NHIS awareness, accessibility, affordability, and patronage among selected Lagos State Owned Healthcare Facilities' Patients: Friedman Rank and Multiple Regression Tests

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Abstract

The study explored the nexus between National Health Insurance Scheme awareness, accessibility, affordability and patronage among selected patients in Lagos State-owned Healthcare Facilities. It examines how effectively and efficient is NHIS is contributing to a safer patient's life. The study adopted a structured questionnaire, with data collected from 151 respondents. A cross-sectional survey design jointly with double sampling techniques were adopted. The research utilised both qualitative and quantitative methods to gather evidence from selected patients in the Lagos State owned Healthcare Facilities., Friedman rank test and multiple regression techniques. The study revealed a rank order of both NHIS metrics and NHIS patronage metrics among selected patients in Lagos State owned healthcare facilities. The study further revealed the joint effect of NHIS awareness, accessibility, and affordability on the NHIS patronage among selected patients in Lagos State owned healthcare facilities. The study recommended that routine risk assessment within healthcare facilities to be able to identify potential hazards among patients and the hospital environments. The Lagos State Owned Healthcare Facilities should ensure effective and efficient utilization of the NHIS as a focal point to dampening the out-of-payment stress that are usually being experienced by hospital patients. The hospital management should ensure that technology is embraced to facilitate the usage of NHIS as full-time payment plan for all patients within the hospital. Insurance companies, especially, life insurers should ensure that there exists collaboration between them and the various healthcare facilities in Lagos State to enrich the patient's knowledge and accessibility of NHIS and its affordability.

Keywords: NHIS, awareness, accessibility, affordability, Patronage, Lagos

1. Introduction

The Decree 35 of 1999 created the National Health Insurance Scheme (NHIS) to guarantee that all Nigerians have equitable access to high-quality medical care (National Health Insurance Scheme, 2025). The Rural Community Social Health Insurance Program (RCSHIP), the Urban Health Self-employed Social Health

Insurance Program (USSHIP), and the Formal Sector Social Health Insurance

Program (FSSHIP) for employees in the formal sector were the three programs that consolidated the NHIS implementation, which started in 2002. The program's goals were to increase population access to high-quality healthcare services and offer universal health coverage (Eze *et al.,* 2024). The NHIS was created to provide fair healthcare for all residents as a policy reaction to the nation's notable health inequities and the financial strain of out-of-pocket costs (Akinyemi, *et al.,* 2021).

Despite being in existence for over two decades, awareness of the NHIS remains low in Nigeria, particularly in sub-urban areas and among the informal sectors. Previous studies have shown that a substantial section of the populace is uninformed of the actuality of the NHIS plans. Moreso access to healthcare services under the scheme remains a tedious task (Okafor & Are, 2020). In addition, administrative bottlenecks, lengthy wait times, and a lack of information on how to use the scheme deter people from seeking healthcare services through it (Bolarinwa et al., 2021). Adebola (2020) claims that many healthcare facilities, especially in sub-urban areas, are not accredited by the NHIS, which limits the options available to enrollees.

Furthermore, the cost of enrolling in the NHIS is sometimes prohibitive for many Nigerians, particularly those living below the poverty line (Eze, et al 2024). Although the government has introduced various cost-sharing models to make the scheme more affordable and reduce healthcare costs, out-of-pocket expenses, premiums, and co-payments still present financial challenges and this tends to affect the NHIS's objective of financial risk protection (Okafor & Are, 2020: Okewale *et al.,* 2024).

This study aims at examining the effect of NHIS awareness on NHIS patronage among selected patients in the Lagos State owned Healthcare Facilities, assessing the relationship between NHIS accessibility and NHIS patronage among selected patients in the Lagos State owned Healthcare Facilities, and evaluating the nexus between NHIS affordability and NHIS patronage among selected patients in the Lagos State owned Healthcare Facilities.

2. Literature Review

2.1 Conceptual Review

1. National Health Insurance Scheme:

The Nigerian government introduced the National Health Insurance Scheme (NHIS), a social health insurance program, in 1999 in accordance with Act 35 of

the 1999 Constitution. It was created to offer all Nigerians, especially the most vulnerable groups, equitable, reasonably priced, and easily accessible healthcare services. The program was created with the idea of risk sharing and solidarity in mind, whereby participant contributions are utilised to pay for healthcare services for all participants. However, the National Health Insurance Authority (NHIA) Act 2022, was aim to acquire health insurance for all Nigerians, and the implementation of state-level health insurance schemes; and enhance the scheme's financing and governance by raising public awareness and fortifying healthcare infrastructure and governance (Bolarinwa et al., 2021; Eze *et al.,* 2024).

