Journal of Infrastructure Policy and Development 2026, 10(1), 026100012.
https://doi.org/10.24294/jipd026100012

Article

Implementation readiness for formal sector health insurance in a post-conflict setting: Evidence from civil servants in Borno state, Nigeria

Saleh Abba Kaza[1,2], Abba Elgujja[3,4,*], Inna Mohammed Alimi[5], Mustapha Mohammed Gubobe[4], Emanuel Ogwuche[6], Fatima Abba Elgujja[4,7]

[1] Kashim Ibrahim University, College of Medicine, Maiduguri 600213, Nigeria
[2] Borno State Contributory Health Insurance Agency, Maiduguri 600211, Nigeria
[3] King Saud University, King Saud Medical City, Riyadh 12372, Saudi Arabia
[4] Al-Ansar University, Faculty of Law, Maiduguri 600001, Nigeria
[5] Borno state Hospitals Management Board, Maiduguri 600211, Nigeria
[6] Department of Family Medicine, Federal Medical Centre Keffi, Keffi 961101, Nigeria
[7] Huaiyin Institute of Technology, School of Computer Science and Software Engineering, Huaiyin 223003, China
*** Corresponding author:** Abba Elgujja, elgujja@yahoo.com

CITATION

Kaza S A, Elgujja A, Alimi I M, et al. (2026). Implementation readiness for formal sector health insurance in a post-conflict setting: Evidence from civil servants in Borno state, Nigeria. Journal of Infrastructure Policy and Development. 10(1): 026100012. https://doi.org/10.24294/jipd026100012

ARTICLE INFO

Received: 8 March 2026
Accepted: 16 April 2026
Available online: 6 May 2026

Abstract: Background: Formal sector contributory health insurance schemes are central to advancing universal health coverage in low- and middle-income countries. Their successful implementation depends on beneficiaries' knowledge, perception, and behavioural readiness, particularly among civil servants who often constitute the foundational population for such schemes in post-conflict settings. Methods: A cross-sectional survey was conducted among 321 civil servants in Borno State, Nigeria, using a structured questionnaire. Knowledge of the Formal Sector Contributory Health Scheme (FSCHS) was assessed using 16 items covering scheme components, benefits, and operational mechanisms. Perception was measured using 15 Likert-scale statements addressing affordability, accessibility, quality of care, and trust in scheme management. Descriptive statistics were used to summarise patterns in knowledge and perception. Results: The mean knowledge score was 6.24 ± 2.40 out of 16, indicating that respondents answered fewer than half of the knowledge items correctly on average. Although 68.0% of respondents crossed the predefined threshold for moderate knowledge, no respondent attained an excellent knowledge level. The mean perception score was 3.46 ± 0.52, with 58.8% expressing positive perceptions, 34.9% neutral perceptions, and 6.2% negative perceptions. Knowledge levels showed limited variation across socio-demographic and employment characteristics. Conclusion: Civil servants in Borno State demonstrate foundational awareness and generally positive perceptions of the FSCHS; however, important gaps remain in depth of understanding and confidence. The substantial proportion of respondents with neutral perceptions represents a critical implementation threshold that may influence uptake. Strengthening targeted beneficiary education, trust-building measures, and gender-responsive engagement strategies will be essential for improving uptake and ensuring the sustainability of the scheme.

Keywords: health insurance; health financing; civil servants; knowledge; perception; Nigeria

1. Introduction

Contributory health insurance is a primary mechanism for pooling risk and achieving universal health coverage (UHC) by reducing out-of-pocket costs and improving service equity (World Health Organization, 2010). In low- and middle-income countries (LMICs), the formal sector, specifically civil servants, is often the strategic entry point for these schemes due to stable income and administrative

feasibility. However, existence and awareness alone do not guarantee success; enrolment and utilization depend heavily on beneficiaries' knowledge of benefit packages and trust in governance (Lagomarsino et al., 2012; National Health Insurance Scheme, 2018; Onoka et al., 2014).

Nigeria's health financing landscape shifted significantly with the transition to the National Health Insurance Authority (NHIA) framework (Aregbesola, 2023). This overhaul mandates coverage for all citizens, devolving operational responsibility to sub-national entities like Borno State (UHC2030, 2024). While national coverage reached 21.7 million (13%) by late 2025, significant gaps remain for state-level agencies to address (Federal Ministry of Health and Social Welfare, 2026; Ojoko, 2026). The success of these mandates depends on whether civil servants view state agencies as credible insurers rather than mere payroll extensions (Borno State Contributory Health Management Agency, 2024).

