



EFFECTIVENESS OF THE NATIONAL HEALTH INSURANCE SCHEME (NHIS) IN IMPROVING ACCESS TO MATERNAL HEALTHCARE AMONG CIVIL SERVANTS IN FEDERAL TERTIARY INSTITUTIONS IN KOGI STATE, NIGERIA



Abdullahi, Ahmad Rufai

Postgraduate Student, Department of Sociology,
University of Ilorin, Ilorin, Nigeria
15-68mq001pg@students.unilorin.edu.ng | 08068363935

Raji, Abdullateef

Department of Sociology,
University of Ilorin, Ilorin, Nigeria
raji.al@unilorin.edu.ng | 08033593830

Abstract

Accessing quality maternal healthcare remains a critical public health concern in Nigeria, despite several policies and interventions introduced over the decades. The National Health Insurance Scheme (NHIS) was initiated to improve healthcare access and reduce out-of-pocket expenditure among Nigerians, particularly among public sector workers. Anchored in the Health Belief Model (Rosenstock, 1974) and Andersen's Behavioural Model of Health Services Utilisation (Andersen, 1995), this study examines the effectiveness of the NHIS in improving access to maternal healthcare services among civil servants in three federal tertiary institutions in Kogi State, Nigeria. Adopting a descriptive survey design within a concurrent mixed-method framework, the study focused on female civil servants of reproductive age enrolled in the NHIS. Quantitative data were collected from 351 respondents through structured questionnaires, while qualitative data were obtained through in-depth interviews with 20 female civil servants and three healthcare providers in NHIS-accredited facilities, with both strands collected simultaneously and merged at the point of interpretation. Quantitative data were analysed using descriptive statistics, Pearson Product Moment Correlation (PPMC), and regression analysis, while thematic analysis was deployed for qualitative responses. Findings showed a high level of awareness of the NHIS among respondents and a moderate-to-high improvement in access to maternal healthcare services. However, significant challenges such as limited coverage of certain maternal health services, administrative delays, and inadequate numbers of accredited health facilities persisted. All three null hypotheses were rejected at $p < .05$, confirming significant relationships between NHIS enrolment, awareness, and utilisation of maternal healthcare services. The study recommends expanded benefit packages, streamlined administrative processes, increased accreditation of health facilities, and sustained awareness campaigns to improve maternal health outcomes under the NHIS.

Keywords: National Health Insurance Scheme, Maternal Healthcare, Healthcare Access, Civil Servants, Kogi State, Nigeria, Health Insurance Utilisation

Introduction

Maternal health remains a fundamental dimension of public health and a sensitive aspect of measuring the quality, equity, and coverage of a nation's healthcare system (Adedokun et al., 2023). Globally, sustained efforts have been directed at reducing maternal mortality and expanding access to maternal healthcare services through targeted health policies, financing mechanisms, and programmatic interventions (Tijani et al., 2025). Despite these efforts, many

developing countries, including Nigeria, continue to face persistently high maternal mortality ratios, largely attributable to structural barriers that impede women's access to essential maternal health services due to limited financial resources, inadequate healthcare infrastructure, geographical remoteness, and the persistent reliance on out-of-pocket payments as the dominant mode of healthcare financing (Bashir & Ishaku, 2026).

In Nigeria, maternal mortality remains excessively high, considering the country's development status; the national maternal mortality ratio has been estimated at over 500 deaths per 100,000 live births, among the highest globally (National Population Commission [NPC] & ICF, 2024). Esan et al. (2023) highlighted that much of this burden is concentrated in states with weak healthcare systems and limited access to skilled birth attendants, antenatal services, and emergency obstetric care. Central to this problem are financial barriers, as many households are exposed to devastating health expenditures that discourage women from seeking professional medical care during pregnancy, childbirth, and the postnatal period. The effects of financial exclusion from maternal healthcare are profound, contributing directly to preventable maternal and neonatal deaths.

In Kogi State specifically, the picture mirrors this national concern. State-level health sector data indicate that maternal health indices in Kogi State remain below national aspirational targets, with uneven distribution of skilled birth attendance and antenatal coverage across the state's three senatorial districts, and with NHIS enrolment and accredited-facility density remaining comparatively low relative to more urbanised states (Kogi State Ministry of Health and Human Services, 2023; NPC & ICF, 2024). This state-specific evidence base, though still limited, underscores the urgency of examining how federally administered health financing mechanisms such as the NHIS are performing for civil servants resident in the state.

To ameliorate these systemic challenges, the Federal Government of Nigeria established the National Health Insurance Scheme (NHIS) in 1999, under the National Health Insurance Scheme Act, with the primary objectives of improving access to healthcare services and reducing the financial burden on citizens via risk-pooling mechanisms (Eze et al., 2024). The NHIS targets public sector employees, such as civil servants, as its primary beneficiary group, making them central to evaluating the scheme's utilisation and effectiveness. Civil servants represent not only a large and relatively identifiable enrolment base but also a segment of the population whose health outcomes have direct implications for public sector productivity and governance capacity (Adebiyi & Adeniji, 2021).

Maternal healthcare services such as antenatal care, skilled birth attendance, emergency obstetric care, and postnatal care are among the most critical determinants of maternal and neonatal outcomes. Health insurance schemes such as the NHIS are theoretically positioned to improve the utilisation of these services by removing or easing financial barriers while encouraging women to seek professional care at accredited health facilities. However, the translation of financial protection into actual improvements in maternal healthcare utilisation is not automatic and is mediated by a range of individual, institutional, and structural factors, a dynamic that this study interprets through the complementary lenses of the Health Belief Model (Rosenstock, 1974) and Andersen's Behavioural Model of Health Services Utilisation (Andersen, 1995).

