
**CONSUMERS' AWARENESS AND PERCEPTION OF THE
EFFECTIVENESS OF THE NATIONAL HEALTH INSURANCE
SCHEME IN HEALTHCARE DELIVERY: A CASE STUDY OF AKOKO
SOUTH WEST LOCAL GOVERNMENT AREA, ONDO STATE,
NIGERIA**

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ABSTRACT

The National Health Insurance Scheme (NHIS), now reformed under the National Health Insurance Authority (NHIA) Act of 2022, remains central to Nigeria's pursuit of Universal Health Coverage, yet consumer-level evidence on awareness and perceived effectiveness in rural communities remains limited, particularly since the 2022 reform. This study assessed consumers' awareness and perception of the effectiveness of the NHIS in healthcare delivery in Akoko South West Local Government Area (LGA), Ondo State, Nigeria. A descriptive cross-sectional survey design was adopted. The study population comprised adult residents aged 18 years and above in Akoko South West LGA. A sample of 200 respondents was selected through a multistage sampling technique (random selection of five communities, systematic random selection of households, and random selection of one eligible adult per household). Data were collected using a structured, expert-validated questionnaire covering socio-demographic characteristics, awareness of NHIS, factors influencing awareness and perception, and perception of NHIS effectiveness across Donabedian's Structure-Process-Outcome (SPO) dimensions; a pilot study produced a Cronbach's alpha of 0.78. Data were analysed descriptively (frequencies, percentages, means) and inferentially using Pearson Product-Moment Correlation at the 0.05 significance level.

Findings showed a generally high level of NHIS awareness (grand mean = 3.04), although awareness of the location of accredited NHIS facilities was comparatively lower (mean = 2.74). Information from healthcare workers was the most influential factor shaping awareness and perception (mean = 3.29; overall grand mean = 2.97). Respondents held generally positive perceptions of NHIS effectiveness across the structure (grand mean = 3.13), process (grand mean = 3.13), and outcome (grand mean = 3.26) dimensions, with 'Overall, NHIS is effective in healthcare delivery' recording the highest single mean (3.44). Pearson correlation analysis confirmed statistically significant, positive relationships between consumers' awareness and their perception of NHIS effectiveness ($r = 0.363$, $p < 0.001$), and between the factors influencing awareness and perception of NHIS effectiveness ($r = 0.428$, $p < 0.001$).

The study concludes that consumers in Akoko South West LGA have relatively high awareness and generally positive perceptions of NHIS effectiveness, although important gaps remain in access to facility-location information and in specific aspects of service delivery, including essential-medicine availability, registration simplicity, and waiting time. The study recommends that the NHIA strengthen public enlightenment on accredited facility locations, improve healthcare infrastructure and medicine availability, provide regular provider training, strengthen monitoring of accredited facilities, and reduce administrative delays and waiting times, providing evidence-based, LGA-specific guidance for rural health-insurance policy implementation in Nigeria and comparable sub-Saharan African settings.

KEYWORDS: National Health Insurance Scheme; consumer awareness; perception; healthcare delivery; health insurance; Structure-Process-Outcome model; Akoko South West; Nigeria.

1. INTRODUCTION

Universal Health Coverage (UHC), a principal goal promoted by the World Health Organization (WHO) and the World Bank, holds that all individuals and communities should have access to needed health services without suffering financial hardship (WHO, 2021). In developing countries, particularly in sub-Saharan Africa, social health insurance schemes are the primary mechanism through which this goal is pursued. In Nigeria, the National Health Insurance Scheme (NHIS), established by Decree 35 of 1999 and later reformed under the National Health Insurance Authority (NHIA) Act of 2022, was designed as the cornerstone of this effort, aiming to reduce Nigeria's persistently high out-of-pocket (OOP) health expenditure (Aregbeshola & Khan, 2020). The 2022 reform introduced the NHIA, an

expanded regulatory mandate over public and private insurers, a Vulnerable Group Fund to subsidise premiums for the poor and elderly, and a requirement that all states establish functional State Health Insurance Schemes (Ejughemre, 2022).

Despite these reforms and enrolment gains exceeding 21 million nationally, Nigeria has not achieved meaningful UHC: OOP spending remains dominant at approximately 70% of health expenditure, and the informal sector, comprising over 80% of the national workforce, remains largely uncovered (Odeyemi & Nixon, 2022). This coverage gap is intrinsically linked to consumer-level awareness and perception. Awareness extends beyond mere familiarity with the scheme's name to encompass understanding of the benefit package, enrolment procedures, and consumer rights (Nwakpa & Nwankwo, 2021); studies in rural Nigeria consistently report that awareness remains superficial, with many residents aware of the scheme's existence but unable to correctly describe covered services or enrolment procedures (Abdulraheem & Olapipo, 2020; Okafor & Ekwueme, 2024).

