

Sokoto Journal of Geographical Studies (SJGS)



Volume 3, Issue 1, December, 2025 Edition



Sokoto Journal of Geographical Studies (SJGS)

Volume 3, Issue 1, December, 2025 Edition

*Published by the Department of Geography, Sokoto State
University, Sokoto P.M.B. 2134, Along Birnin Kebbi
Road, Sokoto State-Nigeria*



**Department of Geography, Sokoto State University, Sokoto
P.M.B. 2134, Along Birnin Kebbi Road, Sokoto State-Nigeria**

Copyright© Department of Geography, Sokoto State University, Sokoto
(December, 2025 Edition, Issue 1, Number 2)

E-ISSN: 3115-5812, PRINT ISSN: 3034-551X

All rights reserved. No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system or translated into any form or by any means, electronically, manually or otherwise without the prior written consent of Sokoto Journal of Geographical Studies.



ABOUT THE JOURNAL

Sokoto Journal of Geographical Studies (SJGS) is a double-blind peer reviewed journal that is being published in **June** and **December** annually, by the Department of Geography Sokoto State University, Sokoto-Nigeria. The Journal provides a platform for researchers and academicians around the world in order to promote healthy intellectual discourse concerning research, preservation and dissemination of academic knowledge. The journal adopts a multidisciplinary approach to scholarship in all areas of Geographical Studies.

Prof. I. M. Dankani

Editor-in-Chief

AUTHOR'S GUIDELINES

Manuscript should be typed, doubled line spacing, 12 fonts size Time New Romans, not more than 3000-5000 words pages including references and appendixes. The text should be organized into an introductory section, conveying the background and purpose of the paper, and then into sections identified with subheadings. References should be in APA style of references 6 edition. An abstract should not be more than 250 words. All pages should be numbered at the bottom centre of the page beginning with the title page. The abstract should not contain abbreviations or references. Keywords should be provided below the abstract in alphabetical order for indexing.

Title page should be placed on a cover sheet (less than 40 characters) and it should contain, title of the paper, the full name(s) of the author(s) and the addresses of the institution(s) at which the work was carried out along with full postal and email addresses, and phone numbers to whom correspondences about the manuscript should be sent

However, manuscripts that do not meet the criteria outlined in these instructions will be returned back to the Author without review. Similarly, views expressed in the articles are those of authors, not publishers.

The following are the instructions needs to be respected

- i. The entire article (including figures and tables) should be supplied as a single document file
- ii. Authors should supply their accepted paper as formatted text
- iii. Manuscripts are to be prepared and submitted in word document (.doc) or rich text format, only on manuscript.

Authors can only submit their manuscripts electronically in MS word format through the Journal Email: sjgs@ssu.edu.ng Papers are submitted on the understanding that they have not been published elsewhere (except in the form of an abstract, as part of a published lecture, reviewed, or thesis) will not be submitted anywhere else and are not currently under consideration by another journal or any other publications.

Acknowledgements

The sources of financial grants and other funding must be acknowledged, including a frank declaration of the authors, commercial links and affiliations. The contributions should also be acknowledged.

Assessment Fee (Non-Refundable) & Publication Fee

Account Name: Sokoto Journal of Geographical Studies

Account Number: **1312472903**

Bank: **Zenith Bank**



All correspondence shall be addressed to:

Secretary Editorial Board,
Sokoto Journal of Geographical Studies
Department of Geography
Faculty of Social and Management Sciences
Sokoto State University, Sokoto
P.M.B 2134, Along Birnin Kebbi Road, Sokoto State-Nigeria

Tel: 080-6950-1786 (Secretary Editorial Board)

Email: sjgs@ssu.edu.ng

Website: <https://sjgs.org.ng>

EDITORIAL BOARD

S/N	Name	University	Position
1.	Prof. I. M. Dankani	UDUS	Editor-in-Chief
2.	Prof. A. T. Umar	UDUS	Assist Chief Editor 1
3.	Prof. N. B. Eniolorunda	UDUS	Assist Chief Editor 2
4.	Dr. Mustapha Sani	SSU	Managing Editor/Secretary
5.	Dr. Rufai Abubakar	SSU	Treasurer
6.	Prof. M. A. Iliya	UDUS	Member
7.	Prof. D. D. Ajayi	UNI Ibadan	Member
8.	Prof. S. O. Efabiyi	UNI Ilorin	Member
9.	Prof. Joseph A. Yaro	UNI Ghana	Member
10.	Prof. A. G. Fada	UDUS	Member
11.	Prof. Y. M. Adamu	BUK	Member
12.	Dr. Murtala M. Uba	BUK	Member
13.	Dr. Ibrahim Ishaq	FUBK	Member
14.	Dr. Muhammad Ismail	ABU Zaria	Member
15.	Dr. A. A. Bichi	FUG	Member
16.	Mal. Hayatu Dangaladima	SSU	Member
17.	Mal. Lauwali Barau	SSU	Member

EDITORIAL ADVISERS

S/N	Name	University
1.	Prof. Maharazu A. Yusuf	BUK
2.	Prof. I. A. Adamu	UDUS
3.	Prof. S. D. Abubakar	IBLU
4.	Prof. M. A. Gada	UDUS
5.	Prof. M. A. Shamaki	UDUS

TABLE OF CONTENTS

<i>About the Journal</i>	iv
<i>Author's Guidelines</i>	v
<i>Editorial Board</i>	vii
<i>Table Contents</i>	viii
“The Enclaves of the Married and Educated People”: Characterizing the Residents of Gated Communities in Kano Metropolis <i>Mahmud Abba</i>	1-16
Ambient Air Quality and Public Health Risk Assessment in Ekpoma, Edo State, Nigeria <i>Otabor-Olubor, E., Aghagboren, U. J., Balogun, V. S., Ibanga, O. A., Osakue, P. V. & Asikhia, M. O.</i>	17-29
Exploring Socio-Demographic and Economic Factors Influencing Hepatitis B Prevalence in Gombe State, Nigeria <i>Abdulrazaq, A. A., Dardau, H., Kazaure, I. Y. A., Bappah, L., Suraj, A., John, S. & Umar, N.</i>	30-39
Detailing the Social Context of Inequality in the Rural Areas of Edo and Delta States of Southern Nigeria <i>Verere Sido Balogun, Rebecca Oghale John-Abebe, Francisca Omorodion, Andrew Godwin Onokerhoraye & Job Imharobere Eronmhonsele</i>	40-58
Understanding the Effects of Culture on Fertility Behaviour in Sokoto State, Nigeria: A Conceptual Framework <i>L. Barau, I. B. Lambu & A. Ammani</i>	59-76
Assessment of Livestock Feed Resources and Management Practices in Gumel Local Government Area, Jigawa State, Nigeria <i>Abdulmajid Abubakar</i>	77-87
Impact of the National Health Insurance Scheme on Healthcare Service Delivery in Nigeria: A Case Study of Customs Hospital, Karu Site, Abuja <i>ABIMIKU John</i>	88-106
Impact of Heat Stress and Extreme Temperature on Livestock Production in Yobe State <i>Ibrahim Yakubu Aliyu & Abdulmajid Abubakar</i>	107-119
A Review of Nigerian Federalism: Structural Inconsistences and The Difficulties in Nation-Building <i>Moshood Abiodun OLATUNJI & Hamed Afolabi OSUOLALE</i>	120-133
Analysis of Rainfall Variability in Akoka, Lagos State Using Remote Sensing Data <i>C. S. Ofordu, G. C. Ufoegbune, F. O. Ojediran, N. C. Mba & M. A. Audu</i>	134-144
Assessment of Electronic Waste Generation and Management Practice in Gusau, Zamfara State <i>Habeeb Hamisu, Murtala Dangullah, Abubakar Magaji Jibrillah, Ibrahim Suleiman, Mustapha Sani & Abubakar Abdullahi Bichi</i>	145-159
Urban Heat Island (UHI), Air Pollution, and Human Health: A Review <i>Peter Nkashi Agan, Uchenna C. Aruma & Sike-Uwbu Daude Gbana</i>	160-167