In Borno State, the Formal Sector Contributory Health Scheme (FSCHS) is managed by BOSCHMA. Despite established infrastructure, implementation occurs in a fragile, post-conflict environment where institutional trust is scarce (World Health Organization, 2025). The legitimacy is tested by the "first-mile" experience; opaque enrolment or provider access can convert workforce neutrality into active resistance (Federal Government of Nigeria, 2022). This mandatory environment is reinforced by 2025 federal directives requiring MDAs to present NHIA compliance certificates for procurement (Federal Ministry of Health and Social Welfare, 2026).

Understanding civil servants' readiness is critical for evidence-based implementation. Assessing knowledge and perception levels reveals whether awareness has translated into functional understanding and identifies systemic barriers to uptake. Consequently, this study assessed the knowledge and perception of the FSCHS among Borno State civil servants to generate context-specific evidence in strengthening health financing reforms and policy sustainability.

2. Methods

2.1. Study design

This study employed a descriptive cross-sectional design to assess knowledge and perception and examine socio-demographic variations in these outcomes of civil servants in Borno State regarding the Formal Sector Contributory Health Scheme (FSCHS). A cross-sectional approach was considered appropriate because the primary objective was to generate baseline evidence on beneficiary readiness at a defined point in time, rather than to establish causal relationships or measure longitudinal changes. This design is widely used in health financing and implementation research to inform early-phase policy decisions and programme rollout strategies.

2.2. Study setting

The study was conducted in Borno State, north-eastern Nigeria, within the state civil service system. Borno State is implementing a Formal Sector Contributory Health Scheme administered by the Borno State Contributory Health Management Agency (BOSCHMA), targeting the public sector employees across ministries, departments,

and agencies (MDAs). The scheme is designed to provide financial risk protection through payroll-based contributions and access to services from accredited healthcare providers.

The implementation context is characterised by post-conflict recovery, variable institutional capacity, and evolving public trust in government systems. These contextual factors informed both the study design and interpretation of findings, as beneficiary knowledge and perception are particularly salient determinants of implementation success in fragile and post-conflict settings.

2.3. Study population

The study population comprised civil servants working across selected Ministries, Departments, and Agencies (MDAs) in Borno State. Eligible participants included staff across junior, mid-level, and senior cadres who were actively employed at the time of data collection. Inclusion across multiple MDAs and employment levels was intended to capture diverse perspectives on the Formal Sector Contributory Health Scheme.

The study population comprised civil servants employed by the Borno State Government across different ministries, departments, and agencies (MDAs). To ensure a systematic representation across the entire civil service hierarchy, the study targeted participants from all 17 professional grade levels. These were categorized into three functional cadres: junior (GL 01–06), mid-level (GL 07–12), and senior (GL 13–17).

This stratification reflects the inherent diversity of administrative roles, income levels, and service experience within the state workforce, ensuring that the findings capture a broad spectrum of beneficiary perspectives.

2.3. Eligibility criteria

2.3.1. Inclusion criteria

- Civil servants currently employed by the Borno State Government
- Employment in any ministry, department, or agency under the state civil service
- Willingness to participate and provide informed consent

2.3.2. Exclusion criteria

- Contract staff or temporary workers not enrolled in the state civil service payroll system
- Civil servants absent during the data collection period
- Incomplete questionnaires with substantial missing responses

2.4. Sample size and sampling approach

Of the 350 questionnaires distributed, 321 civil servants returned and participated in the study, representing a 91.7% response rate. The sample size was considered adequate to provide reliable descriptive estimates of knowledge and perception across socio-demographic and employment characteristics. Given the study's operational nature and its integration within routine administrative structures, a pragmatic sampling approach was adopted. Specifically, purposive sampling was employed to

ensure representation from all 17 grade levels (GL 01–17) across three distinct functional categories: junior, mid-level, and senior cadres.

This approach allowed for the inclusion of respondents from multiple MDAs to ensure diverse representation across grade levels, educational backgrounds, and years of service. While administrative and security constraints in the post-conflict setting necessitated a non-probability design, this stratified purposive strategy was used to enhance the internal validity and policy relevance of the findings.