For consumers, 'effectiveness' is judged through a pragmatic, experiential lens: the availability of prescribed drugs, provider attitude, waiting time, and ease of access, rather than actuarial or claims-processing metrics (Onwujekwe et al., 2020). A negative perception of the scheme's value proposition, once formed, spreads through social networks and constitutes a primary deterrent to both voluntary enrolment and continued participation, independent of the scheme's technical soundness (Etiaba et al., 2021). This perception-reality gap is particularly acute in rural and semi-urban settings characterised by weaker health infrastructure and more fragile public trust in government-led initiatives.

Akoko South West Local Government Area (LGA) of Ondo State offers a compelling setting in which to examine this dynamic: a predominantly rural, agrarian community with a high concentration of informal-sector workers, served by a limited network of primary health centres, a general hospital, and private clinics, and situated at the intersection of federal NHIA policy and Ondo State's own contributory health scheme. Despite the NHIS/NHIA's more than two-decade history, there remains limited empirical evidence on how well consumers in this LGA understand the scheme and how they perceive the quality and effectiveness of services delivered under it, particularly in the post-NHIA Act era. This study addresses that gap. The specific objectives were to: (i) assess the level of awareness of NHIS among the people of Akoko South West LGA; (ii) identify the socio-demographic, institutional, and informational factors influencing awareness and perception; and (iii) evaluate people's perception of NHIS effectiveness in healthcare delivery using the structure, process, and outcome dimensions.

2. Literature Review and Theoretical Framework

2.1 Health Insurance, Consumer Awareness, and Perception

Health insurance is a financial risk-sharing mechanism through which prepaid contributions replace direct out-of-pocket expenditure, promoting equity because contributions are made according to ability to pay while services are received according to need (Onoka et al., 2020). The WHO (2021) identifies health insurance as a principal mechanism for achieving UHC, and countries with effective insurance systems generally show improved health outcomes and more equitable access than those relying predominantly on OOP payment (Darrudi, Ketabi, & Sadeghi, 2022). In Nigeria, however, over two decades of NHIS implementation left coverage concentrated among formal-sector workers, and the 2022 NHIA Act, while introducing important structural reforms, faces the fundamental challenge that legislation alone cannot guarantee consumer buy-in (Ejughemre, 2022; Balogun & Noe, 2023).

Consumer awareness constitutes the first stage in the health-insurance decision-making process, since individuals cannot rationally enrol in, or utilise, a scheme they know little about (Nwakpa & Nwankwo, 2021). Nigerian studies consistently report awareness gaps concentrated among rural, less-educated, and informal-sector populations: Abdulraheem and Olapipo (2020) found that in rural Kwara State, while 62% of respondents had heard of the NHIS, only 18% understood its benefits; Odeyemi and Nixon (2022) similarly found awareness concentrated among urban, educated, formally employed populations nationally; and Ogunleye et al. (2023), working within Ondo State specifically, found that rural LGAs, including Akoko South West, exhibited markedly lower awareness than urban LGAs. Andersen's Behavioural Model identifies education, income, occupation, and access to information as key enabling factors shaping such awareness (Akinyemi et al., 2021), and healthcare workers, alongside radio, television, and social media, are consistently identified as central information channels (Dutta & Hongoro, 2021).

Perception, distinct from awareness, reflects how individuals interpret and evaluate insurance services based on experience, trust, and social influence, and determines whether knowledge translates into acceptance and sustained participation. Perceived quality of care, particularly drug availability and provider attitude, strongly shapes perception (Onwujekwe et al., 2019, 2020); institutional trust, eroded by prior experience with delayed reimbursement, bureaucratic inefficiency, and poor accountability, further constrains uptake (Aregbeshola & Khan, 2018); and social influence through family, peers, and community leaders can amplify both positive and negative narratives about the scheme (Balogun & Noe, 2023). Etiaba et al. (2021) found that dissatisfaction with provider experience, rather than premium cost, was the

principal driver of voluntary disenrolment from a state health insurance scheme in Anambra State, underscoring that perceived service quality outweighs financial considerations in shaping continued participation.