In Kogi State, a predominantly agrarian state in Nigeria's North-Central geopolitical zone, the workforce is substantially composed of civil servants employed in federal and state institutions. Understanding the extent to which NHIS enrolment has translated into improved access to maternal healthcare services among this group is essential for evaluating the scheme's effectiveness and for informing targeted policy interventions. Despite several studies

examining health insurance and healthcare utilisation at the national level, limited empirical attention has been directed specifically at the effectiveness of the NHIS in improving maternal healthcare access among civil servants in states such as Kogi.

Concerns persist regarding the extent to which the NHIS has adequately improved access to maternal healthcare services among its beneficiaries. Qualitative and quantitative evidence from various parts of Nigeria, such as Tijani et al. (2025) and Kofoworola et al. (2025), suggests that enrollees continue to experience limited awareness of the full range of services available under the scheme, incomplete coverage of essential maternal health services, administrative and bureaucratic bottlenecks that delay service delivery, and a shortage of NHIS-accredited health facilities capable of providing specialised maternal care. These challenges limit the capacity of the NHIS to fulfil its stated objectives and contribute to its underperformance as a mechanism for improving maternal health outcomes. In Kogi State specifically, this situation is compounded by disparities in healthcare infrastructure, uneven distribution of accredited facilities, and variable levels of awareness among civil servants regarding their entitlements under the NHIS. This research gap limits evidence-based policy reform and understanding of the specific barriers that must be addressed to improve the maternal health impact of the NHIS in the state.

It is against this background that this study examines the effectiveness of the National Health Insurance Scheme in improving access to maternal healthcare among civil servants in three federal tertiary institutions in Kogi State, Nigeria. Specifically, the study assesses the level of awareness of the NHIS among civil servants, the extent to which the scheme has improved access to maternal healthcare services, and the key challenges that continue to constrain effective utilisation.

The study was guided by the following research questions:

- i. What is the level of awareness of the National Health Insurance Scheme among civil servants in federal tertiary institutions in Kogi State?
- ii. To what extent has the NHIS improved access to maternal healthcare services among civil servants in federal tertiary institutions in Kogi State?
- iii. What challenges affect the utilisation of maternal healthcare services under the NHIS among civil servants in federal tertiary institutions in Kogi State?

The following null hypotheses were tested in the study:

- i. H_{01} : There is no significant relationship between enrolment in the National Health Insurance Scheme and access to maternal healthcare services among civil servants in federal tertiary institutions in Kogi State.
- ii. H_{02} : The National Health Insurance Scheme has no significant effect on the utilisation of maternal healthcare services among civil servants in federal tertiary institutions in Kogi State.
- iii. H_{03} : There is no significant relationship between awareness of the National Health Insurance Scheme and the utilisation of maternal healthcare services among civil servants in federal tertiary institutions in Kogi State.

This study makes several theoretical, empirical, and policy contributions to the growing literature on health insurance and maternal health in Nigeria. Theoretically, the study extends the application of the Health Belief Model and Andersen's Behavioural Model to the assessment of insurance-mediated health-seeking behaviour, offering a framework for understanding how perceived benefits and barriers interact with institutional factors to shape maternal healthcare utilisation among insured populations. Empirically, the study fills a research gap by providing context-specific evidence on the effectiveness of the NHIS in

improving maternal healthcare access among civil servants in federal tertiary institutions in Kogi State, a population underrepresented in existing health insurance literature. The mixed-method design enriches the evidence base by combining statistical detail with experiential depth from in-depth interviews. From a policy standpoint, the findings offer practical recommendations for health administrators, policymakers, and insurance regulators seeking to strengthen NHIS implementation, and the study further serves as a reference for future researchers and practitioners engaged with health financing, maternal health policy, and social protection in Nigeria.

Theoretical Framework and Review of Related Literature

Maternal healthcare remains a significant aspect of public health and a key indicator of the effectiveness of a nation's health system (Adedokun et al., 2023). Globally, deliberate efforts have been directed at improving access to maternal healthcare services while reducing maternal mortality through sustained financing and programmatic interventions (Tijani et al., 2025). Despite these efforts, developing countries like Nigeria continue to face significant structural challenges in ensuring equitable access to quality maternal healthcare. These challenges emanate from factors such as financial constraints, inadequate healthcare infrastructure, and the persistence of high out-of-pocket payments, which discourage the utilisation of essential maternal health services (Bashir & Ishaku, 2026).

In Nigeria, the rate of maternal mortality remains largely high and concerning due to barriers that restrict timely access to skilled healthcare during pregnancy, childbirth, and the postnatal period (Esan et al., 2023). The cost of healthcare services constitutes the most critical of these barriers. Many households finance healthcare through direct out-of-pocket payments, which can be exhausting and frequently results in delayed or non-utilisation of maternal healthcare services (Bashir & Ishaku, 2026; Kofoworola et al., 2025). This financial burden significantly shapes health-seeking behaviour, as individuals are inclined to weigh the perceived benefits of seeking professional care against the anticipated costs, which are often prohibitive.

The introduction of the NHIS by the Nigerian government was aimed specifically at addressing this financial burden through a risk-pooling mechanism designed to improve equitable access to healthcare services (Eze et al., 2024). The scheme particularly targets public sector employees, especially civil servants, who constitute a large proportion of its enrollees (Adebiyi & Adeniji, 2021). By reducing the direct cost of healthcare encounters, the NHIS is expected to improve access to maternal healthcare services such as antenatal care, skilled delivery, emergency obstetric care, and postnatal services, all of which are essential for reducing maternal and infant mortality (Adedokun et al., 2023).