2.5. Data collection instrument

Data were collected using a structured, self-administered questionnaire developed specifically for the study, informed by prior health insurance knowledge–attitude–perception surveys conducted in Nigeria and similar settings (Uzochukwu et al., 2015; Onoka et al., 2014; Mohammed et al., 2013). The questionnaire comprised four main sections:

1. Socio-demographic and employment characteristics (age, gender, educational level, grade level, monthly income, and years of service)
2. Knowledge of the Formal Sector Contributory Health Scheme (scheme objectives, benefit package, contribution mechanisms, provider access, and operational processes)
3. Perception of the Scheme (affordability, accessibility, quality of care, trust in scheme management, and perceived value for money)
4. General awareness and exposure to scheme information

The questionnaire was designed to be completed within 15–20 min to minimise respondent burden and enhance completion rates.

2.6. Measurement of study variables

2.6.1. Knowledge of the FSCHS

Knowledge was assessed using 16 closed-ended items covering core elements of the scheme. Each correct response was scored 1 point, while incorrect or "don't know" responses were scored 0**,** yielding a maximum possible score of 16**.**

Knowledge items covered key domains, including scheme awareness, benefit entitlements, contribution mechanisms, provider access pathways, and administrative procedures.

Knowledge scores were categorised using predefined cut-off points:

- Poor knowledge: <40% of total score
- Moderate knowledge: 40–69%
- Excellent knowledge: ≥70%

This categorisation was adopted to distinguish between basic awareness and a more comprehensive understanding of scheme operations.

2.6.2. Perception of the FSCHS

Perception was assessed using 15 Likert-scale statements rated on a 5-point scale ranging from "strongly disagree" to "strongly agree." The statements addressed multiple dimensions of perception, including:

- Affordability of contributions
- Accessibility of services

- Perceived quality of care
- Trust in scheme management and governance
- Overall value for money

Mean perception scores were calculated for each respondent and categorised as:

- Positive perception
- Neutral perception
- Negative perception

2.7. Data collection procedure

Data collection was conducted during official working hours with the cooperation of relevant administrative units within participating MDAs. Respondents were informed about the purpose of the study, assured of confidentiality, and informed that participation was entirely voluntary. Questionnaires were distributed and collected in person to maximise response rates and reduce missing data.

The questionnaire was developed based on existing literature on health insurance awareness and perception in low- and middle-income countries. It was reviewed by subject experts for content validity and pre-tested among a small group of civil servants ($n \approx 20$) to ensure clarity and relevance. Internal consistency of the perception scale was assessed using Cronbach's alpha, which demonstrated acceptable reliability ($\alpha \geq 0.7$).

2.8. Data management and analysis

Completed questionnaires were checked for completeness and consistency before data entry. Data were analysed using standard statistical software.

Descriptive statistics were used to summarise respondents' characteristics, knowledge scores, and perception categories. Results were presented as frequencies, percentages, means, and standard deviations.

Descriptive analyses were conducted to examine patterns in moderate knowledge and perception of the Formal Sector Contributory Health Scheme across socio-demographic and employment characteristics, including age, gender, educational level, grade level, monthly income, and years of service.

Data were analysed using descriptive statistics and chi-square tests to examine associations between categorical variables. Statistical significance was set at $p < 0.05$.

Of the 321 respondents included in the study, 32 were excluded from the perception analysis due to incomplete Likert-scale responses (listwise deletion), resulting in a final analytic sample of 289 for perception-related results. This approach may introduce bias if excluded respondents differed systematically from those included; however, the proportion excluded was relatively small.

2.9. Ethical considerations

Institutional Review Board (IRB) ethical approval for this study was obtained from the Borno State Health Research Ethics Committee, Ministry of Health (Protocol No: MON/VOL.II/32/91 of 22nd October, 2025). Participation was voluntary, and informed consent was obtained from all respondents. Confidentiality and anonymity were strictly maintained.

Ethical principles of voluntary participation, confidentiality, and respect for persons were strictly observed. Participants were informed that their responses would be anonymised and used solely for research purposes. No personal identifiers were collected. Given the non-interventional nature of the study and its focus on organisational policy evaluation, the study posed minimal risk to participants.

3. Results

A total of 321 civil servants were assessed for knowledge of the formal sector health insurance scheme. Knowledge was measured using 16 items covering scheme components, benefits, and operational mechanisms. Each correct response was scored 1 point, while incorrect or "don't know" responses were scored 0, yielding a maximum possible score of 16. The mean knowledge score was 6.24 ± 2.40, with scores ranging from 0 to 8. Based on predefined cut-off points, 210 respondents (68.0%) demonstrated moderate knowledge, 99 (32.0%) had poor knowledge, while none attained an excellent knowledge level.