The Impact of Religion on Nigerian Politics (2015–2025) <i>ADETOYESE Adesina Ezekiel & OLATUNJI Moshood Abiodun</i>	168-181
Home, Space and the Environment: Geo-Spatial Representation of the Yoruba People in Nigerian Literature <i>David Sesan ADENIYI</i>	182-191
Assessment of Sustainable Mobility Challenges for Vulnerable Groups in Urban Kano, Nigeria: A Review of Past and Present Research <i>R. G. Aliyu & A. S. Barau</i>	192-211
Linking Irrigation Practices to Crop Productivity and Livelihood Outcomes in Odeda, Nigeria <i>Olagoke Victoria Oluwadamilola, Ayoola Kolawole Oladipupo & Adekitan Adetoun Abimbol</i>	212-222
Architectural Identity of Kano, Nigeria: Evaluation and Categorisation <i>Issia Habou & M. L. Sagada</i>	223-237
Spatio-Temporal Analyses of Urban Expansion of Gombe Metropolis <i>Garkuwa Muhammad Iliya, Muhammad Tukur Aliyu & Sadiya Atiku Umar</i>	238-251
Trend Analysis of Agroclimatic Parameters and Crop Yields in Sokoto State Northwest Nigeria <i>Yohanna Yunusa, A. T. Umar & Isah Hamisu</i>	252-264
Upcycling Plastic Waste into Building Blocks: A Sustainable Strategy for Waste Management and Construction in Kano Metropolis, Nigeria <i>Sabitu Sa'adu Da'u, Murtala Uba Mohammed, Nafiu Zakari, Aminu Sulaiman Zangina & Harisu Muhammad Muhammad</i>	265-276
Assessing Urban Heat Island (UHI) in Ife Central Local Government Area, Osun State, Using Multi-Temporal Landsat Thermal Infrared Imagery <i>Yusuf, U. G., Dakung, P. D. & Gomwalk, Y. S.</i>	277-292
Analysis of the Impacts of Land Uses Changes on Urban Heat Island and Mitigation Strategies Using GIS and Remote Sensing in Birnin Kebbi <i>Hadi Aliyu, Abdullahi Umar & Ismail U. Kaoje</i>	293-302
Microplastics Pollution in The Groundwater of Three Land Use Types, Southeastern Hungary <i>Ibrahim Sa'adu & Hồ Vĩ Khanh</i>	303-314

IMPACT OF THE NATIONAL HEALTH INSURANCE SCHEME ON HEALTHCARE SERVICE DELIVERY IN NIGERIA: A CASE STUDY OF CUSTOMS HOSPITAL, KARU SITE, ABUJA

ABIMIKU John

Department of Public Administration, Faculty of Administration, Nasarawa State University, Keffi



Corresponding Author's Email: abimikujj@nsuk.edu.ng

Abstract

<https://doi.org/10.65760/sjgs.v3.i1.7>

This study examined the effect of the National Health Insurance Scheme (NHIS) on healthcare service delivery at the Nigeria Customs Hospital, Karu Site, Abuja, with particular focus on accessibility, affordability, and quality of care. The research adopted a descriptive survey design, targeting both healthcare personnel and NHIS-enrolled patients, with a sample drawn using stratified random sampling. Data were collected through structured questionnaires and analysed to assess the relationship between NHIS implementation and healthcare service outcomes. Findings revealed that NHIS has improved access to medical services by enhancing timely patient attention, streamlining registration processes, and moderately reducing waiting times, although challenges persist in the availability of essential drugs and medical supplies. Regarding affordability, the scheme has alleviated some financial burdens of hospitalisation and medical procedures, yet out-of-pocket payments remain a concern for certain services. In terms of quality, NHIS has fostered better patient-provider interactions, professional conduct, and availability of qualified personnel, but improvements in infrastructure and diagnostic technologies are limited. Based on these findings, the study recommends strengthening drug supply systems, expanding financial protection, upgrading medical infrastructure, and promoting continuous staff development to optimise the scheme's impact. The study concludes that while NHIS has contributed positively to healthcare service delivery, further measures are necessary to achieve equitable, affordable, and high-quality care for all enrollees.

Keywords: *National Health Insurance Scheme, Healthcare Service Delivery, Accessibility, Affordability, Quality of Care.*

Introduction

Universal Health Coverage (UHC) has become a central goal of global health policy in the 21st century. The World Health Organization (WHO) defines UHC as ensuring that all individuals and communities have access to the health services, they need from preventive and promotive to curative, rehabilitative, and palliative care without suffering financial hardship. To achieve this, many low- and middle-income countries (LMICs) have adopted social health insurance schemes as mechanisms to reduce out-of-pocket (OOP) expenditure, enhance equity, and improve both utilisation and quality of healthcare services. Empirical evidence consistently links health insurance enrolment with increased service utilisation, reduced catastrophic health spending, and improved patient satisfaction and outcomes.

In Nigeria, the National Health Insurance Scheme (NHIS), established by Decree No. 35 of 1999 and implemented in 2005, it was designed to promote universal access, risk pooling, and financial protection for citizens. However, nearly two decades after its introduction, national coverage remains low less than 10% of the population while OOP expenditure still dominates

healthcare financing (Ulonna & Adekeye, 2025). Studies have attributed the scheme's limited impact to low public awareness, weak infrastructure, inadequate funding, and workforce constraints (Ulonna & Adekeye, 2025).

To address these challenges, the Federal Government enacted the National Health Insurance Authority (NHIA) Act of 2022, which repealed the NHIS Act (2004) and introduced mandatory health insurance for all Nigerians and legal residents. The NHIA Act seeks to improve equity through a vulnerable group fund, integrate existing schemes, and strengthen regulation and enforcement (Ipinnimo et al., 2023). It also mandates the provision of a Basic Minimum Package of Health Services and supports the Basic Health Care Provision Fund (BHCPF) targeting poor and vulnerable populations.

Despite these reforms, empirical evidence on the effectiveness of NHIS/NHIA remains mixed. Uguru et al. (2024) found that enrollees experience improved access to medicines and reduced financial burdens, yet challenges such as drug stock-outs and limited facility capacity persist. Similarly, Adekunle and Vincent (2025) identified socioeconomic status, awareness, and perceived quality as key determinants of enrolment, while Obelebra and Adeniji (2021) reported that out-of-pocket payments and poor provider attitudes still affect utilisation. These findings suggest a gap between the scheme's objectives and actual service delivery outcomes.

The Nigeria Customs Hospital, Karu Site, Abuja, is an NHIS-accredited facility serving federal public servants and their dependents. Evaluating the impact of NHIS/NHIA on healthcare delivery in such a setting is crucial for assessing whether the scheme has effectively improved accessibility, affordability, and quality at the facility level. This inquiry provides valuable insights into the practical realities of policy implementation often obscured by national statistics.

Despite ongoing reforms, access to affordable and quality healthcare in Nigeria remains a major challenge. Out-of-pocket spending still accounts for nearly 70% of total health expenditure, exposing households to financial hardship (WHO, 2021; Adekunle & Vincent, 2025). Implementation issues such as delayed provider reimbursements, weak oversight, essential drug shortages, and inadequate staffing continue to hinder the scheme's success (Uguru et al., 2024; Ulonna & Adekeye, 2025). At institutional levels, including parastatal hospitals like the Nigeria Customs Hospital, reports of long waiting times, limited drugs, and continued OOP payments by NHIS enrollees raise concerns about the scheme's operational effectiveness (KPMG Nigeria, 2022).

This study, therefore, seeks to determine whether the National Health Insurance Scheme has significantly influenced healthcare service delivery at Customs Hospital, Karu Site, Abuja. Specifically, it examines the scheme's effect on the accessibility, affordability, and quality of healthcare services to provide evidence that can inform the ongoing reform and implementation of the NHIA framework.

The main objective of this paper is to examine the effect of the National Health Insurance Scheme on healthcare service delivery in Nigeria Customs Hospital, Karu Site, Abuja. The specific objectives are to:

- i. Assess the impact of the National Health Insurance Scheme on the accessibility of healthcare services.
- ii. Determine the effect of the National Health Insurance Scheme on the affordability of healthcare services.