Empirical evidence on the effectiveness of the NHIS in improving healthcare access presents a mixed picture. Some studies, such as Adebiyi and Adeniji (2021), demonstrate that enrolment in health insurance significantly enhances utilisation of maternal healthcare services; they found that insured civil servants in Rivers State were more likely to access healthcare services compared to uninsured counterparts. Similarly, Tijani et al. (2025) reported that women covered by health insurance demonstrate higher rates of antenatal attendance and are more likely to deliver under skilled supervision in health facilities. Comparable patterns have been documented beyond Nigeria's borders: cross-national evidence from sub-Saharan Africa suggests that community-based and social health insurance schemes are consistently associated with higher rates of facility-based delivery and skilled birth attendance, though the magnitude of the effect varies with scheme design and the depth of the benefit package (Adisa, 2023; Odeyemi, 2014). These findings collectively suggest that when financial barriers are reduced,

individuals are more likely to perceive maternal healthcare services as accessible and to utilise them accordingly.

Nonetheless, the effectiveness of the NHIS is not solely determined by financial accessibility. Esan et al. (2023) observed that even among enrollees, utilisation of maternal healthcare services may remain suboptimal due to limited awareness of the scheme's benefits, bureaucratic challenges, and perceived inadequacies in service quality. Bashir and Ishaku (2026) further observed that partial coverage of certain maternal health services leads to continued out-of-pocket payments, which may discourage consistent utilisation. Nationally representative survey data corroborate this pattern, showing only marginal improvement in skilled birth attendance and a persistently high maternal mortality burden despite two decades of health-financing reform (National Population Commission [NPC] & ICF International, 2024). These findings underscore that healthcare utilisation is shaped not only by financial protection but also by beneficiaries' perceptions of service quality, reliability, and accessibility.

Structural and geographical factors further mediate access to maternal healthcare. In under-resourced states such as Kogi, disparities in healthcare infrastructure and uneven distribution of NHIS-accredited facilities can substantially limit the scheme's impact. Kofoworola et al. (2025) emphasised that the availability of healthcare facilities and skilled personnel is critical in determining whether insured individuals can effectively access maternal services. Broader health-systems scholarship on Nigeria similarly identifies chronic underinvestment in primary healthcare infrastructure, an uneven distribution of the health workforce, and weak referral linkages as structural constraints that blunt the effectiveness of health-financing interventions regardless of their design (Abiodun & Adebayo, 2022). Even when financial barriers are removed, poor infrastructure and long travel distances to health facilities may increase the perceived cost of accessing care, thereby depressing utilisation rates.

Awareness and health literacy regarding the NHIS also play a critical role in determining the scheme's effectiveness. Evidence such as Esan et al. (2023) suggests that many civil servants lack a comprehensive understanding of the range of services covered under the scheme, particularly those pertaining to maternal healthcare. This disparity diminishes the perceived benefits of enrolment and may lead to underutilisation of available maternal health services. Effective communication strategies and sustained health education campaigns are, therefore, vital to maximising the public health returns of the scheme.

The theoretical foundation of this study draws on the Health Belief Model (HBM), which postulates that individuals' health-related decisions are shaped by their perceptions of susceptibility to health threats, the perceived severity of those threats, the perceived benefits of taking preventive action, and the perceived barriers to that action (Rosenstock, 1974). Applied to the NHIS context, the model suggests that civil servants who perceive high susceptibility to maternal complications, recognise the severity of such complications, believe that NHIS-covered services offer effective protection, and perceive low barriers to accessing these services are more likely to utilise maternal healthcare under the scheme. External cues to action, including health education, provider advice, and awareness campaigns, further influence utilisation behaviour. The HBM is not without limitations for this application: the model was developed within a specific cultural context and centres individual perception, giving comparatively little weight to structural and economic constraints, such as facility scarcity or bureaucratic delay, that can override an individual's beliefs regardless of how favourably those beliefs are held (Champion & Skinner, 2008, as cited in psychological literature on the model's critique). This limitation is precisely why the study pairs the HBM with a complementary structural framework.

Andersen's Behavioural Model of Health Services Utilisation provides that complementary lens, distinguishing between predisposing factors (socio-demographic characteristics), enabling factors (health insurance coverage, income, proximity to facilities), and need factors (perceived and evaluated health needs) as determinants of healthcare utilisation (Andersen, 1995). The NHIS functions primarily as an enabling factor within this model, but its effectiveness is hinged on the presence of enabling structural conditions and the activation of predisposing factors. This dual theoretical framework situates the present study within established traditions of health behaviour research while accommodating the institutional complexity of health insurance in a developing-country context.

Overall, while the NHIS has made meaningful contributions towards reducing financial barriers to maternal healthcare access among civil servants in Nigeria, its effectiveness remains constrained by a combination of systemic, informational, and structural factors. The literature consistently indicates that improving maternal healthcare access requires not only financial protection through health insurance but also enhanced awareness, improved service quality, and strengthened healthcare infrastructure. Addressing these multifaceted challenges is essential for ensuring that the NHIS achieves its goal of improving maternal health outcomes among its beneficiaries, particularly in states such as Kogi where structural vulnerabilities are acute.

Research Methodology

Research Design

A descriptive survey design within a concurrent (convergent) mixed-method framework was adopted, integrating quantitative and qualitative strands that were collected simultaneously and independently before being merged at the point of interpretation. The quantitative component deployed structured questionnaires to obtain measurable data on awareness, access, and utilisation of maternal healthcare services under the NHIS. The qualitative component employed in-depth interviews with selected female civil servants and healthcare providers in NHIS-accredited facilities, conducted concurrently with questionnaire administration rather than sequentially. The two strands were analysed separately using their respective analytical techniques and then triangulated during interpretation, allowing statistical evidence to be corroborated and enriched by experiential accounts, thereby providing a comprehensive understanding of the effectiveness of the NHIS in improving access to maternal healthcare.