Although the majority of respondents crossed the predefined threshold for moderate knowledge, the mean score indicates that the average respondent answered fewer than half of the knowledge items correctly.

3.1. Socio-demographic and employment characteristics of respondents

A total of 321 civil servants participated in this study. Their socio-demographic and employment profiles, essential for understanding implementation readiness, are summarized in **Table 1**. The cohort was predominantly male (68.5%, $n = 220$), with 31.5% ($n = 101$) female representation. Educational attainment was high: 51.1% held a bachelor's degree or HND, 17.4% a master's, and 3.1% doctoral or fellowship qualifications.

Regarding employment, 51.4% ($n = 165$) occupied mid-level cadres (GL 07–12), 35.5% ($n = 114$) were senior staff (GL 13–17), and 13.1% ($n = 42$) were junior staff (GL 01–06). Income distribution revealed that 53.0% earned below 100,000 monthly, while 10.6% earned 300,000 or more. Service length was distributed broadly, with 28.7% having served under five years and 28.3% exceeding 20 years.

3.2. Knowledge of the Formal Sector Contributory Health Scheme

The majority of respondents (68.0%, $n = 210$) demonstrated moderate knowledge, while 32.0% ($n = 99$) had poor knowledge. Notably, no respondent achieved an excellent score. While the majority met the 40% threshold for moderate knowledge, the mean score of 39% indicates that the population is clustered at the lower bound of this category, reflecting a fragile grasp of operational details that remains highly susceptible to misinformation.

Table 1. Socio-demographic and employment characteristics of respondents (*n* = 321).

Variable	Category	Frequency (*n*)	Percentage (%)
Gender	Male	220	68.5
	Female	101	31.5
Educational Level	HND/Bachelor's degree	164	51.1
	Diploma/NCE	75	23.4
	Master's degree	56	17.4
	Others	11	3.4
	PhD/Doctorate/Fellowship	10	3.1
	Secondary education	5	1.6
Grade Level	Mid-level (GL 07–12)	165	51.4
	Senior level (GL 13–17)	114	35.5
	Junior level (GL 01–06)	42	13.1
Monthly Income	Below 100,000	170	53
	100,000–199,999	93	29
	200,000–299,999	24	7.5
	300,000 and above	34	10.6
Years of Service	Less than 5 years	92	28.7
	5–10 years	58	18.1
	11–20 years	80	24.9
	Above 20 years	91	28.3

To explore potential differences across groups, chi-square analysis was conducted. Overall, 68.0% of respondents demonstrated moderate knowledge, although the mean score remained low (6.24 ± 2.40), indicating limited depth of understanding. There was no statistically significant association between knowledge level and gender ($\chi^2 = 0.36$, df = 1, $p = 0.547$).

The distribution of respondents by knowledge category is summarised in **Table 2**, and the proportional distribution is shown in **Figure 1**.

Table 2. Knowledge Level of the Formal Sector Contributory Health Scheme.

Knowledge level	Frequency (n)	Percentage (%)
Poor	99	32
Moderate	210	68
Excellent	0	0
Total	321	100

NB: Poor: <40% of total score; Moderate: 40–69%; Excellent: ≥70%.

3.3. Perception of the formal sector contributory health scheme

Perceptions were generally positive but cautious. Most respondents (58.8%, *n* = 190) held positive views, while 34.9% (*n* = 112) remained neutral, and 5.9% (*n* = 19) expressed negative perceptions. The mean perception score was 36.6 out of 50 (73.2%).

This high neutrality rate (over one-third) suggests a "wait-and-see" attitude among the workforce, where future support depends on early implementation quality.

Similarly, the chi-square analysis revealed that a majority of respondents (58.8%) expressed positive perceptions of the scheme, while 34.9% were neutral and 6.2% negative ($\chi^2 = 4.14$, df = 1, $p = 0.042$). See **Table 3** and **Figure 2** for illustrations.