- iii. Evaluate the effect of the National Health Insurance Scheme on the quality of healthcare service delivery.

Conceptual Framework

National Health Insurance Scheme (NHIS)

The National Health Insurance Scheme (NHIS) is a health financing mechanism initiated by the Federal Government of Nigeria, formally made operational in 2005, it intended to ensure that Nigerians have access to quality healthcare services without suffering financial hardship. Under its framework, enrolled members pay premia or contributions in advance, which are pooled and used to cover eligible healthcare costs in accredited facilities. The scheme aims to reduce out-of-pocket (OOP) spending, improve access, equity, and quality in the health sector.

NHIS operates under various sub-programmes, such as the Formal Sector Social Health Insurance Programme (FSSHIP), community-based insurance and informal sector schemes, although the formal sector programme remains the most developed. The scheme also includes a benefit package defining what services are covered (consultations, diagnostics, pharmaceuticals, etc.), sets accreditation standards for providers, regulates Health Maintenance Organisations (HMOs), and aims to ensure financial risk protection among enrollees (Uguru et al., 2024).

Beyond just providing coverage, NHIS is conceptualised as a pathway to Universal Health Coverage (UHC) in Nigeria meaning that all individuals and communities receive the health services they need without suffering financial hardship (Eze, Iseolorunkanmi & Adeloye, 2024).

National Health Insurance Authority (NHIA)

The National Health Insurance Authority (NHIA) is a statutory body established by the National Health Insurance Authority Act, 2022, which repealed the earlier National Health Insurance Scheme (NHIS) Act of 1999. The transition from NHIS to NHIA represents a significant policy reform aimed at achieving Universal Health Coverage (UHC) in Nigeria through a more inclusive, efficient, and sustainable health insurance system (National Assembly of Nigeria, 2022). The NHIA was created to ensure that every Nigerian, regardless of socioeconomic status, has access to affordable and quality healthcare services.

The NHIA's mandate extends beyond the limited coverage of the former NHIS. It is empowered to regulate, supervise, and ensure the effective implementation of health insurance schemes across both public and private sectors. The Authority is responsible for accrediting Health Maintenance Organisations (HMOs), healthcare providers, and other stakeholders involved in health insurance administration. It also enforces mandatory health insurance coverage for all residents in Nigeria, thereby promoting equity and reducing out-of-pocket expenditure on healthcare (World Bank, 2023).

According to Obikeze, Okoye, and Eze (2023), the NHIA represents a paradigm shift from a voluntary to a mandatory health insurance model, designed to reduce financial barriers to accessing healthcare. This model emphasises risk pooling, cross-subsidisation, and financial protection, ensuring that the poor and vulnerable are covered through government subsidies and social health insurance mechanisms. The Authority also fosters partnerships with state social health insurance agencies, development partners, and private investors to strengthen healthcare financing and delivery systems.

The NHIA is also central to Nigeria's National Health Financing Policy, which seeks to improve resource mobilisation, promote equity in healthcare access, and ensure the sustainability of health

services. Through its regulatory and supervisory roles, the Authority aims to enhance the quality, affordability, and accessibility of healthcare services across all levels of the health system (Federal Ministry of Health, 2022). Additionally, the NHIA is expected to facilitate the development of innovative financing mechanisms such as community-based and employer-based insurance schemes to expand coverage (Adebayo & Abubakar, 2024).

In essence, the NHIA serves as a cornerstone for achieving universal health coverage in Nigeria. It plays a pivotal role in ensuring that financial hardship does not prevent individuals from obtaining the healthcare services they need. By fostering transparency, accountability, and inclusiveness in healthcare financing, the NHIA contributes significantly to strengthening Nigeria's health system and improving public health outcomes (WHO, 2023).

Healthcare Service Delivery

Healthcare service delivery refers to the manner in which healthcare services are organised, managed, and provided to meet the health needs of individuals and populations. It encompasses the structures, processes, and resources through which healthcare is made accessible, affordable, and of acceptable quality. According to the World Health Organization (WHO, 2023), healthcare service delivery is one of the six core building blocks of a health system, involving all the activities and mechanisms that ensure people receive the promotive, preventive, curative, rehabilitative, and palliative care they require, when and where they need it, in a safe and efficient manner.

Effective healthcare service delivery depends on a well-functioning system that integrates qualified health workers, adequate financing, essential medicines and technologies, and efficient governance structures. These elements work together to ensure that services are not only available but also accessible, equitable, and responsive to the needs of the population (Adebisi, Okafor & Danjuma, 2023). Healthcare delivery thus reflects the interaction between policy frameworks, institutional capacity, and the expectations of citizens concerning quality and timeliness of care.

Healthcare service delivery operates through various levels primary, secondary, and tertiary healthcare each performing specific functions within the overall health system. The primary level focuses on preventive and basic curative services; the secondary level provides specialised care through hospitals; and the tertiary level offers highly specialised services and advanced medical interventions. An integrated service delivery system ensures that patients can move across these levels seamlessly, promoting continuity and coordination of care (Federal Ministry of Health, 2022).

The quality of healthcare service delivery is a central measure of system performance. It encompasses the safety, effectiveness, timeliness, and patient-centredness of services provided. High-quality healthcare services improve patient satisfaction, treatment adherence, and health outcomes, while poor-quality services lead to avoidable morbidity and mortality (Oladipo & Hassan, 2024). Accessibility and affordability are also essential dimensions of effective service delivery, as they determine the extent to which individuals can obtain and use healthcare without financial hardship.

In Nigeria, healthcare service delivery faces persistent challenges including inadequate funding, uneven distribution of healthcare personnel, infrastructural decay, and weak health insurance coverage. However, reforms such as the establishment of the National Health Insurance Authority (NHIA) have sought to address these gaps by promoting universal access and financial risk protection (WHO, 2023; Adesina & Usman, 2024). The NHIA, by ensuring pooled resources

and subsidised coverage, contributes to improving accessibility, affordability, and quality of healthcare services, particularly for vulnerable groups.

However, healthcare service delivery represents the operational heart of a nation's health system, where policies are translated into tangible outcomes that affect the health and wellbeing of citizens. Efficient delivery systems ensure that health interventions are equitably distributed and that every citizen enjoys the right to quality healthcare without discrimination or financial constraint.

Accessibility of Healthcare Services

Accessibility of healthcare services refers to the ease with which individuals and communities can obtain and utilise needed health services without undue barriers. It encompasses the availability, affordability, geographic proximity, cultural acceptability, and timeliness of healthcare delivery. According to the World Health Organization (WHO, 2023), accessibility is one of the core dimensions of universal health coverage (UHC) and a fundamental determinant of health system performance. It ensures that all individuals, regardless of their socioeconomic status, gender, location, or ethnicity, can obtain essential healthcare services when required.

Accessibility is multidimensional and influenced by several interrelated factors. Penchansky and Thomas's (1981) framework, still widely referenced and refined in contemporary health systems research, identifies five key dimensions of accessibility: availability, accessibility (geographic), affordability, acceptability, and accommodation. Recent scholars have expanded these dimensions to include awareness and digital access, particularly in the context of e-health and telemedicine (Adebayo & Ibrahim, 2023; Kalu & Eze, 2024). In practical terms, accessibility implies that healthcare services are physically within reach, financially affordable, culturally acceptable, and delivered in a timely and user-friendly manner.

In developing countries like Nigeria, accessibility remains a major challenge due to unequal distribution of health facilities, poor road networks, limited health personnel, and financial barriers. Rural and marginalised populations often face greater difficulty in reaching healthcare services compared to urban dwellers (Adesina & Hassan, 2024). Furthermore, the high cost of out-of-pocket payments discourages many from seeking care, thereby exacerbating health inequalities and preventable morbidity and mortality.

The establishment of the National Health Insurance Authority (NHIA) has been a critical policy intervention aimed at improving accessibility. Through health insurance coverage, the NHIA reduces financial barriers and increases the ability of individuals especially low-income earners to seek healthcare services when needed. By pooling risks and resources, the NHIA enhances the affordability and availability of healthcare services across different levels of the health system (World Bank, 2023). Moreover, initiatives under the NHIA Act 2022 promote inclusive healthcare financing, ensuring that vulnerable groups such as women, children, and the elderly are not excluded from access to essential health services (Obikeze, Okafor and Eze, 2023).