Area of Study

The study was conducted in Kogi State, situated in the North-Central geopolitical zone of Nigeria. The study focused on three federal institutions: Federal College of Education, Okene; Federal University Lokoja; and the College of Agriculture, Kabba. These federal institutions have a significant proportion of civil servants enrolled in the NHIS. Hence, these institutions were purposively selected on account of their sizeable workforce of NHIS-enrolled civil servants and their geographic spread across the state, which enhances the representativeness of the study for the federal civil service population specifically.

Population and Sample

The study population consisted of civil servants employed in the three selected federal institutions in Kogi State who were enrolled in the NHIS. The total workforce population across the institutions was approximately 2,886 staff. The sample size was determined using the Taro Yamane (1967) formula at a 95% confidence level and a 0.05 margin of error, expressed as:

$$n = N / [1 + N(e^2)]$$

where n is the required sample size,

N is the population size (2,886), and
e is the margin of error (0.05).

Applying the formula:

$$n = 2,886 / [1 + 2,886(0.05)^2] = 2,886 / [1 + 2,886(0.0025)] = 2,886 / [1 + 7.215] = 2,886 / 8.215 = 351.3$$

This yielded a minimum sample size of 351 respondents, which was adopted for the study. A proportionate stratified sampling technique was employed to distribute questionnaires across the three institutions in proportion to their respective workforce sizes, after which simple random sampling was used to select individual respondents within each institution.

For the qualitative component, purposive sampling was deployed in selecting 20 female civil servants who had utilised NHIS for maternal healthcare services and three healthcare workers employed in NHIS-accredited facilities. Selection was based on direct experience with NHIS-covered maternal services and willingness to participate in in-depth interviews.

Instrument for Data Collection

Data were collected using two instruments: a structured questionnaire and an in-depth interview guide. The questionnaire employed a four-point Likert scale (Strongly Agree = 4, Agree = 3, Disagree = 2, Strongly Disagree = 1) to measure respondents' awareness, access, and utilisation of maternal healthcare services under the NHIS. Content validity was established through expert review by faculty members in sociology and public health, who confirmed the appropriateness and adequacy of the items in capturing the study variables. Instrument reliability was assessed using Cronbach's Alpha coefficient; all subscales returned coefficients above 0.70, indicating acceptable internal consistency.

Method of Data Analysis

Quantitative data obtained from the questionnaires were analysed using descriptive statistics, including frequency distributions, mean scores, and standard deviations, to address the research questions. Inferential statistics, comprising Pearson Product Moment Correlation (PPMC) and simple linear regression analysis, were used to test the hypotheses at a 0.05 level of significance. A mean score of 2.50 and above was adopted as the decision benchmark, indicating agreement with survey items. Qualitative data from the interviews were analysed through thematic analysis, involving verbatim transcription, open coding, thematic categorisation, and interpretive synthesis.

Ethical Considerations

Ethical clearance for the study was obtained from the appropriate institutional research ethics committee prior to data collection. Permission to administer the questionnaire and conduct interviews was also sought from the management of the three participating institutions. All participants were informed of the purpose, procedures, and voluntary nature of the study, and written informed consent was obtained before questionnaire administration and interviews. Participants were assured of anonymity and confidentiality of their responses; questionnaires did not require personal identifiers, and interview transcripts were anonymised using participant codes rather than names. Participants were also informed of their right to withdraw from the study at any stage without penalty. Data were stored securely and used strictly for the purposes of this research.

Data Analysis and Results

Awareness of NHIS among Civil Servants (Research Question 1)

Table 1 presents the frequency, mean, and standard deviation distributions of respondents' awareness of the NHIS and its maternal healthcare provisions.

Table 1: Level of Awareness of NHIS among Civil Servants (n = 351)

Item	SA	A	D	SD	Mean	SD
I am aware of the existence of the NHIS and its benefits	180	110	40	21	3.27	0.87
I am aware that the NHIS covers maternal healthcare services	163	127	42	19	3.24	0.86
I know how to access maternal healthcare services under the NHIS	155	118	53	25	3.15	0.93
I am aware that NHIS reduces the cost of antenatal and delivery services	160	130	45	16	3.23	0.84
NHIS information campaigns have reached me at my workplace	140	115	65	31	3.04	0.99

Grand Mean = 3.19; Grand SD = 0.90. Source: Field Survey, 2026

The grand mean score of 3.19 (SD = 0.90), above the benchmark of 2.50, shows a high overall level of awareness of the NHIS and its maternal healthcare provisions among civil servants in the sampled institutions. Most respondents confirmed familiarity with the scheme and its coverage of maternal health services, though awareness of facility-level access procedures and the reach of NHIS information campaigns was comparatively lower, as reflected in the higher standard deviations recorded for those items. These findings suggest that while broad awareness exists, functional health literacy, which is the ability to translate awareness into informed utilisation, may require further strengthening.

Extent NHIS Has Improved Access to Maternal Healthcare (Research Question 2)

Table 2 reports respondents' assessments of the extent to which NHIS enrolment has improved their access to maternal healthcare services.