2.2 Effectiveness of the NHIS: Access, Financial Protection, and Quality

NHIS effectiveness is multidimensional. Regarding access, insured individuals are more likely to seek formal medical care, particularly for primary healthcare, than uninsured persons (Ibiwoye & Adeleke, 2008), though this benefit remains concentrated in the formal sector. Regarding financial protection, a core objective of health insurance, NHIS has reduced catastrophic expenditure among enrolled beneficiaries in principle (Adebayo, Uthman, & Wiysonge, 2018), but partial coverage, limited benefit packages, and informal charges continue to erode this protection in practice (Okonkwo & Obikeze, 2022). Regarding quality, delayed provider reimbursement produces care rationing, prescription limitation, and informal charges (Onoka et al., 2016), while inadequate staffing, drug stock-outs, and limited diagnostic equipment continue to affect service consistency (Onwujekwe et al., 2020). Regarding equity, urban populations remain more likely to access accredited facilities and benefit from coverage than rural populations, who face distance, facility shortages, and lower awareness (Onoka et al., 2013). Aregbeshola and Khan's (2020) systematic review concluded that weak regulation, poor governance, and Nigeria's persistently high OOP expenditure (over 70% of total health spending) together indicate that the scheme has not yet achieved its core financial-protection objective.

2.3 Research Gap

Despite an extensive literature, most existing Nigerian studies focus on urban populations, federal civil servants, or state-level analyses, with few examining rural LGAs such as Akoko South West, where residents depend predominantly on agriculture and informal economic activity. Most studies additionally examine awareness, perception, and utilisation separately rather than within a single analytical framework, and most predate the NHIA Act 2022, leaving limited empirical evidence on consumer awareness and perception under the new legal and institutional framework. Although Donabedian's Structure-Process-Outcome (SPO) model is widely applied internationally in healthcare quality assessment, few Nigerian studies have used it to evaluate NHIS effectiveness specifically within rural communities, and evidence on the role of traditional rulers, religious leaders, and community organisations in shaping rural NHIA awareness and perception remains limited. This study addresses these gaps by integrating awareness, socio-demographic and institutional factors, and SPO-based

perception of effectiveness within a single conceptual framework, using Akoko South West LGA as its empirical setting.

2.4 Theoretical Framework

This study is anchored on three complementary theories. The Health Belief Model (Rosenstock, 1966; Glanz, Rimer, & Viswanath, 2019) explains that an individual's decision to enrol in health insurance depends on perceived susceptibility to financial and health risk, perceived severity, perceived benefit of enrolment, and perceived barriers such as premium cost, a framework particularly relevant in Akoko South West given the area's economic precarity. Andersen's Behavioural Model of Health Services Use categorises influencing factors into predisposing factors (age, education, health beliefs), enabling factors (income, insurance knowledge, access), and need factors (perceived health status), guiding the analysis of factors influencing awareness and perception in this study. Systems Theory in Healthcare frames the NHIS as an interacting system of insurer (NHIA), providers, consumers, and regulators, in which a problem in one component, such as delayed provider reimbursement, propagates to affect others, such as consumer-perceived quality; this framework informs the study's recommendations, which target systemic rather than purely individual-level interventions.

3. MATERIALS AND METHODS

3.1 Research Design and Setting

A descriptive cross-sectional survey design was adopted, enabling the collection of quantitative data on awareness, perception, and associated factors at a single point in time. The study was conducted in Akoko South West Local Government Area, Ondo State, Nigeria, a predominantly rural LGA in the state's Northern Senatorial District, with healthcare services provided through primary healthcare centres, a general hospital, private hospitals, and community pharmacies operating under NHIA and Ondo State Contributory Health Commission (ODCHC) accreditation.

3.2 Population, Sample Size, and Sampling Technique

The target population comprised all adults aged 18 years and above resident in Akoko South West LGA (approximately 239,486 at the last census, National Population Commission, 2006), including both NHIS/NHIA enrollees and non-enrollees. A sample of 200 respondents was selected, considered adequate for descriptive cross-sectional survey research (Mugenda & Mugenda, 2003; Creswell & Creswell, 2018). A three-stage multistage sampling technique was applied: five communities (Oka-Akoko, Supare-Akoko, Oba-Akoko, Ayegunle-Akoko,

and Ikun-Akoko) were selected by simple random sampling; households within each community were selected by systematic random sampling; and one eligible adult respondent was selected per household by simple random balloting where more than one eligible adult was present. Forty respondents were proportionately allocated to each of the five communities (Table 1).

Table 1. Distribution of sampled respondents by community.

Community	Number of Respondents
Oka-Akoko	40
Supare-Akoko	40
Oba-Akoko	40
Ayegunle-Akoko	40
Ikun-Akoko	40
Total	200

Source: Field survey (2026).