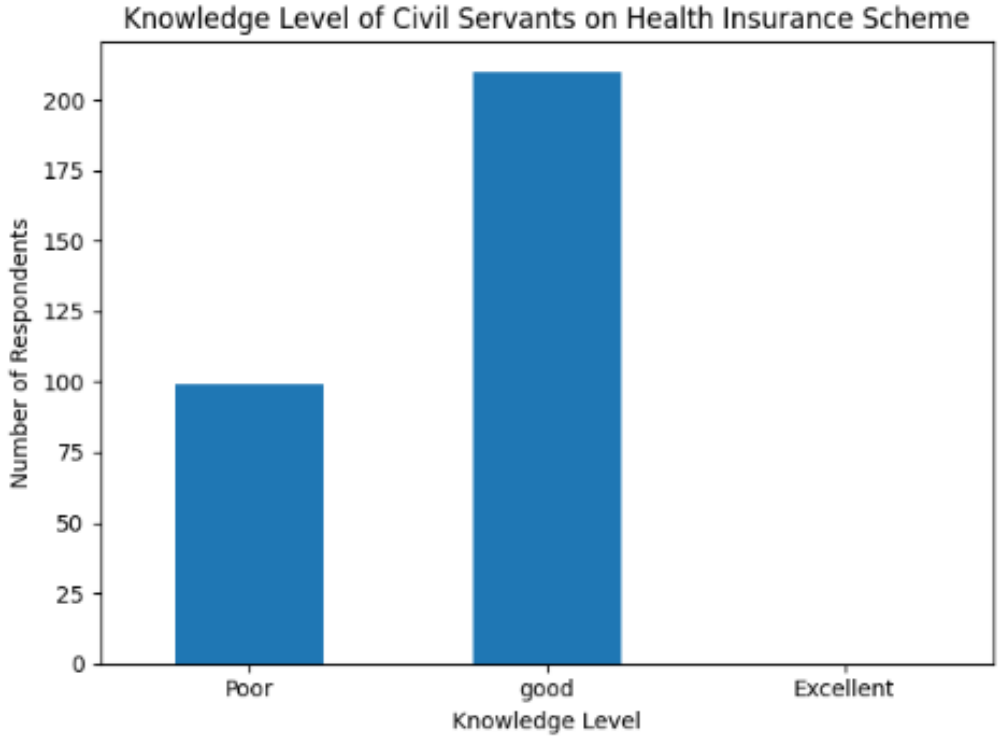

Figure 1. Knowledge level of civil servants on Health Insurance Scheme.

Table 3. Perception of the Formal Sector Contributory Health Scheme (n = 289).

Perception	Frequency (n)	Percentage (%)
Positive	170	58.8
Neutral	101	34.9
Negative	18	6.2
Total	289	100

Note**:** Thirty-two (32) respondents were excluded from the perception analysis due to incomplete Likert-scale responses.

3.4. Factors associated with knowledge and perception

Bivariate analysis examined the association between socio-demographic characteristics and levels of knowledge and perception. Gender was significantly associated with perception ($\chi^2 = 4.14$, df = 1, $p = 0.042$), with a higher proportion of females reporting positive perception (68.3%) compared to males (55.0%). No significant associations were observed between knowledge level and gender ($\chi^2 = 0.36$, df = 1, $p = 0.547$), education ($\chi^2 = 4.73$, df = 5, $p = 0.449$), or income ($\chi^2 = 0.93$, df = 3, $p = 0.817$). Similarly, education ($\chi^2 = 2.49$, df = 5, $p = 0.778$) and income ($\chi^2 = 3.22$, df = 3, $p = 0.359$) were not significantly associated with perception.