Table 2: Extent to which NHIS Has Improved Access to Maternal Healthcare (n = 351)

Item	SA	A	D	SD	Mean	SD
NHIS has made antenatal care more accessible and affordable for me	170	120	40	21	3.25	0.88
My NHIS enrolment facilitated access to skilled birth attendants during delivery	165	115	50	21	3.20	0.90
Postnatal care services have improved since I enrolled in the NHIS	150	130	51	20	3.17	0.89
The NHIS has reduced my out-of-pocket spending on maternal healthcare	158	122	48	23	3.18	0.91
NHIS has encouraged me to seek professional care during pregnancy	162	118	50	21	3.20	0.90

Grand Mean = 3.20; Grand SD = 0.90. Source: Field Survey, 2026

The grand mean score of 3.20 (SD = 0.90) reveals a moderate-to-high level of improvement in access to maternal healthcare services attributable to NHIS enrolment. Respondents affirmed enhanced access to antenatal care, skilled birth attendance, and postnatal services, as well as a reduction in out-of-pocket expenditure. The finding that enrolment encourages professional care-seeking behaviour is particularly significant, as it suggests that the NHIS is effectively shifting health-seeking patterns towards formal healthcare facilities.

Challenges Affecting Utilisation of Maternal Healthcare under NHIS (Research Question 3)

Table 3 presents respondents' assessments of the challenges that limit effective utilisation of maternal healthcare services under the NHIS.

Table 3: Challenges Affecting Utilisation of Maternal Healthcare under NHIS (n = 351)

Item	SA	A	D	SD	Mean	SD
There are too few NHIS-accredited facilities in my area	160	120	50	21	3.19	0.90
Administrative processes at NHIS facilities are slow and cumbersome	150	110	60	31	3.08	0.99
Some essential maternal health services are not covered by NHIS	170	100	50	31	3.16	0.98
I sometimes incur additional costs for drugs and tests not covered by NHIS	165	110	48	28	3.17	0.96
Long waiting times at accredited facilities discourage me from using NHIS services	155	115	55	26	3.14	0.95

Grand Mean = 3.15; Grand SD = 0.96. Source: Field Survey, 2026

The grand mean score of 3.15 (SD = 0.96) confirms that significant challenges persist in the utilisation of maternal healthcare services under the NHIS. The most prominent challenges are the limited number of accredited facilities, incomplete benefit coverage, and administrative bottlenecks. The finding that many beneficiaries still incur additional out-of-pocket payments for uncovered drugs and diagnostic tests is particularly concerning, as it suggests that the NHIS's financial protection function is only partially fulfilled in the area of maternal healthcare.

Hypothesis Testing

Table 4: Summary of Hypothesis Testing Results

Hypothesis	Statistical Test	Result	p-value	Decision
H ₀₁ : No significant relationship between NHIS enrolment and access to maternal healthcare	Pearson PPMC	$r = 0.62$ $df = 349$	$p < .05$	Reject H ₀₁
H ₀₂ : NHIS has no significant effect on utilisation of maternal healthcare services	Simple linear regression	$R^2 = 0.54$ $F(1, 349) = 408.61$, $p < .001$ Unstandardised B = 0.68, SE = 0.03 95% CI [0.61, 0.75] Standardised $\beta =$ 0.73	$p < .05$	Reject H ₀₂
H ₀₃ : No significant relationship between awareness of NHIS and utilisation of maternal healthcare	Pearson PPMC	$r = 0.58$ $df = 349$	$p < .05$	Reject H ₀₃

Source: Field Survey, 2026

For H₀₁, the Pearson correlation coefficient ($r = 0.62$, $df = 349$, $p < .05$) indicates a moderate-to-strong positive relationship between NHIS enrolment and access to maternal healthcare services. This result confirms that civil servants enrolled in the NHIS experience significantly better access to maternal healthcare services than they would without such enrolment, and the null hypothesis is rejected.

For H₀₂, regression analysis yielded an R^2 of 0.54, $F(1, 349) = 408.61$, $p < .001$, an unstandardised coefficient of $B = 0.68$ (SE = 0.03, 95% CI [0.61, 0.75]), and a standardised beta coefficient of $\beta = 0.73$, indicating that NHIS enrolment accounts for approximately 54% of the variance in maternal healthcare utilisation. The null hypothesis is rejected, confirming a statistically significant and substantive effect of the NHIS on maternal healthcare utilisation among civil servants in the sampled institutions.

For H₀₃, the Pearson correlation coefficient ($r = 0.58$, $df = 349$, $p < .05$) indicates a moderate positive and statistically significant relationship between awareness of the NHIS and utilisation of maternal healthcare services. The null hypothesis is rejected, underscoring the pivotal role of health literacy and scheme awareness as antecedents of utilisation behaviour.

Thematic Analysis of In-Depth Interviews

Qualitative data collected from 20 female civil servants and three NHIS healthcare workers were analysed thematically. Five core themes emerged from the data, as presented in Table 5.

Table 5: Thematic Analysis of In-Depth Interview Responses

Theme	Frequency	Illustrative Quotation	Interpretation
Financial burden reduction	18/20	“NHIS helped reduce the cost of antenatal visits and delivery significantly.”	NHIS substantially reduces out-of-pocket expenditure for maternity services.
Improved professional care-seeking	16/20	“Without NHIS, I would have considered using a traditional birth attendant.”	NHIS encourages facility delivery and professional maternal care.
Incomplete service coverage	12/20	“Some laboratory tests and prescribed drugs still require extra payment.”	Partial benefit coverage leads to residual out-of-pocket costs.
Administrative delays	10/20	“Paperwork and verification sometimes delay receiving treatment.”	Bureaucratic processes limit timely access to maternal healthcare.
Inadequate accredited facilities	15/20	“The few accredited hospitals are overcrowded and overstretched.”	Limited accreditation restricts beneficiary access and quality of care.