Structure of the NHIS

i. The Formal Sector Program (FSP): This program covers workers in the organised private sector as well as those employed by the federal, state, and local governments. Employers and employees split the contributions.
ii. Informal Sector Program (ISP): This program focusses on farmers, artisans, independent contractors, and other people working in the unorganised sector. It functions through microinsurance initiatives and community-based health insurance plans.
iii. Vulnerable Group Program (VGP): This focuses on providing healthcare coverage for vulnerable populations, such as pregnant women, children under five, the elderly, and those living with disabilities. Funding for this program frequently comes from government subsidies and donor groups.
iv. The Tertiary Institutions Social Health Insurance Program (TISHIP): This provides access to healthcare services for students enrolled in postsecondary educational institutions.

2.2 The National Health Insurance Scheme: Awareness, Accessibility, and Affordability, and Patronage

The NHIA Act 2022 acknowledges that education and public awareness play a significant role in encouraging voluntary compliance and guaranteeing broad scheme participation. To inform Nigerians about the value of health insurance and the advantages of signing up for the program, the Act highlights the necessity of public awareness efforts (Eze, *et al* 2024). However, many Nigerians, particularly those living in sub-urban areas, are unaware of the advantages of the NHIS, indicating that awareness of the program is currently insufficient (Uguru, *et al*., 2024). Similarly, another factor affecting the awareness of NHIS is the climate of mistrust; many Nigerians have serious doubts about the program's efficacy and capacity to deliver high-quality healthcare services (Adebisi, et al 2020). While,

Adebola (2020) is of the opinion that focused education and awareness efforts is essential to fostering trust and boosting participation in the program.

The NHIS is designed to provide access to quality healthcare services for all Nigerians, regardless of their socio-economic status or location (NHIA, 2022). Nevertheless, the program's inaccessibility continues to be a major issue, especially in sub-urban areas. Furthermore, the unequal distribution of NHIS-accredited institutions throughout states makes the program even more inaccessible, and bureaucratic obstacles like drawn-out enrolment procedures and difficult claims procedures further compound the issue by discouraging potential participants (Abiola *et al.,* 2019). In order to improve accessibility, the government and other stakeholders must invest in infrastructure development, particularly in sub-urban areas (Fatile *et al.,* 2024). This includes equipping healthcare facilities, training healthcare workers, and assigning them to the facilities (Okafor & Are, 2020). Improving accessibility also requires removing administrative and financial obstacles and streamlining the enrolment process (Adebisi *et al.,* 2020).

In relation to the population's use of healthcare services, NHIS affordability continues to be a critical component of the program (Akinwode & Adewole, 2021). According to (Akinyemi *et al.,* 2021), a household's or individual's income level dictates whether they can afford NHIS premiums or choose to pay out-of-pocket. The high NHIS premium rate and the restricted scope of healthcare services it covers makes it sometimes unaffordable for formal sector workers who reside in suburban areas (Uguru, *et al*, 2024). The use of tiered premiums according to family and individual income levels will increase the scheme's affordability, claims (Abiola, et al 2019). Furthermore, broadening the scope of medical services that NHIS covers can lower out-of-pocket costs and increase the program's appeal to new members (Kofoworola *et al.,* 2020).

Since its establishment, the National Health Insurance Scheme (NHIS) in Nigeria has had a relatively low patronage rate (Adebisi *et al.,* 2020). This is primarily because the vast majority of its enrolees are people working for private companies or the government, which excludes a large segment of the population, including those in the informal economy, those who are self-employed, and the unemployed (Eze *et al.,* 2024). In contrast, many employees in the formal sector join the NHIS because it is partially funded by their employers, relieving them of some financial burden (Akinyemi *et al.,* 2021). Collaborating with important stakeholders in the

private sector will augment NHIS patronage, improve the quality of care under the plan, and bolster public confidence in it (Okafor & Are, 2020). In addition, the patronage level of the scheme will be enhanced by the implementation of flexible payment plans and subsidised premiums that are specifically designed for informal workers, self-employed individuals, and private organisations (Ameh *et al.,* 2021).