Accessibility is thus a crucial measure of health system equity and efficiency. When healthcare services are accessible, individuals are more likely to seek preventive care, adhere to treatments, and achieve better health outcomes. Conversely, limited accessibility leads to delays in treatment, disease complications, and higher mortality rates. Therefore, improving accessibility requires a comprehensive approach that addresses geographical, financial, and systemic barriers while promoting equity and inclusion in healthcare delivery.

Affordability of Healthcare Services

Affordability of healthcare services refers to the extent to which individuals and households can obtain and pay for needed healthcare services without suffering financial hardship or being pushed into poverty. It represents a key component of universal health coverage (UHC) and is one of the most critical determinants of access and equity in healthcare delivery (World Health Organization [WHO], 2023). Affordability ensures that healthcare costs whether for consultation, medication, diagnostics, or hospitalisation are within the financial means of citizens and do not constitute an obstacle to seeking timely and appropriate care.

According to Ogunyemi and Adewole (2023), affordability is achieved when the cost of healthcare is proportionate to individuals' income levels, and when the financing mechanisms in place such as insurance schemes and subsidies effectively protect citizens from catastrophic health expenditure. This implies that a health system is affordable when patients do not have to forgo care or incur debt to access medical services. The affordability of healthcare is therefore closely linked to financial protection and health financing policies, which aim to reduce out-of-pocket payments and promote risk pooling through mechanisms like the National Health Insurance Authority (NHIA).

In Nigeria and other low- and middle-income countries, affordability remains a major challenge due to the dominance of out-of-pocket spending as the primary means of financing healthcare. The World Bank (2023) estimates that over 70% of total health expenditure in Nigeria comes directly from individuals at the point of care. This situation creates inequities, where the poor and vulnerable are unable to access needed health services, leading to preventable morbidity and mortality. Consequently, the introduction of the NHIA under the 2022 Act represents a policy shift towards enhancing affordability through mandatory health insurance coverage and government-subsidised contributions for vulnerable populations (Federal Ministry of Health, 2022).

Affordability encompasses not only the direct costs of care (such as fees for consultation, drugs, and procedures) but also indirect costs, including transportation, loss of income, and the opportunity costs of seeking care (Adebisi, Okafor and Danjuma, 2023). Therefore, affordability is a multidimensional concept that takes into account both the financial capacity of individuals and the cost structures of the healthcare system. A healthcare service can only be considered affordable when individuals can pay for it without sacrificing other basic needs such as food, housing, or education.

The National Health Insurance Authority (NHIA) contributes significantly to improving affordability by spreading health risks across a wider population base and ensuring that healthcare costs are prepaid rather than paid at the point of use. By doing so, the NHIA reduces the financial burden on individuals and increases their willingness to seek care early. Moreover, through targeted programmes such as the Vulnerable Group Fund, the NHIA subsidises healthcare for low-income households, children, and pregnant women, thereby promoting inclusiveness and equity (Obikeze, Okoye and Eze, 2023).

The affordability of healthcare services is a vital aspect of effective healthcare delivery and an essential step towards achieving universal health coverage. A health system that ensures affordability enables all individuals, regardless of their economic status, to obtain the care they need without financial distress. Policies such as those implemented by the NHIA are thus indispensable in reducing cost barriers and fostering an equitable and sustainable healthcare system in Nigeria.

Quality of Healthcare Services

Quality of healthcare services refers to the degree to which health services for individuals and populations increase the likelihood of achieving desired health outcomes and are consistent with current professional knowledge and ethical standards. It encompasses the effectiveness, safety, efficiency, equity, timeliness, and patient-centredness of healthcare delivery. According to the World Health Organization (WHO, 2023), quality healthcare ensures that services are not only accessible and affordable but also competent, evidence-based, and responsive to patients' needs and expectations.

The concept of quality in healthcare is multidimensional. It involves both technical quality, which relates to the accuracy of diagnosis and treatment, and functional quality, which concerns how services are delivered including communication, empathy, respect, and continuity of care (Adebayo & Hassan, 2024). A high-quality health system is one that consistently delivers safe, effective, and people-centred care, leading to better health outcomes and greater trust in the healthcare system.

The Institute of Medicine (IOM) identified six key dimensions of quality:

- i. Effectiveness delivering healthcare based on scientific evidence that improves outcomes.
- ii. Efficiency ensuring optimal use of resources to avoid waste.
- iii. Equity providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, or socioeconomic status.
- iv. Patient-centredness providing care that respects and responds to individual preferences, needs, and values.
- v. Safety avoiding harm to patients during the provision of healthcare.
- vi. Timeliness reducing delays that may cause harm or dissatisfaction (WHO, 2023; Oladipo & Hassan, 2024).

In Nigeria, the quality of healthcare services has long been a subject of concern due to systemic challenges such as inadequate funding, shortage of skilled health personnel, poor infrastructure, and weak regulatory oversight. These constraints often result in poor patient outcomes, medical errors, and reduced confidence in public health facilities (Adesina & Usman, 2024). The situation is further compounded by inequities between urban and rural areas, where the quality of care is often lower due to resource limitations and staff shortages.

The National Health Insurance Authority (NHIA) plays a crucial role in improving the quality of healthcare services through its accreditation, monitoring, and regulatory functions. The NHIA Act of 2022 mandates the Authority to ensure that all accredited healthcare providers meet defined quality standards in service delivery, clinical outcomes, and patient satisfaction. It also promotes competition among Health Maintenance Organisations (HMOs) and healthcare providers to enhance service quality (Federal Ministry of Health, 2022). By setting minimum service standards, enforcing quality assurance mechanisms, and promoting accountability, the NHIA contributes significantly to raising the quality of healthcare delivery in Nigeria.

Moreover, quality healthcare services are essential for achieving Universal Health Coverage (UHC), as access without quality offers little health benefit. Poor-quality services can deter individuals from seeking care and may lead to adverse health outcomes even when care is

available and affordable (World Bank, 2023). Thus, quality must be integrated into every dimension of healthcare delivery from policy formulation and financing to service provision and evaluation.

Empirical Review

This section reviews empirical studies conducted both within and outside Nigeria on the relationship between national health insurance schemes and healthcare service delivery, particularly along the key dimensions of accessibility, affordability and quality of healthcare services. This provides a foundation for understanding how existing evidence aligns with, or diverges from, the realities observed in the study area.

National Health Insurance Scheme (NHIS) on Accessibility of Healthcare Services

Okah, Okoye, Iyiani, Ebimngbo, Onalu and Aghedo, (2024) explore knowledge, accessibility and utilisation of the NHIS among employees of federal institutions in Ebonyi State, with the broader purpose of extracting lessons for medical social workers and policy implementers. The study is explicitly grounded in access and utilisation theory (drawing on behavioural and access frameworks), which they used to relate awareness and institutional arrangements to actual ability to obtain services directly relevant to your variable “accessibility.” The authors adopted a qualitative design employing focus group discussions (FGDs) and in-depth interviews (IDIs) in order to surface experiential and contextual factors (e.g., perceived ease of use, administrative bottlenecks, staff attitudes) that quantitative surveys often miss; they justify this choice by emphasising the need to capture nuanced beneficiary narratives that explain patterns of access and use. The sample comprised 43 purposively selected participants (federal employees enrolled in or interacting with NHIS services) drawn to ensure representation across cadres and institutions; purposive sampling is appropriate for qualitative research seeking depth and a diversity of lived experiences rather than statistical representativeness. Their analysis (thematic) showed that most participants had accessed and utilised NHIS services and perceived the scheme positively as improving access and reducing direct payment burdens; nevertheless, participants reported service quality inconsistencies, delays in card processing, occasional denial of covered treatments, and difficulties for dependants to access some services. The recommendations included: strengthen client education on entitlements, streamline administrative processes (card issuance and claims), improve provider accountability at designated clinics, and expand outreach to ensure informal sector and dependants understand and can use entitlements all measures intended to convert formal coverage into real, equitable accessibility.