Source: Field Survey, 2026

The qualitative findings corroborate and enrich the quantitative results. The overwhelming majority of interview participants (18 of 20) acknowledged the positive role of the NHIS in reducing financial barriers, with several describing antenatal and delivery costs as “no longer a source of dread” once enrolment took effect. Sixteen of the 20 participants credited the scheme with shifting their care-seeking away from informal alternatives, reinforcing the quantitative finding that NHIS enrolment measurably increases facility-based delivery.

The theme of inadequate accredited facilities, raised by 15 of 20 participants, warrants deeper interpretive attention given its structural significance. Participants did not describe this merely as an inconvenience but as a recurring source of anxiety during pregnancy: several women reported travelling beyond their immediate locality to reach an accredited facility, and two described arriving in early labour only to find the maternity ward already at capacity. One of the healthcare workers interviewed corroborated this account, noting that a single accredited facility in her locality effectively serves the enrolment base of several institutions, producing patient loads that strain both staff and available bed space. This pattern suggests that the accreditation shortfall functions less as a background inconvenience and more as an active deterrent: beneficiaries who anticipate overcrowding may delay presentation or seek unaccredited alternatives, thereby forfeiting the very financial protection their enrolment is meant to guarantee. This reading extends the numerical frequency reported in Table 5 by showing that facility inadequacy interacts with, rather than operates independently of, the administrative delays and residual out-of-pocket costs that other participants described.

Similarly, the coverage-gap theme (12 of 20 participants) was frequently linked by respondents to specific service types, particularly diagnostic tests and prescribed drugs outside the standard maternal package, rather than to the scheme broadly. This specificity indicates that the NHIS's partial-coverage problem in maternal health is concentrated rather than diffuse, which has direct implications for the benefit-package reforms recommended later in this article. Administrative delays (10 of 20) were most often associated with verification procedures at the

point of service rather than with enrolment itself, suggesting that the bottleneck lies in facility-level processing rather than in scheme registration. Taken together, healthcare workers interviewed further noted that overcrowding at accredited facilities compromises the quality of maternal care delivered, raising concerns beyond mere access to issues of service adequacy and patient experience.

Discussion of Findings

The findings of this study present a nuanced picture of the NHIS's role in improving maternal healthcare access among civil servants in federal tertiary institutions in Kogi State, underscoring its effectiveness in financial protection and care-seeking facilitation while revealing persistent structural and administrative limitations that temper its public health impact. The high level of awareness recorded among respondents (grand mean = 3.19) is largely consistent with the findings of Adedokun et al. (2023), who emphasise that knowledge of health insurance benefits is a necessary precondition for utilisation. However, the relatively lower scores and higher standard deviations on items pertaining to facility-level access procedures and the reach of NHIS information campaigns suggest that awareness is uneven in its depth and distribution. While most civil servants know of the NHIS, their understanding of how to navigate the system to access specific maternal health services, especially emergency obstetric care and specialist referrals, appears less developed. This distinction between nominal awareness and functional health literacy has significant policy implications, as it suggests that generic awareness campaigns may be insufficient without complementary interventions targeting procedural knowledge and patient empowerment.

The moderate-to-high improvement in maternal healthcare access (grand mean = 3.20) reaffirms the NHIS's primary effectiveness as a financial protection mechanism. These findings align with Tijani et al. (2025), who found that insured women demonstrate higher rates of antenatal attendance and facility-based delivery, and with broader sub-Saharan African evidence linking health insurance coverage to improved skilled birth attendance (Adisa, 2023). The regression analysis ($R^2 = 0.54$) further establishes that NHIS enrolment is a substantial predictor of maternal healthcare utilisation, explaining over half of the observed variance. This finding confirms that the scheme is not merely symbolically beneficial but is generating measurable improvements in service utilisation at the individual level. The positive relationship between NHIS enrolment and access to skilled birth attendants and postnatal care in particular is significant, as these are the dimensions of maternal care most directly linked to reductions in maternal and neonatal mortality.

The qualitative finding that NHIS encourages professional care-seeking, as evidenced by the participant who noted that without NHIS she would have considered a traditional birth attendant, is especially noteworthy. It speaks to the scheme's potential not only in reducing financial barriers but also in reshaping health-seeking norms and attitudes among enrollees. This finding resonates with the Health Belief Model's concept of perceived benefits, which holds that individuals are more likely to adopt health-protective behaviours when they perceive tangible advantages in doing so. NHIS enrolment, in this context, functions as a structural enabler of health belief activation, though, consistent with the HBM's acknowledged limitations, this study also finds that perception alone does not guarantee utilisation where structural constraints such as facility scarcity intervene.

Nevertheless, alongside these positive outcomes, the study documents a significant cluster of challenges that constrain the NHIS's effectiveness in the domain of maternal healthcare. The finding that a substantial proportion of respondents continued to incur out-of-pocket payments for uncovered drugs, diagnostic tests, and specialist consultations is consistent with the

observations of Bashir and Ishaku (2026) and Esan et al. (2023), who document the persistence of partial coverage gaps as a critical limitation of the NHIS. This finding raises important equity concerns: the financial burden of uncovered services falls disproportionately on civil servants from lower income grades, potentially negating the financial protection benefits of enrolment for the most vulnerable beneficiaries.

Administrative delays and bureaucratic bottlenecks, reported by a significant proportion of respondents and corroborated by interview participants, represent a distinct but related dimension of the access problem. These delays are particularly consequential in the context of maternal healthcare, where timeliness of care is a critical determinant of obstetric outcomes. Delays in verification, authorisation, and documentation at NHIS-accredited facilities can translate directly into elevated risk of complications for pregnant women, underscoring the need to streamline administrative processes as a patient safety priority.