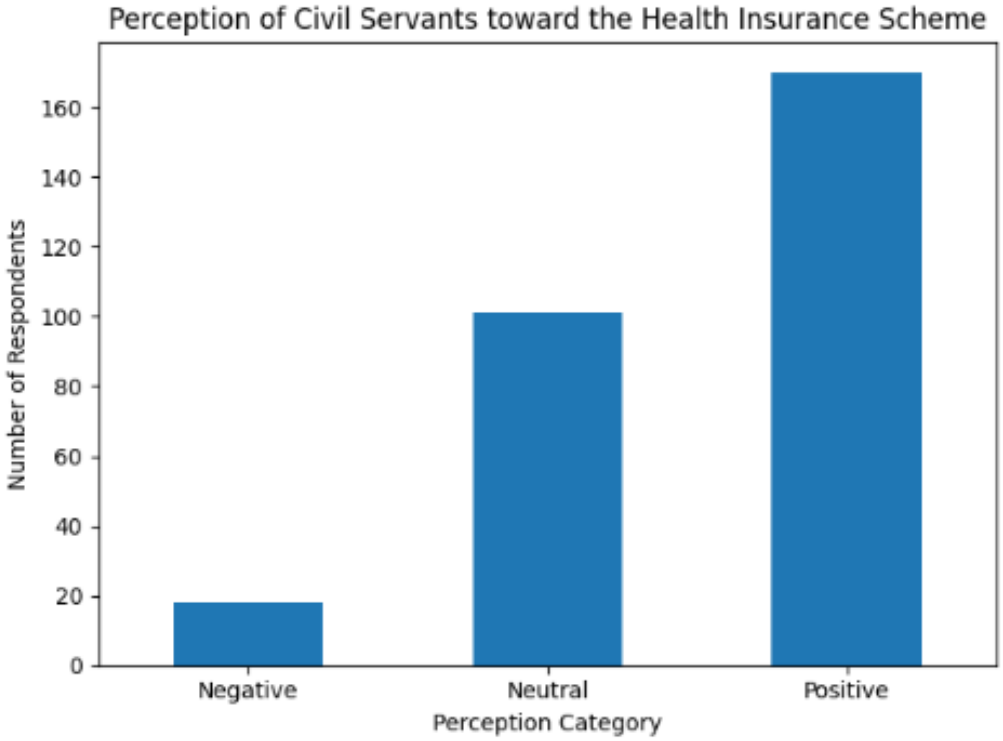

Figure 2. Perception of civil servants towards the Health Insurance Scheme.

Crucially, chi-square analysis showed no significant association between a respondent's knowledge level and their perception of the scheme ($\chi^2 = 1.20$, df = 1, $p = 0.54$). This suggests that the generally positive attitudes observed may not necessarily be linked to a detailed operational understanding of the scheme and may instead reflect broader expectations about the benefits of health coverage. Overall, socio-demographic factors showed limited influence on knowledge and perception patterns, except for gender in relation to perception.

3.5. Discussion

The findings reveal a critical paradox: widespread foundational awareness is undermined by a lack of operational depth. This pattern of moderate knowledge, coupled with cautious perception, suggests that implementation success in Borno depends more on service quality and trust-building than on demographic targeting. In this study, "knowledge" reflects both awareness of the scheme and understanding of its operational components.

3.5.1. Knowledge: Awareness without operational depth

While the majority of respondents were classified as having moderate knowledge, the mean score of 6.24 out of 16 (39%) suggests that the typical civil servant still lacks basic operational proficiency regarding the Formal Sector Contributory Health Scheme. In this context, 'moderate knowledge' should be understood as foundational awareness rather than functional understanding. This distinction is critical for implementation, as it indicates that awareness alone has not translated into adequate comprehension of scheme benefits, financing mechanisms, or access procedures. The absence of any respondent attaining an excellent knowledge level further underscores

the need for structured and sustained beneficiary education. This apparent contradiction reflects clustering of scores just above the minimum threshold for "moderate," indicating shallow rather than robust knowledge. Domain-level patterns showed that awareness of the scheme's existence was higher than understanding of operational elements such as contribution mechanisms and access procedures.

Similar patterns in Nigerian studies show that beneficiaries often possess surface-level information but remain uncertain about payroll deductions or referral processes (Federal Government of Nigeria, 2022; Gilson, 2003; Okoroh et al., 2018). This mirrors findings from Ghana, where insurance improved healthcare access only after beneficiaries understood their specific rights (Dalinjong & Laar, 2012). For BOSCHMA, bridging this "knowledge–action gap" is essential (Borno State Contributory Health Management Agency, 2024). Without clear and accessible operational information, the mandatory nature of the FSCHS risks being perceived as an arbitrary financial obligation rather than a social protection mechanism (World Health Organization, 2025).

3.5.2. Perception: Acceptance tempered by uncertainty

While perceptions were generally positive, over one-third of respondents were neutral. In health financing literature, neutrality often signifies cautious optimism or uncertainty rather than opposition (Gilson, 2003; Mohammed et al., 2013). This suggests that many civil servants are waiting for "first-mile" evidence of the scheme's value before forming a definitive judgment. This pattern may also reflect systemic optimism or a perceived need for financial risk protection, where beneficiaries express favourable attitudes toward health insurance despite limited operational understanding.