2.3 Theoretical Review

2.3.1 Risk Pooling Theory

This approach has been established and refined throughout time by numerous stakeholders in insurance, economics, and public health. Scholars like Adam Smith (1776), John Graunt (1662), and Karl Gunnar Myrdal (1956) have all contributed to the evolution of the idea over time. The theory asserts that healthcare costs are unpredictable and potentially catastrophic, rendering it challenging for individuals to manage expenses independently. Consequently, a risk pooling mechanism is proposed, wherein a substantial group of individuals, referred to as the "risk pool," contributes a predetermined sum, typically in the form of premiums, to a collective fund. The fund is subsequently utilised to cover the healthcare expenses of individuals who become ailing or injured.

This notion is an essential concept in health insurance, encompassing the National Health Insurance Scheme (NHIS). The fundamental concept of the risk pool's collective contributions being utilised to cover the healthcare expenses of those who require it provides a form of financial protection to individuals by distributing the risk of healthcare expenses across the entire risk pool. Additionally, the financial burden of healthcare expenses is alleviated, which enables individuals to access healthcare services more easily. Scholars such as Rothschild and Stiglitz (1976) have criticised the principle for its susceptibility to adverse selection, wherein individuals with a higher propensity for requiring healthcare, particularly those with chronic illnesses, frequently enrol in the scheme, while healthier individuals tend to opt out. This skews the risk pool, resulting in increased costs and jeopardising the sustainability of the insurance scheme.

Pauly (1968) asserts that moral hazard cases increase because people are more inclined to take risks or overuse healthcare services since they are shielded from the financial burden of medical bills. Musgrove (1996) contends that the concept of risk sharing necessitates effective governance, robust healthcare infrastructure,

and enough oversight. In economies characterised by poor institutions, corruption, mismanagement, and fraud, this can undermine risk-sharing processes. In addition, Normand & Weber (1994) asserted that risk pooling schemes frequently neglect the most vulnerable people (e.g., informal labourers, rural inhabitants) unless intentional subsidies or cross-subsidization mechanisms are implemented.

2.4 Empirical Review

Adebisi *et al.* (2019) investigated whether the National Health Insurance Scheme had fulfilled its intended aims. The study aims to evaluate the scheme's objectives and the extent of performance across different sectors. The study's findings indicated that the initiative has not yet fully realised its intended aims. The study suggested that scheme management should strive to enhance the program by increasing awareness, improving access to facilities, and cooperating with stakeholders to deliver inexpensive healthcare services.

Okafor and Are (2020) evaluated the awareness and accessibility of the National Health Insurance Scheme (NHIS) among patients in Lagos State. The study's findings indicated a significant level of awareness regarding NHIS; yet access to the program was challenging and cumbersome. The study implied that an increased number of hospitals should attain accreditation, hence enhancing access to the scheme.

Alawode and Adewole (2021) used a qualitative survey among national-level stakeholders, insurance entities, and healthcare practitioners in the suburbs to evaluate the implementation challenges of the National Health Insurance Scheme. The study looked at subnational actors' and stakeholders' perspectives on the Nigerian NHIS's design and implementation problems. The study's findings identified implementation issues such as limited awareness, superstitious beliefs, ineffective payment methods, medicine stockouts, and inadequate administrative and supervisory competence. The study concluded that in addition to creating a legal framework that requires enrolment in health insurance programs, awareness-raising efforts should be made to educate the public about the program.

Akinyemi *et al.* (2021) evaluated the perception and involvement of civil servants in the National Health Insurance Scheme in Ibadan. The research employed a quantitative methodology for data acquisition. The study's findings indicated a significant awareness of the scheme and participation in it. The study suggested that appropriate interventions should be implemented to eliminate obstacles in accessing, patronizing, and operating the scheme.

Eze *et al.* (2024) analysed the National Health Insurance Scheme (NHIS) in Nigeria, focussing on its challenges and execution. The study examined the multifaceted challenges of low enrolment rates, variable healthcare professional availability, and significant out-of-pocket expenses for citizens. The study's findings indicated that insufficient healthcare infrastructure, ineffective service delivery, and inadequate resource management had resulted in inferior care quality. The implications of the study were that a comprehensive discussion and strategic policy adjustment should be initiated to surmount these obstacles, thereby guaranteeing the Nigerian population adequate financial protection and the effective delivery of healthcare services.