The limited number of NHIS-accredited facilities emerges as perhaps the most structurally entrenched challenge identified by this study. The qualitative finding that accredited facilities are frequently overcrowded and overstretched suggests that the current supply of accredited providers is insufficient to meet the demand generated by the civil servant enrolment base. This supply-demand imbalance not only reduces the quality of care delivered but may also deter utilisation, as beneficiaries who anticipate long waiting times or poor service quality may opt for non-accredited providers, defeating the purpose of enrolment. Kofoworola et al. (2025) similarly highlight the critical role of facility availability in determining whether insured individuals can convert their coverage entitlement into actual healthcare access, a pattern also documented in wider Nigerian health-systems literature on infrastructural constraints (Abiodun & Adebayo, 2022).

The statistically significant positive relationship between NHIS awareness and utilisation ($r = 0.58$, $p < .05$) reaffirms the importance of health communication as a lever for improving scheme effectiveness. This finding is consistent with Andersen's Behavioural Model of Health Services Utilisation, which identifies enabling factors such as insurance coverage and information as key determinants of healthcare seeking. The implication is that investments in NHIS awareness and health literacy, particularly regarding the specific entitlements available for maternal healthcare, have the potential to generate meaningful improvements in utilisation without necessarily requiring immediate changes to the benefit package or accreditation landscape.

Overall, the findings suggest that the NHIS is functioning as a meaningful but imperfect mechanism for improving maternal healthcare access among civil servants in the sampled federal institutions in Kogi State. Its effectiveness is real and statistically demonstrable but is moderated by structural deficiencies such as incomplete coverage, administrative inefficiency, and facility shortages that require coordinated policy attention. The concurrent mixed-method design of this study, which allowed quantitative findings to be contextualised and enriched by qualitative accounts collected in parallel, provides an empirical foundation for the evidence-based reforms discussed in the recommendations that follow.

Implications of the Study

The findings of this study carry implications across three domains. From a policy standpoint, the evidence of moderate-to-high improvement in maternal healthcare access attributable to NHIS enrolment provides an empirical basis for the continuation and expansion of the scheme within Nigeria's maternal health strategy. However, the persistence of structural and administrative challenges points to a need for continued reform of the NHIS regulatory and operational framework, particularly the expansion of the benefit package to encompass the full

continuum of maternal healthcare services and the digitisation of enrolment verification and claims processing to reduce bureaucratic delay.

From a practice standpoint, healthcare providers and NHIS facility administrators would benefit from investment in capacity strengthening to address the overcrowding observed at some accredited facilities, alongside the expanded accreditation of qualified providers in underserved areas and the adoption of patient-centred maternal care protocols, including streamlined admission procedures for emergency obstetric cases.

From a scholarly standpoint, this study contributes context-specific evidence from a North-Central Nigerian state to the growing body of empirical literature on health insurance and maternal healthcare in sub-Saharan Africa. The application of the Health Belief Model and Andersen's Behavioural Model offers a theoretically grounded framework for understanding the determinants of NHIS utilisation in low-resource settings, and future research should extend this inquiry to a comparative multi-state analysis, including a broader sampling frame that captures state civil servants alongside their federal counterparts.

Limitations of the Study

This study is subject to several limitations that qualify the interpretation of its findings. First, the study was restricted to civil servants in three federal institutions, Federal College of Education Okene, Federal University Lokoja, and the College of Agriculture Kabba, which excludes the considerably larger population of state civil servants in Kogi State. Findings and conclusions in this article therefore pertain specifically to federal civil servants and should not be generalised to civil servants in Kogi State as a whole. Second, the cross-sectional nature of the survey component limits the ability to draw firm causal conclusions about the relationship between NHIS enrolment and maternal healthcare utilisation over time; longitudinal designs would better capture how utilisation patterns evolve with duration of enrolment. Third, the qualitative sample, though purposively selected for relevance, was relatively small (20 female civil servants and three healthcare workers) and may not capture the full range of experiences among NHIS enrollees, particularly those who have disengaged from the scheme entirely. Finally, self-reported survey data are subject to social desirability and recall bias, which may have influenced responses regarding awareness and satisfaction with NHIS services. Future research should address these limitations through longitudinal designs, an expanded sampling frame inclusive of state civil servants, and triangulation with facility-level administrative data.

Conclusion and Recommendations

This study examined the effectiveness of the National Health Insurance Scheme in improving access to maternal healthcare among civil servants in three federal tertiary institutions in Kogi State, Nigeria. Drawing on data collected from 351 civil servants through structured questionnaires and in-depth interviews with 20 female civil servants and three healthcare workers, the study employed a concurrent mixed-method approach to generate a comprehensive understanding of the NHIS's maternal health impact within this population.

The findings indicate that the NHIS is a statistically significant and practically meaningful enabler of maternal healthcare access and utilisation among the civil servants sampled. High levels of awareness of the scheme, combined with documented improvements in antenatal care access, skilled birth attendance, and postnatal service utilisation, affirm the NHIS's value as a health financing mechanism within this population. The rejection of all three null hypotheses, establishing significant relationships between NHIS enrolment, awareness, and maternal healthcare utilisation, provides empirical support for the scheme's positive association with maternal health outcomes in the sampled institutions.

However, the study equally demonstrates that the NHIS's effectiveness is substantially constrained by persistent structural deficiencies. Incomplete coverage of maternal health services, bureaucratic and administrative delays, inadequate numbers of accredited facilities, and residual out-of-pocket expenditures collectively limit the scheme's capacity to deliver equitable and comprehensive maternal healthcare to its intended beneficiaries. These limitations reflect systemic gaps in the design, implementation, and resourcing of the NHIS that warrant sustained policy attention, and they should be read alongside the scope limitations acknowledged above, particularly the restriction of the sample to federal civil servants.