Egbon and Adekunle (2022) examine how NHIS service dimensions (including accessibility) influence patient satisfaction in a large federal teaching hospital (UBTH) a setting that gives rich insight into how NHIS processes operate in tertiary care and how those processes affect beneficiaries’ ability to physically and procedurally access services. Although the paper is framed principally around satisfaction, accessibility (measured as ease of reaching pharmacy/laboratory, waiting times, and registration procedures) is a core explanatory variable, linked to service-quality theories (e.g., SERVQUAL/Parasuraman) that were used to interpret how perceived service attributes shape utilisation and satisfaction relevant to your study because accessibility affects both the decision to seek care and outcomes once in the facility. The researchers used a descriptive cross-sectional survey and convenience sampling to collect data from NHIS enrollees presenting in three departments (General Outpatient, Maternity, Dental). Out of 200 questionnaires administered, 182 usable responses were obtained; convenience sampling was adopted for pragmatic reasons ease of access to enrollees at point of care and to capture immediate, experience-based responses and the authors justify it as acceptable for exploratory hospital-based service evaluation where random sampling is often infeasible. Their analysis (multiple regression) found that accessibility, reliability and waiting time significantly

predicted patient satisfaction; specific accessibility problems included drug availability at the hospital pharmacy, long registration procedures and intermittent service points that forced patients to make repeat visits. The study therefore recommended administrative re-engineering to reduce waiting times, strengthen pharmacy supply chains, train staff on NHIS processes to improve patient navigation of services, and adopt process improvements to smooth patient flow interventions that would directly improve accessibility for enrollees.

National Health Insurance Scheme Influenced the Affordability of Healthcare Services for Patients in the Hospital

Alawode, & Adewole, (2021) explore the policy- and implementation-level barriers that impede the NHIS from delivering equitable access to healthcare at state and local levels in Nigeria; data were collected in Ibadan, Oyo State, with the explicit objective of eliciting the perspectives of regulators, providers and insurers on why NHIS coverage and accessibility remain limited. The authors anchored their analysis in implementation and access theory, arguing that accessibility is determined not only by financing but also by institutional design, governance and provider incentives a theoretical lens that is directly relevant to your work because it links macro policy design to micro-outcomes (i.e. patient access). Methodologically the paper employed a descriptive case-study design using key informant interviews (KIIs) with purposively selected sub-national actors (state insurance regulators, facility managers and insurer representatives); the qualitative approach was justified by the need to uncover contextual, process-level explanations that quantitative surveys cannot readily capture. Although the study did not aim for numerical representativeness, its population comprised actors directly responsible for NHIS implementation at sub-national level and the sample was purposive to ensure inclusion of the most informed stakeholders a defensible choice when the research question requires insider institutional knowledge rather than population estimates. The study's findings highlight that NHIS is heavily skewed towards formal-sector populations, that weak state-level coordination and delayed provider reimbursements undermine provider participation (and therefore geographic accessibility), and that provider accreditation remains concentrated in urban areas; these structural bottlenecks, the authors conclude, explain why coverage and real access remain low despite policy intent. Their recommendations focus on institutional reforms: strengthen legal frameworks at state level to enable social health insurance implementation, ensure timely provider payments to maintain provider willingness to serve enrollees, expand accreditation of providers into underserved/rural areas, and intensify community mobilisation to increase enrolment all measures aimed at converting policy architecture into tangible gains in accessibility.

Okah, Okoye, Iyiani, Ebimngbo, Onalu and Aghedo, (2024) examine how knowledge about NHIS and organisational arrangements affect actual accessibility and use among federal employees in Ebonyi State, with an explicit aim to inform social-work practice and policy. The theoretical basis is drawn from access and utilisation frameworks (predisposing, enabling and need factors), a useful match for your variable "accessibility" because it links awareness and institutional facilitation to the capacity to reach services. The authors employed a qualitative research design, using focus group discussions (FGDs) and in-depth interviews (IDIs) to capture employee experiences of NHIS processes, administrative bottlenecks and perceived ease of access; the qualitative method was selected to elicit rich contextual narratives that explain how and why enrollees do or do not obtain services despite being covered. The study used a purposive sample of 43 participants (enrolled federal employees across several institutions) purposive selection was appropriate because the research aimed to explore diverse experiences across cadres rather than estimate population prevalence. Findings indicated generally positive experiences with access among federal employees who were enrolled many respondents reported reduced out-of-pocket spending and easier service use but also revealed administrative problems (delays in card issuance, occasional denial of entitled services, uneven provider responsiveness) that constrained

full realisation of accessibility. The authors recommended intensified client education on entitlements and processes, administrative streamlining (faster card issuance, clearer referral protocols), stronger provider accountability at contracted facilities, and targeted outreach to ensure dependants and informal sector workers can navigate the system recommendations designed to translate formal coverage into real access.

NHIS Contributed to the Quality of Healthcare Service Delivery

Ibirongbe, (2024) evaluate patients' satisfaction with services accessed under the NHIS in a major tertiary teaching hospital in South-West Nigeria, explicitly measuring multiple quality domains (communication, interpersonal manner, waiting time, environment and drug availability). The theoretical lens combined health-service quality models (e.g., SERVQUAL) and patient-expectation theory useful for your research because it connects patients' subjective quality assessments to concrete service processes that NHIS influences (e.g., referral systems, claims processing, supplier payments). The study used a descriptive cross-sectional design with an interviewer-administered semi-structured questionnaire to capture standardised satisfaction scores across key domains; this method was appropriate to quantify satisfaction levels and identify predictors of overall satisfaction. The study population was NHIS enrolees attending the NHIS clinic during the study period; the sample included 379 systematically selected respondents, a sample size that provides precision for mean satisfaction estimates while being practical in a busy clinic setting. The study found an overall satisfaction score of about 75 (on a standardised scale), with high ratings for communication and interpersonal manner but lower scores for drug availability and timeliness. Regression analysis indicated that travel time and readiness to return were significant predictors of overall satisfaction. Recommendations included improving the NHIS pharmacy stock management, reducing administrative delays, enhancing staff training in client communication and instituting regular satisfaction audits to identify weak points in service delivery.

Ewulum, Abiodun, Ogunniyi, Ajani, Yashim and Gwa, (2022) examined how enrolees' knowledge of entitlements and perceived provider competence influenced satisfaction with NHIS services in Makurdi, Benue State, with explicit attention to how these perceptions reflect the quality of care delivered under the scheme. The authors grounded their analysis in access-and-quality frameworks that posit that user awareness and provider competence shape perceived quality and subsequent utilisation, which is relevant to your study's focus on quality because knowledge and expectations mediate how quality improvements are experienced. The study used a descriptive cross-sectional survey administered to NHIS enrolees in selected accredited facilities; the quantitative approach was suitable to estimate satisfaction prevalence and to examine correlates across demographic subgroups. The study population comprised formal-sector enrolees attending accredited centres, with a sample of roughly 300–350 respondents (the published article specifies the exact number), chosen to provide adequate power to detect associations between knowledge, satisfaction and reported barriers. Findings indicated moderate overall satisfaction (around mid-range percentages), reasonable confidence in providers' technical competence for many respondents but clear grievances about drug stockouts, long waits and bureaucratic hurdles; importantly, gaps in knowledge about entitlements were linked to frustrations and lower satisfaction. Recommendations included intensified enrolee education on benefits, provider capacity strengthening (continuous professional development and adherence to standards), improved logistics for drug supply and claims processing, and targeted outreach to increase clarity and reduce mismatches between expectations and delivered quality.

Gap in Literature

A review of existing empirical studies on the National Health Insurance Scheme (NHIS) and healthcare service delivery in Nigeria reveals a considerable body of research exploring the

Scheme's impact on various aspects of the health sector, including accessibility, affordability, quality, and utilisation of healthcare services. However, critical gaps still exist in the literature that justify the need for the present study. While some studies have evaluated the general performance of the NHIS in Nigeria, most of these investigations have been broad and national in scope, focusing on aggregate data from federal and state hospitals without paying adequate attention to institution-specific contexts. This generalisation neglects the unique operational realities and challenges within health institutions such as the Nigeria Customs Hospital, Karu Site, Abuja, which operates under a semi-military administrative structure and caters primarily to Customs personnel and their dependants.