Early experiences disproportionately shape long-term trust in LMIC health settings (Federal Government of Nigeria, 2022; Okoroh et al., 2018). Positive early encounters can convert neutrality into acceptance, whereas delays or opaque entitlements may shift attitudes toward disengagement. For BOSCHMA, this implies that "readiness" will only translate into "retention" if the clinical experience meets beneficiary expectations.

3.5.3. Gender and socioeconomic drivers

Female respondents held more positive views (68.3%) than male respondents (55.0%), aligning with evidence that women, often managing family health needs, place a higher value on financial risk protection (Dalinjong & Laar, 2012; Uzochukwu et al., 2015). Men may view deductions through a transactional lens, as a reduction in take-home pay, rather than a strategic investment (UHC2030, 2024).

Messaging must therefore pivot to emphasize the FSCHS as a shield against catastrophic costs, which remain a primary driver of household poverty in post-conflict regions (World Health Organization, 2025). Furthermore, current analysis suggests that factors like bank account ownership and relative wealth remain decisive in a beneficiary's transition from awareness to participation (Adekunle & Oluwaseyi, 2025).

3.5.4. Behaviour and policy implications

The observed "conditional readiness" suggests that partial understanding may lead to underutilization. This apparent disconnect between knowledge and perception

may reflect underlying expectations about the protective value of health insurance, even in the absence of a detailed understanding of the scheme. In a post-conflict setting, implementation functions as a behavioural intervention; transparent communication and prompt grievance resolution are vital for legitimacy.

Policymakers should prioritize "visible early wins," such as timely provider accreditation and clear referral pathways, to convert the "swing population" of neutral enrolees into active supporters. As Nigeria strives for Universal Health Coverage, Borno's state-level success serves as a national benchmark for harmonizing legislative mandates with beneficiary education (Uzochukwu et al., 2015).

3.5.5. Strengths and limitations

This study provides implementation-relevant evidence from an underrepresented post-conflict setting. The use of structured analysis allows for a transparent assessment of readiness. However, the cross-sectional design and non-probability sampling limit causal inference and generalizability. While knowledge categories were defined "a priori," the mean score suggests that "moderate knowledge" should be interpreted as relative awareness rather than comprehensive proficiency.

The use of non-probability sampling limits generalizability, and findings should be interpreted as indicative rather than representative.

4. Conclusion

Civil servants in Borno State demonstrate a foundational awareness of the Formal Sector Contributory Health Scheme (FSCHS) that is not yet matched by operational proficiency. The complete absence of "excellent" knowledge scores and the high prevalence of neutral perceptions signal significant gaps in confidence and readiness for sustained engagement (Gilson, 2003; Mohammed et al., 2013; Uzochukwu et al., 2015). Successful implementation hinges on shifting from administrative rollout to active demand-side engagement (Aregbesola, 2023; World Health Organization, 2010). This requires structured education that provides enrolees with decision-enabling knowledge, coupled with trust-building measures like transparent communication and responsive grievance redress.

The observed gender differences emphasize that engagement strategies cannot be uniform; they must be responsive to the distinct trust dynamics and healthcare utilization patterns of both male and female beneficiaries (Okoroh et al., 2018; Uzochukwu et al., 2015). Although this study did not directly measure enrollment, the pattern of "cautious optimism" suggests that initial acceptance is conditional. Aligning early service performance with beneficiary expectations is essential to ensure that this transition evolves into long-term participation (Lagomarsino et al., 2012; Okoroh et al., 2018).

Notably, one-third of respondents holding neutral views represents a critical "swing population" whose eventual support will determine the scheme's viability. In a post-conflict context, this neutrality likely reflects a cautious appraisal of public institutions rather than indifference (Borno State Contributory Health Management Agency, 2024; National Health Insurance Scheme, 2018; Ozawa & Walker, 2009; World Health Organization, 2025). Targeted outreach and visible service responsiveness offer an opportunity to shift this cohort toward positive engagement.

Ultimately, the Borno experience adds a unique post-conflict perspective to Nigeria's sub-national health financing landscape. Mirroring successful phased approaches in states like Kwara, BOSCHMA must prioritize administrative transparency and continuous monitoring of enrollees (Kwara State Health Insurance Agency, 2019). As Nigeria pursues Universal Health Coverage, state-level success under the NHIA Act has become the new national benchmark. This study confirms that achieving UHC requires a synchronized effort that harmonizes legislative mandates with deep, beneficiary-level education (Uzochukwu et al., 2015).