3.3 Sources of Data and Research Instrument

Primary data were collected via a structured questionnaire, complemented by secondary data from textbooks, journals, NHIA/ODCHC policy documents, and WHO publications. The questionnaire, administered in English with Yoruba interpretation provided by trained research assistants where needed, comprised five sections: (A) socio-demographic characteristics; (B) consumers' awareness of the NHIS; (C) consumers' perception of NHIS effectiveness, assessed via Donabedian's Structure-Process-Outcome (SPO) model across structure (facilities, personnel, drugs), process (waiting time, provider attitude, registration, complaints), and outcome (access, expenditure, satisfaction, recommendation) dimensions; (D) utilization of NHIS services; and (E) factors influencing awareness and perception. Sections B, C, and E used a four-point Likert scale (Strongly Agree = 4 to Strongly Disagree = 1).

3.4 Validity and Reliability of the Research Instrument

Face and content validity were established through expert review by specialists in Health Information Management, Public Health, Health Policy, and Research Methodology at Achievers University, Owo, whose comments informed revisions to the instrument. Reliability was assessed through a pilot study among 20 adult residents of the neighbouring, non-study Akoko North East LGA; Cronbach's alpha analysis in SPSS version 29 yielded a coefficient of 0.78, exceeding the 0.70 acceptability threshold (Nunnally & Bernstein, 2021) and indicating acceptable internal consistency.

3.5 Data Collection Procedure

Following an introductory letter from the Department of Health Information Management and permission from community leaders and healthcare facility managers, two trained bilingual (English/Yoruba) research assistants administered the questionnaire face-to-face, retrieving completed copies immediately to minimise loss and ensure completeness.

3.6 Data Analysis

Data were coded and analysed in SPSS version 29. Descriptive statistics (frequencies, percentages, means, and standard deviations) summarised demographic characteristics and Likert-scale responses; a mean of 2.50 (the four-point scale midpoint) was adopted as the decision benchmark, with item means at or above this threshold interpreted as agreement/positive perception. Pearson Product-Moment Correlation (PPMC) was used to test both study hypotheses at a 0.05 significance level.

3.7 Ethical Considerations

Ethical approval was obtained from the Health Research Ethics Committee (HREC) of Achievers University, Owo, prior to data collection, with additional permission from selected healthcare facilities and community authorities. Participation was voluntary and informed consent was obtained from all respondents; no personal identifiers were collected, confidentiality was strictly maintained, and completed instruments and electronic data were stored on password-protected devices accessible only to the research team.

4. RESULTS

4.1 Demographic Characteristics of Respondents

Respondents were slightly more often female (54.0%) than male (46.0%), predominantly aged 28–37 years (34.5%), most commonly educated to secondary level (37.0%) or tertiary level (35.5%), and a majority (59.0%) were currently enrolled in the NHIS (Table 2).

Table 2. Demographic information of respondents.

Category	Option	Frequency	Percentage (%)
Gender	Male	92	46.0
	Female	108	54.0
Age	18–27 Years	52	26.0
	28–37 Years	69	34.5
	38–47 Years	45	22.5
	48 Years and Above	34	17.0
Educational Qualification	No Formal Education	19	9.5
	Primary	36	18.0
	Secondary	74	37.0

	Tertiary	71	35.5
NHIS Status	Enrolled	118	59.0
	Not Enrolled	82	41.0

Source: Field survey (2026).

4.2 Level of Awareness of NHIS

All ten awareness items recorded mean scores above the 2.50 benchmark, yielding a grand mean of 3.04, indicating generally high awareness. 'I have heard about NHIS/NHIA' recorded the highest mean (3.50), while 'I know where accredited NHIS facilities are located' recorded the lowest mean (2.74), still above the acceptance threshold but the weakest dimension of awareness measured (Table 3).

Table 3. Respondents' awareness of the National Health Insurance Scheme. (NHIS)

Item	SD	D	A	SA	Mean
I have heard about NHIS/NHIA.	4 (2.0%)	19 (9.5%)	51 (25.5%)	126 (63.0%)	3.50
I know the objectives of NHIS.	4 (2.0%)	23 (11.5%)	106 (53.0%)	67 (33.5%)	3.18
I know the benefits provided by NHIS.	2 (1.0%)	54 (27.0%)	80 (40.0%)	64 (32.0%)	3.03
I know how to register for NHIS.	4 (2.0%)	79 (39.5%)	59 (29.5%)	58 (29.0%)	2.85
I know that NHIS covers treatment in accredited hospitals.	0 (0.0%)	47 (23.5%)	86 (43.0%)	67 (33.5%)	3.10
I know my rights as an NHIS beneficiary.	4 (2.0%)	54 (27.0%)	98 (49.0%)	44 (22.0%)	2.91
I know that NHIS reduces out-of-pocket healthcare expenses.	2 (1.0%)	52 (26.0%)	73 (36.5%)	73 (36.5%)	3.08
I know where accredited NHIS facilities are located.	19 (9.5%)	45 (22.5%)	105 (52.5%)	31 (15.5%)	2.74
I know the services covered under NHIS.	10 (5.0%)	52 (26.0%)	78 (39.0%)	60 (30.0%)	2.94
I understand the enrolment requirements.	9 (4.5%)	52 (26.0%)	61 (30.5%)	78 (39.0%)	3.04
Grand Mean					3.04

Source: Field survey (2026). SD = Strongly Disagree, D = Disagree, A = Agree, SA = Strongly Agree.