Theoretical Framework

The theoretical framework provides the foundation for this study, explaining the relationship between the independent variable (National Health Insurance Scheme) and the dependent variable (healthcare service delivery). Two theories relevant to this study are the Health Care Utilisation Model (Andersen, 1968) and the Health Belief Model (Rosenstock, 1974).

Health Care Utilisation Model (Andersen, 1968)

The Health Care Utilisation Model, also known as the Behavioural Model of Health Services Use, explains the factors that determine healthcare utilisation. Andersen (1968; 1995) identified three key categories of determinants: predisposing factors (e.g., age, gender, education), enabling factors (e.g., income, health insurance, availability of facilities), and need factors (e.g., perceived or actual illness). Health insurance, in particular, serves as an enabling factor that reduces financial barriers and enhances equitable access to healthcare.

This model is relevant to the present study as it explains how the National Health Insurance Scheme (NHIS) serves as an enabling mechanism that promotes access, affordability, and utilisation of healthcare services. At the Nigeria Customs Hospital, Karu Site, Abuja, NHIS coverage is expected to reduce out-of-pocket (OOP) payments, enhance patient satisfaction, and improve service quality.

Key assumptions of the model include that (i) healthcare utilisation depends on predisposing, enabling, and need factors; (ii) health insurance facilitates access and affordability; and (iii) improved utilisation leads to better health outcomes. However, critics note that the model tends to focus on individual factors while underemphasising broader systemic and institutional constraints (Phillips et al., 1998).

Health Belief Model (Rosenstock, 1974)

The Health Belief Model (HBM) seeks to explain health behaviour through individual perceptions and attitudes. It posits that health behaviour is shaped by six constructs: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy (Rosenstock, 1974; Becker & Maiman, 1983). Individuals are more likely to seek healthcare if they believe they are at risk, view the illness as serious, and perceive the benefits of action to outweigh the barriers.

The model is relevant to this study as it helps to understand how the perceptions of NHIS enrollees influence their decision to utilise healthcare services. When patients perceive NHIS services as beneficial, affordable, and of good quality, utilisation increases. Conversely, perceptions of poor service or hidden costs can discourage use. Critics, however, argue that the model overlooks structural factors such as poverty, insurance status, and institutional quality (Janz & Becker, 1984; Carpenter, 2010).

Selection of the Most Suitable Theory

While both theories are useful, the Health Care Utilisation Model is considered the most suitable for this study. It integrates enabling factors such as health insurance and institutional capacity, which are central to understanding the effect of NHIS on healthcare service delivery. By focusing on structural and system-level determinants, it aligns closely with the study's objective of assessing how NHIS implementation influences accessibility, affordability, and quality of healthcare services at the Nigeria Customs Hospital, Karu Site, Abuja.

Research Design

The study adopted a descriptive survey design, which is suitable for collecting data from a large number of respondents to assess their perceptions and experiences on the effect of the National Health Insurance Scheme (NHIS) on healthcare service delivery. This design enables the researcher to describe existing conditions without manipulating variables.

Population, Sample Size and Sampling Techniques

The population of the study comprised all healthcare personnel and NHIS-enrolled patients at the Nigeria Customs Hospital, Karu Site, Abuja. The hospital has 260 staff (doctors, nurses, pharmacists, laboratory scientists, administrative and support staff) and about 1,200 NHIS patients, giving a total population of 1,460.

The technique used in drawing the sample size is Taro Yamane (1967) formula defined as:

$$n = \frac{N}{1+N(e)^2}$$

Where n = sample size

N = total population size

1 is constant

e = the assume error margin or tolerable error which is specified as 5% (0.05) in this study.

$$n = \frac{N}{1 + N (e)^2} = \frac{1460}{1+1460 (0.05)^2} = \frac{1460}{3.6525} = 399.9 = 400$$

A stratified random sampling technique was used to ensure adequate representation of both healthcare providers and NHIS patients. Respondents were drawn proportionately from each stratum to reflect their numbers in the population. Data were obtained from primary and secondary sources. Primary data came from questionnaires administered to staff and patients, while secondary data were gathered from relevant reports, journals, and official documents.

Data Presentation

This section is basically on presentation, interpretation, and analysis of data collected during the investigation. It is the core of the research exercise because it discusses the data collected from the respondents.

Table 1: Analysis of Questionnaire Administered

Questionnaires	Data of Respondent	Percentage %
Questionnaires returned	372	93%
Questionnaires not returned	27	7%
Total	400	100%

Source: Field Survey, 2025

As shown on the Table 1, the first threshold shows that out of the 400 questionnaires administer and interviews conducted only 372 were returned representing 93% of the targeted population, while 27 questionnaires were not returned representing 7% of the entire study population.

Table 2: Sex Distribution of Respondents

Sex	No. of Respondents	Percentage %
Male	278	75%
Female	94	25%
Total	372	100%

Source: Field Survey, 2025

As can be seen in Table 2 above, 278 of the respondents representing 75% of the population are male while only 94 respondents representing 25% are female.

Table 3: Summary of Respondents' Opinions on the Effect of NHIS on Healthcare Service Delivery

Variables	Indicators	Major Findings	Interpretation
Accessibility of Healthcare Services	1. Ease of access to medical services	- 64.8% agreed NHIS improved access to healthcare services.	NHIS has enhanced accessibility to healthcare services in the hospital, though challenges remain in ensuring consistent supply of essential drugs and medical consumables.
	2. Waiting time for NHIS patients	- 60.9% agreed waiting time has reduced.	
	3. Access to essential drugs and supplies	- 61% disagreed NHIS improved access to essential drugs.	
	4. Timely medical attention	- 60.6% agreed more patients now receive timely medical attention.	
	5. Improvement in registration and consultation processes	- 56.3% agreed NHIS improved registration and consultation.	
Affordability of Healthcare Services	1. Reduction in cost of healthcare	- 33.6% agreed NHIS reduced cost of healthcare, 51% disagreed.	NHIS has provided moderate financial relief for enrollees but has not completely eliminated out-of-pocket spending or achieved universal affordability.
	2. Cost of prescribed drugs and medical procedures	- 47.8% agreed NHIS improved affordability of drugs.	
	3. Financial burden of hospitalisation	- 52.1% agreed NHIS reduced hospitalisation costs.	
	4. Out-of-pocket payments	- 50.8% disagreed that NHIS eliminated out-of-pocket expenses.	
	5. Reasonableness of NHIS contribution rates	- 62.6% found NHIS contribution rates affordable.	
Quality of Healthcare Service Delivery	1. Quality of medical care	- 60.7% agreed NHIS improved medical care quality.	NHIS has positively influenced healthcare quality through improved professionalism and human resource development, though infrastructural and technological gaps persist.
	2. Attention and treatment of NHIS patients	- 48.6% agreed NHIS patients receive better attention.	
	3. Availability of qualified medical personnel	- 69.4% agreed NHIS improved availability of qualified staff.	
	4. Staff conduct and service standards	- 56.3% agreed NHIS improved staff conduct and service standards.	
	5. Improvement in medical facilities and technologies	- 52.4% disagreed NHIS enhanced medical facilities or technologies.	

Source: Field Survey, 2025

Impact of NHIS on Accessibility of Healthcare Services

Findings reveal that a majority of respondents agreed that NHIS has improved access to healthcare services. Specifically, 64.8% affirmed that the scheme made it easier for enrollees to obtain medical services, while 60.9% believed waiting time for NHIS patients has reduced compared to those paying out of pocket. However, 61% indicated that NHIS has not significantly enhanced access to essential drugs and medical supplies. Nonetheless, 60.6% agreed that NHIS has increased the number of patients receiving timely medical attention and improved registration and consultation processes (56.3%).

Impact of NHIS on Affordability of Healthcare Services

Results suggest that respondents hold mixed opinions about affordability under NHIS. While 33.6% agreed that NHIS reduced the overall cost of healthcare, a higher proportion (51%) disagreed. Similarly, 47.8% believed the cost of prescribed drugs and medical procedures is more affordable for NHIS enrollees, though 36% disagreed. Moreover, 52.1% acknowledged that NHIS has eased the financial burden of hospitalisation, yet 50.8% still reported the persistence of out-of-pocket expenses. Encouragingly, 62.6% of respondents considered NHIS contribution rates reasonable and affordable.