Author contributions: AKS and IMA designed and conceptualised the study, MMG and FAE collected and statistically analysed the data. AAE drafted the manuscript while EO did the critical revisions. All authors reviewed and approved the final version.

Funding: This study was self-funded; no external funding was received.

Acknowledgements: We thank the Borno State civil servants for their participation and the Borno State Contributory Health Management Agency (BOSCHMA) for their cooperation.

Conflict of interest: The authors declare no competing interests.

Availability of Data: The datasets analysed are available from the corresponding author upon reasonable request, subject to confidentiality restrictions.

Ethics Approval and Consent: Approved by the Borno State Health Research Ethics Committee, Ministry of Health (Protocol No: MON/VOL.II/32/91 of 22nd October, 2025). All methods followed the Declaration of Helsinki. Written informed consent was obtained from all participants.

References

Adekunle, W., & Oluwaseyi, V. (2025). Analysing the determinants of healthcare insurance uptake in Nigeria. BMC Health Services Research, 25(1), 1310–1324.

Aregbesola, B. S. (2023). Enhancing the National Health Insurance Authority Act for universal health coverage in Nigeria. International Journal of Health Planning and Management, 38(1), 12–26.

Borno State Contributory Health Management Agency. (2024). BOSCHMA annual implementation report: Strategic health purchasing in post-conflict zones. Maiduguri, Nigeria: BOSCHMA Press.

Dalinjong, P. A., & Laar, A. S. (2012). The influence of health insurance on access to health care in Ghana. BMC Health Services Research, 12, 219.

Effiong, E., Adeyemi, O., Balogun, M., et al. (2025). Determinants of enrollment in social health insurance: A comparative study of six geopolitical zones in Nigeria. BMC Public Health, 25, 1217.

Eze, C. (2024). Inefficient service delivery and healthcare infrastructure: Barriers to NHIS uptake. RSIS International Journal of Research and Innovation in Social Science, 9(11), 4090–4099.

Federal Government of Nigeria. (2022). National Health Insurance Authority Act. Abuja, Nigeria: Government Printer.

Federal Ministry of Health and Social Welfare. (2026). State of health of the nation report: Progress under the Nigeria Health Sector Renewal Investment Initiative. Abuja, Nigeria: Federal Ministry of Health.

Gilson, L. (2003). Trust and the development of health care as a social institution. Social Science & Medicine, 56(7), 1453–1468.

Ichoku, H. E., & Fonta, W. M. (2009). Catastrophic healthcare financing and poverty: Empirical evidence from Nigeria. International Journal for Equity in Health, 8, 1.

Kwara State Health Insurance Agency. (2019). Formal sector health insurance implementation report. Ilorin, Nigeria: KSHIA.

Lagomarsino, G., Garabrant, A., Adyas, A., et al. (2012). Moving towards universal health coverage: Health insurance reforms in nine developing countries in Africa and Asia. The Lancet, 380(9845), 933–943.

Mohammed, S., Bermejo, J. L., Souares, A., et al. (2013). Assessing responsiveness of health services within a health insurance scheme in Nigeria. BMC Health Services Research, 13, 502.

National Health Insurance Scheme. (2018). Operational guidelines for health maintenance organisations. Abuja, Nigeria: NHIS.

Okoroh, J., Essoun, S., Seddoh, A., et al. (2018). Evaluating the impact of health insurance on access, quality, and financial protection in sub-Saharan Africa. Health Economics Review, 8, 13.

Onoka, C. A., Onwujekwe, O. E., Uzochukwu, B. S. C., et al. (2014). Constraints to universal coverage: Enrolment in social health insurance in Nigeria. Health Policy and Planning, 29(5), 535–545.

Ozawa, S., & Walker, D. G. (2009). Trust in the context of community-based health insurance schemes. Social Science & Medicine, 68(3), 510–517.

UHC2030. (2024). State of universal health coverage commitment: Nigeria country profile. Geneva, Switzerland: UHC2030 Partnership.

Uzochukwu, B. S. C., Ughasoro, M. D., Etiaba, E., et al. (2015). Health care financing in Nigeria: Implications for achieving universal health coverage. Nigerian Journal of Clinical Practice, 18(4), 437–444.

World Health Organization. (2010). Health financing for universal coverage. Geneva, Switzerland: World Health Organization.

World Health Organization. (2025). Global monitoring report on financial risk protection: Fragile and conflict-affected situations. Geneva, Switzerland: World Health Organization.