4.3 Factors Influencing Awareness and Perception

All ten items measuring influencing factors exceeded the 2.50 benchmark (grand mean = 2.97). Information from healthcare workers recorded the highest mean (3.29), followed by

educational level (3.24), while religious organisations' contribution recorded the lowest mean (2.70) (Table 4).

Table 4. Factors influencing consumers' awareness and perception of NHIS.

Item	SD	D	A	SA	Mean
Information from health workers has improved my knowledge of NHIS.	4 (2.0%)	24 (12.0%)	83 (41.5%)	89 (44.5%)	3.29
Radio and television have helped me understand NHIS.	11 (5.5%)	49 (24.5%)	89 (44.5%)	51 (25.5%)	2.90
Social media has increased my awareness of NHIS.	5 (2.5%)	54 (27.0%)	76 (38.0%)	65 (32.5%)	3.01
Educational level influences awareness of NHIS.	13 (6.5%)	10 (5.0%)	94 (47.0%)	83 (41.5%)	3.24
Community leaders help create awareness about NHIS.	18 (9.0%)	63 (31.5%)	65 (32.5%)	54 (27.0%)	2.78
Income influences enrolment into NHIS.	22 (11.0%)	34 (17.0%)	86 (43.0%)	58 (29.0%)	2.90
Religious organisations contribute to NHIS awareness.	28 (14.0%)	51 (25.5%)	74 (37.0%)	47 (23.5%)	2.70
Distance to healthcare facilities affects enrolment.	2 (1.0%)	46 (23.0%)	96 (48.0%)	56 (28.0%)	3.03
Government awareness campaigns are adequate.	13 (6.5%)	43 (21.5%)	89 (44.5%)	55 (27.5%)	2.93
Family and friends influence my perception of NHIS.	11 (5.5%)	54 (27.0%)	65 (32.5%)	70 (35.0%)	2.97
Grand Mean					2.97

Source: Field survey (2026).

4.4 Perception of NHIS Effectiveness

4.4.1 Structure Dimension. All five structural-quality items exceeded the benchmark (grand mean = 3.13); accessibility of accredited hospitals recorded the highest mean (3.20) and essential-drug availability the lowest (3.00) (Table 5).

Table 5. Respondents' perception of the structural quality of NHIS healthcare services.

Item	SD	D	A	SA	Mean
NHIS-accredited facilities have adequate healthcare personnel.	8 (4.0%)	27 (13.5%)	90 (45.0%)	75 (37.5%)	3.16
Essential drugs are usually available.	0 (0.0%)	50 (25.0%)	100 (50.0%)	50 (25.0%)	3.00
Healthcare equipment is adequate.	4 (2.0%)	34 (17.0%)	92 (46.0%)	70 (35.0%)	3.14
Healthcare facilities are clean and conducive.	0 (0.0%)	32 (16.0%)	106 (53.0%)	62 (31.0%)	3.15
Accredited hospitals are easily accessible.	0 (0.0%)	28 (14.0%)	104 (52.0%)	68 (34.0%)	3.20
Grand Mean					3.13

4.4.2 Process Dimension. All five process-quality items exceeded the benchmark (grand mean = 3.13); adequacy of treatment explanation by providers recorded the highest mean (3.43) and respectful treatment of NHIS patients the lowest (2.97) (Table 6).

Table 6. Respondents' perception of the process quality of NHIS healthcare services.

Item	SD	D	A	SA	Mean
Waiting time before receiving treatment is reasonable.	5 (2.5%)	21 (10.5%)	94 (47.0%)	80 (40.0%)	3.25
Healthcare workers treat NHIS patients respectfully.	0 (0.0%)	36 (18.0%)	134 (67.0%)	30 (15.0%)	2.97
Registration procedures are simple.	0 (0.0%)	52 (26.0%)	100 (50.0%)	48 (24.0%)	2.98
Complaints are handled promptly.	5 (2.5%)	22 (11.0%)	140 (70.0%)	33 (16.5%)	3.01
Healthcare providers explain treatments adequately.	0 (0.0%)	14 (7.0%)	86 (43.0%)	100 (50.0%)	3.43
Grand Mean					3.13

4.4.3 Outcome Dimension. All five outcome-quality items exceeded the benchmark (grand mean = 3.26), the highest of the three SPO dimensions. 'Overall, NHIS is effective in healthcare delivery' recorded the highest mean (3.44), while satisfaction with services received recorded the lowest (2.96) (Table 7).