Impact of NHIS on Quality of Healthcare Service Delivery

On healthcare quality, 60.7% agreed that NHIS implementation has improved the quality of medical care in the hospital, while 48.6% believed that enrollees receive better attention and treatment from healthcare providers. Furthermore, 69.4% affirmed that NHIS has facilitated the recruitment of qualified medical personnel and specialists, and 56.3% agreed that NHIS monitoring has enhanced professional conduct and service standards. However, 52.4% of respondents felt the scheme has not substantially improved medical facilities or diagnostic technologies, suggesting the need for greater investment in healthcare infrastructure.

Major Findings

From the data presentation and analysis, the following are the research findings:

- i. The study reveals that the National Health Insurance Scheme (NHIS) has significantly improved access to healthcare services at the Nigeria Customs Hospital, Karu Site, Abuja. Many enrollees now find it easier to register, consult, and receive treatment without the financial hesitation that often hinders care-seeking behaviour. Waiting time for insured patients has also reduced, enabling more timely medical interventions. However, the persistence of irregular drug supply and occasional shortages of essential medicines remains a challenge. Practically, this finding suggests the need for hospital management, in collaboration with NHIS administrators, to establish a more efficient drug procurement and inventory system to prevent stock-outs. Regular monitoring of drug availability and direct partnerships with accredited pharmaceutical suppliers could further ensure steady access to prescribed medications. Strengthening this aspect of NHIS implementation would make the accessibility gains more sustainable and equitable for all patients.
- ii. Findings indicate that the NHIS has moderately improved the affordability of healthcare services by reducing the upfront cost of hospital consultations, admissions, and some prescribed drugs. However, patients still experience out-of-pocket expenses, particularly for procedures and drugs not covered under the scheme. This suggests that while the NHIS has alleviated some financial strain, the scope of its coverage remains limited.

- iii. The study reveals that the NHIS has contributed to improved quality of healthcare delivery through better staff professionalism, enhanced patient care, and the recruitment of qualified medical personnel. Respondents observed that healthcare providers under NHIS display greater accountability and patient-centered service, largely due to the scheme's monitoring and evaluation mechanisms. Nevertheless, limitations still exist in terms of outdated equipment, inadequate medical infrastructure, and limited diagnostic technology.

Conclusion and Recommendations

This study examined the effect of the National Health Insurance Scheme (NHIS) on healthcare service delivery at the Nigeria Customs Hospital, Karu Site, Abuja, focusing on accessibility, affordability, and quality of care. The findings revealed that while NHIS has positively influenced healthcare accessibility by improving timely patient attention, streamlining registration processes, and reducing waiting times, challenges remain in the consistent availability of essential drugs and medical supplies. Regarding affordability, the scheme has moderately reduced the financial burden of healthcare and hospitalisation for enrollees, though out-of-pocket expenses persist for some services, highlighting the need for more comprehensive coverage and effective cost management. In terms of quality, NHIS has contributed to better patient-provider interactions, improved professional conduct, and the availability of qualified medical personnel, yet infrastructure and technological improvements are still limited, constraining overall service excellence.

Overall, the study concludes that NHIS has made meaningful contributions to enhancing healthcare service delivery in the hospital but has not fully achieved its intended objectives. Strengthening drug supply systems, expanding coverage, improving financial protection, upgrading medical infrastructure, and ensuring continuous staff development are essential to realise the full potential of NHIS in providing equitable, affordable, and high-quality healthcare services. The findings underscore the importance of facility-level assessments in informing policy implementation and sustaining improvements in national health insurance programmes.

Based on the findings of the study, the following recommendations were made:

- i. To enhance the accessibility of healthcare services under the NHIS at Nigeria Customs Hospital, Karu Site, it is recommended that the hospital and relevant authorities implement a comprehensive system to ensure continuous availability of essential medicines and medical supplies, coupled with the optimisation of patient registration and appointment processes. This could involve the integration of digital platforms for patient enrolment, scheduling, and record-keeping, which would streamline operations and reduce waiting times, while ensuring that the hospital's capacity aligns with the growing number of enrollees. Furthermore, regular assessments of service points, infrastructure, and human resource deployment should be conducted to identify and address bottlenecks in service delivery, thereby ensuring that NHIS enrollees can reliably access timely and effective healthcare.
- ii. To improve the affordability of healthcare services for NHIS enrollees, it is recommended that the scheme expand its benefit package to cover a wider range of essential drugs, diagnostics, and routine medical procedures, thereby reducing out-of-pocket expenditure for patients. Complementary measures should include ensuring timely reimbursement of healthcare providers by the NHIS, which would prevent cost-shifting to enrollees, and periodically reviewing contribution rates to maintain their

fairness and sustainability relative to prevailing economic conditions. Additionally, comprehensive awareness campaigns should be undertaken to educate enrollees on their entitlements under the scheme, thereby enhancing utilisation, reducing unnecessary personal spending, and fostering confidence in NHIS as an effective financial protection mechanism.

- iii. To strengthen the quality of healthcare service delivery under NHIS, it is recommended that the hospital invests in upgrading medical infrastructure, diagnostic technologies, and treatment facilities while simultaneously prioritising continuous professional development for healthcare providers. This would include targeted training programmes to enhance clinical competence, ethical practice, and patient engagement, complemented by a robust monitoring and evaluation framework to track service standards and performance outcomes. Moreover, strategic recruitment and retention of qualified medical personnel and specialists should be incentivised through career development opportunities and recognition schemes, ensuring that the hospital maintains a skilled workforce capable of delivering high-quality, patient-centred care and sustaining improvements in service delivery.

References

- Adebayo, S., & Arigbede, T. (2024). Health Insurance Reforms and the Quest for Universal Health Coverage in Nigeria: Policy Implications of the NHIA Act 2022. *Journal of Health Policy and Development Studies*, 9(1), 45–58.
- Adebayo, T., & Abubakar, M. (2024). Health Insurance Reform and the Quest for Universal Health Coverage in Nigeria: Policy Implications of the NHIA Act 2022. *African Journal of Health Policy and Systems*, 9(2), 45–59.
- Adebayo, T., & Hassan, R. O. (2024). Enhancing Healthcare Quality in Nigeria Through Performance Standards and Accountability Mechanisms. *African Journal of Health Management and Policy*, 10(1), 56–70.
- Adebayo, T., & Ibrahim, Z. M. (2023). Exploring Barriers to Healthcare Accessibility in Nigeria: Policy Implications for Universal Health Coverage. *African Journal of Public Health Policy*, 9(2), 47–63.
- Adebisi, Y. A., Okafor, U. C., & Danjuma, A. H. (2023). Strengthening Healthcare Systems and Service Delivery in Nigeria: A Pathway to Universal Health Coverage. *International Journal of Public Health and Health Systems*, 8(1), 22–36.
- Adekunle, A., & Vincent, A. (2025). Analysing the Determinants of Healthcare Insurance Uptake in Nigeria. *BMC Health Services Research*, 25, 13422.
- Adeniji, F. R., Adebayo, L. J., & Okafor, P. C. (2023). Health Insurance and Healthcare Utilisation in Nigeria: Evidence from Public Hospitals. *International Journal of Health Management*, 15(2), 81–94.
- Adepoju, P. (2022). Nigeria's New Health Insurance Law Aims for Universal Coverage. *The Lancet*, 399(10344), 2107–2108.
- Adesina, K. T., & Hassan, R. O. (2024). Bridging the Gap: Accessibility, Affordability, and Utilisation of Healthcare Services Under Nigeria's National Health Insurance Authority. *Journal of Health Policy and Development Studies*, 11(1), 29–45.
- Adesina, K. T., & Usman, M. B. (2024). Health System Reforms and Equitable Healthcare Service Delivery in Nigeria: The role of the National Health Insurance Authority. *African Journal of Health Policy and Development*, 10(2), 74–89.
- Adewale, B. T., & Oladipo, S. O. (2023). Evaluating the Coverage and Inclusiveness of the National Health Insurance Scheme in Nigeria. *Journal of Health Policy and Development*, 18(1), 27–39.
- Adewale, T., Uche, C., & Yusuf, M. (2021). Determinants of Healthcare Service Utilisation Among NHIS Enrollees in Southwest Nigeria. *BMC Health Services Research*, 21(3), 1–12.
- Adewole, D. A., Osungbade, K., et al. (2020). University College Hospital, Ibadan. Retrieved from PubMed Central.
- Alawode, G. O., & Adewole, D. A. (2021). *Assessment of the Design and Implementation Challenges of the National Health Insurance Scheme in Nigeria: A Qualitative Study Among Sub-National Level Actors, Healthcare and Insurance Providers*. BMC Public Health, 21, Article 124.
- Andersen, R. M. (1968). *A Behavioural Model of Families' Use of Health Services*. Chicago: Center for Health Administration Studies, University of Chicago.
- Andersen, R. M. (1995). Revisiting the Behave Enrollees' Knowledge and Satisfaction with National Health Insurance Scheme Services. Oral Model and Access to Medical Care: Does it Matter? *Journal of Health and Social Behavior*, 36(1), 1–10.