The evidence generated by this study suggests that improved maternal health outcomes under the NHIS in Kogi State, and by extension in comparable Nigerian contexts, are likely to depend on a reformed and strengthened scheme, one that delivers more fully on its stated objectives of financial protection, comprehensive maternal health coverage, and accessible, quality care. On the basis of the empirical findings and their implications, the study advances the following recommendations.

- i. **Expansion of the NHIS benefit package:** The National Health Insurance Authority (NHIA) should review and expand the maternal health benefit package under the NHIS to ensure comprehensive coverage of antenatal care, skilled delivery, emergency obstetric care, postnatal services, and essential maternal medicines and diagnostics, thereby narrowing the persistent gap between enrolment and comprehensive financial protection identified in this study.
- ii. **Streamlining of administrative processes:** Administrative procedures governing access to maternal healthcare services at NHIS-accredited facilities should be simplified and digitised. The adoption of electronic health records, digital enrolment verification, and online pre-authorisation systems would reduce delays in processing and improve the timeliness of care, a critical consideration in obstetric emergencies.
- iii. **Expansion of NHIS-accredited facilities:** The NHIA, in collaboration with state ministries of health, should pursue the accreditation of additional healthcare facilities in Kogi State, with particular attention to primary and secondary care facilities in underserved areas.
- iv. **Sustained and targeted awareness campaigns:** Government agencies, institutional employers, and health authorities should develop and implement sustained, evidence-based communication campaigns tailored to the specific informational needs of NHIS enrolees, extending beyond general awareness to actionable guidance on accessing specific maternal health services and navigating the referral system.
- v. **Strengthening of healthcare infrastructure:** Continued investment in healthcare infrastructure, including facility upgrading, medical equipment provision, and healthcare workforce expansion, is warranted to ensure that reductions in financial barriers translate into actual improvements in the quality of maternal care available to NHIS beneficiaries, guided by evidence of geographic and demographic need.
- vi. **Periodic independent evaluation of NHIS effectiveness:** The NHIA should institutionalise periodic, independent evaluations of the NHIS's impact on maternal health outcomes across states and population subgroups, including state as well as federal civil servants, to generate the evidence necessary for adaptive policy reform and strengthened accountability.

References

- Abiodun, O. M., & Adebayo, A. A. (2022). Health system constraints and the implementation of federal health financing programmes in Nigeria: A structural review. *Nigerian Journal of Health Policy and Systems Research*, 6(2), 45–59.
- Adebiyi, O., & Adeniji, F. (2021). Factors affecting utilisation of the National Health Insurance Scheme by federal civil servants in Rivers State, Nigeria. *The Journal of Health Care Organization, Provision, and Financing*, 58, 1–10. <https://doi.org/10.1177/00469580211021876>
- Adedokun, S. T., Uthman, O. A., & Bisiriyu, L. A. (2023). Determinants of partial and adequate maternal health services utilisation in Nigeria: Analysis of cross-sectional survey data. *BMC Pregnancy and Childbirth*, 23(1), 1–15. <https://doi.org/10.1186/s12884-023-05410-3>
- Adisa, O. (2023). Community-based health insurance and maternal healthcare utilisation in sub-Saharan Africa: A comparative review. *African Journal of Health Economics*, 12(1), 18–33.
- Andersen, R. M. (1995). Revisiting the behavioural model and access to medical care: Does it matter? *Journal of Health and Social Behavior*, 36(1), 1–10. <https://doi.org/10.2307/2137284>
- Bashir, S. A., & Ishaku, S. G. (2026). Health worker familiarity with maternal mortality cause definitions in Kaduna State, Nigeria: A cross-sectional study. *Texila International Journal of Medicine*, 14(1), 22–31.
- Esan, O. T., Adeomi, A. A., & Afolabi, O. T. (2023). Health insurance coverage and access to maternal healthcare services by women of reproductive age in Nigeria: A cross-sectional study. *BMJ Public Health*, 1(1), e000482. <https://doi.org/10.1136/bmjph-2023-000482>
- Eze, O. I., Iseolorunkanmi, A., & Adeloye, D. (2024). The National Health Insurance Scheme (NHIS) in Nigeria: Current issues and implementation challenges. *Journal of Global Health Economics and Policy*, 4, e2024009. <https://doi.org/10.52872/001c.92387>
- Kofoworola, A., Olabisi, O., Salako, J., Sanaka, J., Samuel, R., & Bakare, O. (2025). “I went to the primary health centre close to my workplace, but their capacity cannot deliver the baby”: Exploring why women choose different providers for maternal health services in Nigeria. *BMC Pregnancy and Childbirth*, 25(1), 1–13. <https://doi.org/10.1186/s12884-025-06743-1>
- Kogi State Ministry of Health and Human Services. (2023). Kogi State strategic health development plan progress report. Government of Kogi State.
- National Population Commission (NPC), & ICF. (2024). Nigeria Demographic and Health Survey 2023–24: Key indicators report. NPC and ICF.
- Odeyemi, I. A. O. (2014). Community-based health insurance programmes and the National Health Insurance Scheme of Nigeria: Challenges to uptake and integration. *International Journal for Equity in Health*, 13, 20. <https://doi.org/10.1186/1475-9276-13-20>
- Rosenstock, I. M. (1974). Historical origins of the health belief model. *Health Education Monographs*, 2(4), 328–335. <https://doi.org/10.1177/109019817400200403>
- Tijani, B., Igbokwe, U., Filani, T., Adewemimo, A., & Ameyan, L. (2025). Improving access to and delivery of maternal healthcare services to prevent postpartum haemorrhage in selected states in Nigeria: A human-centred design study. *JMIR Human Factors*, 12, e52741. <https://doi.org/10.2196/52741>
- Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). Harper and Row.