Table 7. Respondents' perception of the outcome quality of NHIS healthcare services.

Item	SD	D	A	SA	Mean
NHIS has improved access to healthcare.	0 (0.0%)	21 (10.5%)	79 (39.5%)	100 (50.0%)	3.40
NHIS has reduced my healthcare expenses.	12 (6.0%)	23 (11.5%)	109 (54.5%)	56 (28.0%)	3.05
I am satisfied with services received under NHIS.	2 (1.0%)	53 (26.5%)	97 (48.5%)	48 (24.0%)	2.96
I would recommend NHIS to others.	0 (0.0%)	22 (11.0%)	74 (37.0%)	104 (52.0%)	3.41
Overall, NHIS is effective in healthcare delivery.	0 (0.0%)	4 (2.0%)	105 (52.5%)	91 (45.5%)	3.44
Grand Mean					3.26

Source: Field survey (2026), Tables 5–7.

4.5 Test of Hypotheses

Hypothesis One tested the relationship between consumers' awareness of the NHIS and their perception of its effectiveness. Pearson correlation analysis produced a coefficient of $r = 0.363$ ($n = 200$, $p < 0.001$). Since $p < 0.05$, the null hypothesis was rejected, indicating a

statistically significant positive relationship: respondents with higher awareness tended to report more positive perceptions of NHIS effectiveness (Table 8).

Table 8. Pearson correlation between consumers' awareness and perception of NHIS effectiveness.

Variables	N	r-value	p-value	Decision
Awareness of NHIS	200	0.363	0.000	Significant
Perception of NHIS Effectiveness	200			

$p < 0.05$. Decision: H_{01} rejected.

Hypothesis Two tested the relationship between the factors influencing awareness and consumers' perception of NHIS effectiveness. A moderate, positive, statistically significant relationship was found ($r = 0.428$, $n = 200$, $p < 0.001$), and the null hypothesis was rejected: favourable factors such as access to information, educational level, and quality of communication were associated with more positive perceptions of NHIS effectiveness (Table 9).

Table 9. Pearson correlation between factors influencing awareness and perception of NHIS effectiveness.

Variables	N	r-value	p-value	Decision
Factors Influencing Awareness	200	0.428	0.000	Significant
Perception of NHIS Effectiveness	200			

$p < 0.05$. Decision: H_{02} rejected.

5. DISCUSSION

This study assessed consumers' awareness and perception of NHIS effectiveness in Akoko South West LGA. The finding of generally high awareness (grand mean = 3.04) is consistent with Abiola et al. (2019), who found relatively high NHIS awareness among patients attending a Lagos tertiary facility, and with Aregbeshola and Khan (2023), who identified awareness, educational attainment, and access to information as significant enrolment determinants among Nigerian informal-sector workers. That awareness of accredited facility locations recorded the weakest item score (mean = 2.74) corroborates Ogundeji et al. (2023), who identified inadequate policy awareness and weak communication as continuing barriers to health-insurance reform implementation in Nigeria, and points to a specific, actionable information gap distinct from general scheme awareness.

The finding that healthcare workers constitute the most influential source shaping awareness and perception (mean = 3.29) aligns with Dutta and Hongoro (2021) and reinforces the socio-

technical premise that provider-consumer interaction, not mass-media exposure alone, is central to health-insurance communication in this setting; this is consistent also with Obinna et al. (2024), who found that access to accurate information and quality of healthcare personnel significantly shaped Ebonyi State federal employees' perception of the NHIS. That religious organisations and community leaders recorded comparatively lower influence scores, despite the socio-cultural salience of these institutions in rural Yoruba communities noted by Balogun and Noe (2023), suggests either under-utilisation of these channels in current NHIA sensitisation strategy or a genuine information gap between institutional and interpersonal influence in this specific LGA.