- Aregbesola, B. S. (2021). Factors Influencing the Implementation of National Health Insurance in Nigeria. *BMC Health Services Research*, 21(1), 635–642.
- Atinge, S., Stephen, R., Ajewole, G. A., Olajide, K., Dika, J., Obadiah, M., & Kane, K. (2024). Clients' Satisfaction with the Services of the National Health Insurance Scheme at Moddibo Adama University Teaching Hospital, Yola, Adamawa State. *Annals of Health Research*, 10(2).
- Becker, M. H., & Maiman, L. A. (1983). Socio-Behavioral Determinants of Compliance with Health and Medical Care Recommendations. *Medical Care*, 21(10), 852–875.
- Carpenter, C. J. (2010). A Meta-Analysis of the Effectiveness of Health Belief Model Variables in Predicting Behavior. *Health Communication*, 25(8), 661–669.
- Egbon, H. O., & Adekunle, S. A. (2022). National Health Insurance Scheme Services and Patient Satisfaction: The Nigerian Experience. *Health Economics and Management Review*, 4, 46–54.
- Ewulum, K., Abiodun, O. P., Ogunniyi, A. O., Ajani, O. F., Yashim, A. N., & Gwa, Z. T. (2022). Enrollees' Knowledge, Satisfaction and Barriers to Uptake of the National Health Insurance Scheme in Makurdi, Benue State. *MGM Journal of Medical Sciences*. 21(1), 635–642.
- Eze, O. I., & Chukwuma, I. F. (2024). Does Expanding Health Insurance in Rural Nigeria Result in Improved Health Outcomes and Poverty Reduction? *Journal of Global Health Economics & Policy*, 4, e2024007.
- Federal Ministry of Health. (2022). *National Health System Quality Improvement Strategy*. Abuja: Government of the Federal Republic of Nigeria.
- Ibirongbe, D. O. (2024). Patient Satisfaction with Quality of Care in NHIS Clinic in a Tertiary Teaching Hospital in South-West Nigeria. *Nigerian Medical Journal*. 7(3), 112–128.
- Ipinnimo, T. M., Abubakar, A., & Ojo, O. A. (2023). The National Health Insurance Authority Act 2022: Implications for Universal Health Coverage in Nigeria. *West African Journal of Medicine*, 40(2), 115–122.
- Kalu, E. O., & Eze, P. C. (2024). Dimensions of Healthcare Accessibility in Sub-Saharan Africa: Towards Inclusive and Digital Health Systems. *International Journal of Health Systems Research*, 8(3), 101–118.
- KPMG Nigeria. (2022). *Commentaries on the National Health Insurance Authority (NHIA) Act, 2021*. KPMG Advisory Services.
- National Assembly of Nigeria. (2022). *National Health Insurance Authority Act, 2022*. Federal Government Press.
- National Health Insurance Authority (NHIA). (2023). *Annual Report 2023*. Abuja: NHIA Press.
- Obelebra, P., & Adeniji, F. O. (2021). Utilisation of the National Health Insurance Scheme Among Federal Civil Servants in Rivers State, Nigeria. *Asian Journal of Social Health*, 15(3), 203–214.
- Obikeze, E. O., & Nnamani, O. (2022). Health Insurance Coverage and Health-Seeking Behaviour in Nigeria. *Journal of African Health Systems*, 19(2), 88–102.
- Obikeze, S. O., Okafor, U. C., & Eze, P. (2023). Strengthening Healthcare Financing Through Mandatory Health Insurance in Nigeria: The role of the NHIA. *Journal of Public Health and Social Policy*, 7(3), 112–128.
- Ogundipe, A. A., & Okafor, C. N. (2022). Health Insurance Coverage and Healthcare Utilisation in Nigeria: An Empirical Assessment of NHIS Beneficiaries. *African Journal of Economic and Policy Studies*, 8(2), 67–84.

- Ogunyemi, B. A., & Adewole, D. O. (2023). Affordability and Financial Protection in Healthcare Utilisation: Lessons from Nigeria's Health Insurance Reforms. *African Journal of Health Economics and Policy*, 9(2), 89–104.
- Okah, P. S., Okoye, U. O., Iyiani, C. C., Ebimngbo, S. O., Onalu, C. E., & Aghedo, G. U. (2024). *Knowledge, Accessibility and Utilization of the National Health Insurance Scheme (NHIS) Among Registered Employees of Federal Government Institutions in Ebonyi State: Lessons for Medical Social Workers*. *Social Work in Public Health*.
- Oladipo, F. A., & Hassan, R. O. (2024). Evaluating the Quality and Accessibility of Healthcare Service Delivery in Nigeria's Public Hospitals. *Nigerian Journal of Health Administration*, 11(1), 51–68.
- Onwujekwe, O., Uzochukwu, B., & Mbachu, C. (2023). Transitioning from NHIS to NHIA: Assessing Nigeria's Path Toward Equitable Health Financing. *African Journal of Health Economics*, 12(2), 89–103.
- Phillips, K. A., Morrison, K. R., Andersen, R., & Aday, L. A. (1998). Understanding the Context of Healthcare Utilization: Assessing Environmental and Provider-Related Variables in the Behavioral Model of Utilization. *Health Services Research*, 33(3 Pt 1), 571–596.
- Rosenstock, I. M. (1974). Historical Origins of the Health Belief Model. *Health Education Monographs*, 2(4), 328–335.
- Uguru, N., Ogu, U., Uguru, C., & Ibe, O. (2024). Is the National Health Insurance Scheme a Pathway to Sustained Access to Medicines in Nigeria? *BMC Health Services Research*, 24, Article 403.
- Uguru, N., Uzochukwu, B. S. C., Onwujekwe, O. E., & Ezeoke, O. P. (2024). Access, Affordability, and Availability of Essential Medicines in NHIS-Accredited Health Facilities in Nigeria: An Assessment of the “3As”. *BMC Health Services Research*, 24, 10827.
- Ulonna, I. C., & Adekeye, O. (2025). Challenges and Prospects of the National Health Insurance Scheme in Nigeria: A Qualitative Assessment Among Sub-National Actors. *Mediterranean Journal of Social Sciences*, 16(2), 55–67.
- Usman, A. T., & Ibrahim, M. K. (2022). Health Insurance and Financial Protection in Nigeria: Achievements and Challenges. *African Development Policy Review*, 14(2), 92–106.
- World Bank. (2023). *Nigeria: Strengthening Health Financing for Universal Health Coverage*. Washington, DC: World Bank Group.
- World Health Organization (WHO). (2021). *Universal Health Coverage (UHC)*. World Health Organization.
- World Health Organization (WHO). (2023). *Delivering Quality Health Services: A Global Imperative for Universal Health Coverage*. Geneva: WHO.
- World Health Organization (WHO). (2023). *Universal Health Coverage in Nigeria: Progress and Challenges*. Geneva: WHO Regional Office for Africa.