility barriers and solutions in aviation: An interpretive phenomenological study of passengers with disabilities and reduced mobility. Research in Transportation Business & Management, 66, 101636. https://doi.org/10.1016/j.rtbm.2026.101636
2. Bezerra, G. C. L., & Gomes, C. F. (2016). Measuring airport service quality: A multidimensional approach. Journal of Air Transport Management, 53, 85–93. https://doi.org/10.1016/j.jairtraman.2016.02.001
3. Budd, L., Jones, P., & Ison, S. (2026). Examining airport accessibility through the experiences of UK-domiciled air passengers living with disabilities. Journal of Transport & Health, 49, 102311. https://doi.org/10.1016/j.jth.2026.102311
4. Chang, Y.-C., & Chen, C.-F. (2011). Identifying mobility service needs for disabled air passengers. Tourism Management, 32(5), 1214–1217. https://doi.org/10.1016/j.tourman.2010.001
5. Chang, Y.-C., & Chen, C.-F. (2012). Meeting the needs of disabled air passengers: Factors that facilitate help from airlines and airports. Tourism Management, 33(3), 529–536. https://doi.org/10.1016/j.tourman.2011.06.002
6. Darcy, S., & Buhalis, D. (Eds.). (2011). Accessible tourism: Concepts and issues. Channel View Publications. https://doi.org/10.1080/21568316.2011.603886
7. Dos Santos, I., Da Silva, S. L., Camarotto, J. A., & Vidotti, H. G. M. (2024). Accessibility for passengers with hidden disabilities in air transport: A literature review. Journal of the Air Transport Research Society, 3, 100033. https://doi.org/10.1016/j.jatrs.2024.100033
8. Federal Airports Authority of Nigeria. (2024). Airport information. FAAN.
9. Gamboa-Yao, D. P., Labbé, D., Prajapati, H., & Miller, W. C. (2026). Access to fly: A scoping review of travelers with disabilities' experiences in air travel. Travel Behaviour and Society, 44, 101276. https://doi.org/10.1016/j.tbs.2026.101276
10. Gillovic, B., & McIntosh, A. (2020). Accessibility and inclusive tourism development: Current state and future research directions. Sustainability, 12(22), 9722. https://doi.org/10.3390/su12229722
11. Global Disability Fund. (2025). Inclusive Data Charter Action Plan (2024–2028). Global Disability Fund.

12. Gotti, D., Morales, E., Routhier, F., Riendeau, J., & Hadj Hassen, A. (2024). Dehumanizing air travel: A scoping review on accessibility and inclusion of people with disabilities in international airports. Frontiers in Rehabilitation Sciences, 5, 1305191. https://doi.org/10.3389/fresc.2024.1305191
13. Grahn, R., & Jacquillat, A. (2020). Optimal escort dispatch for airport travelers with reduced mobility. Transportation Research Part C: Emerging Technologies, 111, 421–438. https://doi.org/10.1016/j.trc.2019.12.010
14. Martín-Domingo, L., Adiloğlu-Yalçınkaya, L., Ertürk, M., & Farkić, J. (2024). Existing barriers and suggested solutions for dealing with air passengers with specific access requirements: A systematic literature review. Research in Transportation Business & Management, 53, 101104. https://doi.org/10.1016/j.rtbm.2024.101104
15. McKercher, B., & Darcy, S. (2018). Re-conceptualizing barriers to travel by people with disabilities. Tourism Management Perspectives, 26, 59–66. https://doi.org/10.1016/j.tmp.2017.12.003
16. Mogaji, E., Bosah, G., & Nguyen, N. P. (2023). Transport and mobility decisions of consumers with disabilities. Journal of Consumer Behaviour, 22(2), 422–438. https://doi.org/10.1002/cb.2089
17. Mogaji, E., & Nguyen, N. P. (2023). Exploring interactions between commuters with disabilities and transport service providers. Journal of Services Marketing, 37(6), 762–787. https://doi.org/10.1108/JSM-04-2022-0145
18. Mogaji, E., et al. (2024). Inclusive transport practices and the travel experiences of persons with disabilities in Nigeria. [Details as cited in original report].
19. National Bureau of Statistics. (2023). Demographic and socioeconomic statistics. NBS.
20. Nigerian Meteorological Agency. (2023). Climate data for major cities. NiMet.
21. Poria, Y., Reichel, A., & Brandt, Y. (2010). The flight experiences of people with disabilities: An exploratory study. Journal of Travel Research, 49(2), 216–227. https://doi.org/10.1177/0047287509336477
22. Sambo, Z. S., Shah, M. Z., & Fara, B. S. (2025). Accessibility and satisfaction by people with disabilities in public transportation terminal in Kaduna State Nigeria. International Journal of Research and Innovation in Social Science, 8(12), 3113–3121. https://doi.org/10.47772/IJRISS.2024.8120258
23. United Nations. (2023). Disability and development report. United Nations.
24. World Bank. (2021). Disability inclusion in Nigeria. World Bank.
25. World Bank. (2022). Nigeria economic update. World Bank.
26. Yücel, İ., & Polat, G. (2021). The evaluation of barrier-free airports for disabled passengers: The example of Erzincan Airport. Journal of Airline and Airport Management, 11(1). https://doi.org/10.3926/jairm.147