The positive perception recorded across all three SPO dimensions, structure (3.13), process (3.13), and outcome (3.26), indicates that Akoko South West respondents perceive NHIS-accredited facilities as functioning reasonably well across infrastructure, service delivery, and results. This is broadly consistent with Opele and Adepoju (2024) and Ekwueme, Okonkwo, and Obikeze (2023), who similarly found favourable structural-quality perceptions among insured populations, and with Ojo, Adebayo, and Ogunleye (2023), who found that favourable facility conditions predict positive SPO-based perception among Lagos NHIS enrollees. Nonetheless, the comparatively lower scores for essential-drug availability (3.00), respectful treatment of NHIS patients specifically (2.97), simplicity of registration (2.98), and overall satisfaction (2.96), each still positive but the weakest items within their respective dimensions, echo the persistent, specific complaints (drug stock-outs, differential treatment of insured patients, administrative friction) documented nationally by Onwujekwe et al. (2019, 2020) and Etiaba et al. (2021). That these specific items recur as the weakest across multiple Nigerian studies, despite otherwise positive overall perception, suggests they represent a stable, generalisable set of service-quality priorities for NHIA quality-improvement efforts rather than artefacts particular to this LGA.

The statistically significant, positive relationship between awareness and perception of effectiveness ($r = 0.363$, $p < 0.001$) empirically confirms the pathway proposed in this study's conceptual framework and is consistent with Abiola et al. (2019) and UNICEF (2023), both of which identify awareness as a strong predictor of favourable attitudes toward, and willingness to utilise, health insurance. The somewhat stronger relationship between influencing factors and perception ($r = 0.428$, $p < 0.001$) suggests that the structural and informational conditions surrounding awareness formation, quality of communication, source credibility, and accessibility, carry additional explanatory weight beyond awareness alone, consistent with the World Health Organization's (2023) position that perception of health-

insurance systems is shaped jointly by awareness and by the quality, accessibility, and responsiveness of healthcare services. Together, these results indicate that improving awareness campaigns alone is unlikely to be sufficient; NHIA and facility-level interventions must simultaneously address the specific service-quality gaps identified (drug availability, provider treatment of insured patients, registration simplicity) if positive perception, and by extension enrolment and retention, is to be sustained and strengthened.

6. CONCLUSION

This study assessed consumers' awareness and perception of the effectiveness of the National Health Insurance Scheme in healthcare delivery in Akoko South West Local Government Area, Ondo State, and found that residents possess a generally high level of NHIS awareness alongside generally positive perceptions of scheme effectiveness across the structure, process, and outcome dimensions of healthcare quality, with more than half of respondents willing to recommend the scheme to others and agreeing that it is, overall, effective in healthcare delivery. At the same time, the study identified specific, persistent gaps, most notably limited awareness of accredited facility locations, and comparatively weaker perceptions of essential-drug availability, respectful treatment of insured patients, registration simplicity, and overall satisfaction, that constrain the scheme from realising its full potential in this community. Statistically significant positive relationships were confirmed both between consumers' awareness and their perception of NHIS effectiveness, and between the factors influencing awareness (information access, education, communication quality) and perception of effectiveness, demonstrating empirically that awareness and the conditions shaping it are mutually reinforcing determinants of how the scheme is perceived. The study concludes that sustaining and strengthening consumer confidence in the NHIS within Akoko South West LGA, and by extension comparable rural Nigerian LGAs, requires an integrated strategy that combines targeted public enlightenment on facility locations and services with concrete, systemic improvements in healthcare infrastructure, medicine availability, provider conduct, and administrative efficiency, rather than reliance on awareness-raising alone.

7. Recommendations

Based on the findings, the following five recommendations are made, each specifying the responsible party and the corresponding action:

1. The National Health Insurance Authority (NHIA), in collaboration with the Ondo State Contributory Health Commission (ODCHC): should intensify public enlightenment

specifically on the location and identification of accredited NHIS facilities and the services covered under the scheme, using healthcare workers, radio, television, social media, and community meetings, given that facility-location awareness recorded the lowest mean score (2.74) among all awareness items measured.

2. State and Federal Ministries of Health, in partnership with NHIA-accredited facility administrators in Akoko South West LGA: should strengthen healthcare infrastructure, equipment, and, in particular, the availability of essential medicines at accredited facilities, given that essential-drug availability recorded the lowest mean (3.00) among structural-quality items despite an overall positive structural perception.

3. Accredited healthcare facility management, in collaboration with the NHIA and professional health training bodies: should provide regular training for healthcare providers on patient-centred care, effective communication, and respectful, non-discriminatory treatment of NHIS patients specifically, given that respectful treatment of NHIS patients recorded the lowest mean (2.97) among process-quality items.

4. The NHIA Quality Assurance and Monitoring Directorate: should strengthen routine monitoring and supervision of accredited healthcare facilities in Akoko South West LGA to ensure sustained compliance with service-quality standards across structure, process, and outcome dimensions, rather than relying on periodic accreditation review alone.

5. Accredited facility administrators and the NHIA's facility-level operations team: should reduce administrative bottlenecks, simplify registration procedures, and shorten waiting times before treatment, given that registration simplicity (2.98) and overall satisfaction (2.96) recorded the lowest process- and outcome-dimension scores respectively.

8. Implications of the Study

The findings carry several practical and policy implications. First, because the relationship between awareness and perceived effectiveness, while statistically significant, is moderate in strength ($r = 0.363$), and the relationship between influencing factors and perceived effectiveness is somewhat stronger ($r = 0.428$), policy investment should not rely on awareness campaigns alone; NHIA resources are likely to yield greater returns when awareness-raising is paired with concrete service-quality improvements addressing the specific weak points identified in this study. Second, the identification of healthcare workers as the most influential information source, ahead of mass media and community/religious leadership, implies that provider-level communication training and point-of-care information delivery deserve at least as much policy attention as broadcast sensitisation campaigns,

particularly in rural LGAs with the media-access constraints documented by Balogun and Noe (2023). Third, the recurrence of specific service-quality weak points (drug availability, provider treatment of insured patients, registration simplicity) across the structure, process, and outcome dimensions, despite an overall positive perception, suggests these represent priority targets for NHIA quality-assurance interventions rather than incidental findings, since addressing them is likely to raise the ceiling on achievable consumer satisfaction more than further awareness investment alone. Fourth, for health-insurance research and practice in comparable Nigerian LGAs, the study demonstrates the practical value of applying the Donabedian SPO framework at the LGA level to disaggregate an otherwise favourable overall perception into specific, actionable structural, process, and outcome targets.

9. Contributions to Knowledge

1. Provision of one of the first empirically grounded, LGA-specific assessments of consumer awareness and perception of NHIS effectiveness conducted in the post-NHIA Act 2022 era, extending a literature that has previously concentrated on national, state-level, or pre-2022 evidence.
2. Empirical application of Donabedian's Structure-Process-Outcome model to disaggregate consumer perception of NHIS effectiveness into specific, comparatively ranked dimensions within a rural Nigerian LGA, identifying essential-drug availability, provider treatment of insured patients, and registration simplicity as priority targets for quality improvement despite an overall positive perception.
3. Statistical demonstration, through Pearson correlation analysis, that both consumer awareness and the broader informational/institutional factors shaping that awareness are independently and significantly associated with perceived NHIS effectiveness, providing quantitative support for an integrated (rather than awareness-only) model of health-insurance perception formation.
4. Integration of the Health Belief Model, Andersen's Behavioural Model, and Systems Theory into a single conceptual framework linking socio-demographic characteristics, awareness, perception, and (by extension) utilisation of health insurance, offering an analytical framework transferable to other rural Nigerian and sub-Saharan African LGAs implementing comparable social health insurance reforms.

10. Limitations of the Study

This study has several limitations. First, it relies on self-reported awareness and perception rather than objective verification (for example, of respondents' actual knowledge of covered services or facility locations), and social-desirability bias may have inflated some responses despite assured anonymity. Second, the cross-sectional design captures a single point in time and cannot establish causality between awareness, influencing factors, and perception, nor track how perception evolves following specific NHIA reforms or facility-level interventions. Third, although the multistage sampling technique provided reasonable representation across five communities, logistical constraints limited access to some remote wards within the LGA, and the study's findings are specific to Akoko South West and may not generalise without caution to other Nigerian LGAs with different infrastructural, economic, or cultural profiles. Fourth, the study combined both enrolled and non-enrolled respondents in assessing awareness and perception, which, while appropriate for the study's population-level objectives, means the perception findings partly reflect the views of respondents without direct personal experience of NHIS service delivery. Future longitudinal, multi-LGA, and mixed-methods studies, incorporating qualitative exploration of the specific service-quality gaps identified here, are recommended to build on these findings.

Author Contributions

Ogidi-Gabriel Taiwo: Conceptualisation, methodology, investigation, formal analysis, data curation, writing — original draft, writing — review and editing. T. T. Adebayo: Supervision, conceptualisation, validation, writing — review and editing. E. O. Oyekanmi: Co-supervision, methodology review, validation, writing — review and editing. All authors read and approved the final manuscript.

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Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Data Availability Statement

The datasets generated and/or analysed during the current study are available from the corresponding author on reasonable request, subject to institutional ethical approval and participant confidentiality safeguards.

Ethical Approval

This study was conducted in accordance with institutional ethical guidelines. Ethical approval was obtained from the Health Research Ethics Committee (HREC) of Achievers University, Owo, prior to data collection, and permission was obtained from relevant community authorities and healthcare facility management in Akoko South West Local Government Area. Informed consent was obtained from all individual participants included in the study.

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