3. Methodology

The study's goals were achieved using a cross-sectional survey approach. This design was chosen because it allowed for the collection of data from multiple people or events throughout the same period and at a single moment in time. This strategy was implemented to reduce biases in the study and maximize the accuracy of the data collected while minimizing the margin of error (Creswell & Creswell, 2018). The total number of patients in state-owned medical facilities in Lagos serves as the study's population. The people in this sampling frame were indeterministic, but the patients in Lagos State-owned medical institutions served as the sample frame. A double sample strategy consisting of convenience and purposive sampling was used in the study. The respondents were chosen for the purposive sample strategy according to their judgment and level of experience. Patients in Lagos State-owned healthcare institutions, particularly those in general hospitals, were chosen for convenience sampling based on their readiness and desire to participate. However, two hundred (200) copies of the questionnaire were distributed among selected patients in Lagos State owned Healthcare Facilities, in four (4) divisional areas of Lagos specifically, Badagry, Ikeja, Lagos Island, and Ikorodu due to respondents' proximity and accessibility. Out of the total copies of the questionnaire distributed, one hundred and fifty-one (151) copies were used for the data analysis after further scrutiny representing a response rate of seventy-six percent (76%).

The research instrument adopted in this study was structured questionnaire and was drawn based on the research objectives related to the study focus. The questionnaire was self-developed with respect to the notable constructs and variables researched. The choice of the survey approach was due to appropriateness to the proposed study design, its economic nature, and simplicity

in dissemination (Sallies *et al.,* 2021). In order to ensure validity and reliability, the construct and content validity of the questionnaire were examined and certified appropriate for the study; experts in health safety and insurance certified the questionnaire's content validity; a literature review supported the construct validity, which involved determining specific forms of knowledge, skills, and abilities; and a criterion-related validity, which involved consulting selected patients in other private healthcare facilities outside of the selected participants to ensure the accuracy and confirmation of the research's instrument and outcome. The research instrument's reliability was higher than the Cronbach alpha results of 0.70. For data analysis, both descriptive and inferential statistics were used. A straightforward frequency % backed by tabular representation was used for the descriptive analysis, and the Friedman rank test and multiple regression technique were used as inferential statistics.

4. Results and Discussions

4.1. Descriptive Analysis of Participants Responses

The examination of demographic factors and the results of the hypothesis testing are covered in detail in this section. To confirm or disprove the hypotheses, this step tests the developed hypotheses and summarizes the demographic factors.

Table 1: Participants' Demographic Data

Variable	Category	Frequency (%)
Gender	Male	45 (29.8%)
	Female	106 (70.2%)
Age	18 but less than 30 yrs	34 (22.5%)
	30 yrs but less than 40 yrs	39 (25.8%)
	40 yrs but less than 50 yrs	46 (30.5%)
	50 yrs but less than 60 yrs	32 (21.2%)
Educational Qualification	BSc/HND	92 (60.9%)
	Master's degree	23 (15.2%)
	Doctorate Degree	04 (2.7%)
	Professional Certificate	28 (18.5%)
	Others	04 (2.7%)

Source: *Field Survey (2024)*

Important information on the makeup of the group under study can be gleaned from the examination of demographic factors. With 29.8% identifying as male and 70.2% as female, the gender breakdown shows a well-balanced representation. A certain level of gender parity in the Lagos State-owned healthcare facilities is suggested by the large gender ratio among the chosen patients in the sample population. In terms of the sample's age distribution, the data shows a wide variety of ages. With 40.5 percent of participants under 50, the majority are between the ages of 40 and 50. The percentage of people in their 30s, but under 40s was 25.8%, and the percentage of people in their 18s but under 30s was 22.5%. For 50 years but less than 60 years, 21.1% was recorded. Significant percentages of respondents in the sample group had educational backgrounds that included BSc/HND accounting for 60.9 percent; followed by 18.5 percent recorded for those who held professional certificates. Master's degree holders accounted for 15.2 percent. 2.7 percent was recorded respectively for those respondents who held doctorate degree and other qualifications.

Table 2: Participants' Demographic Information

Variable	Response Label	Frequency	Percentages (%)
Years of being patients at Lagos State Owned Healthcare Facilities	Less than 5 yrs	32	21.2
	5 yrs but less than 10 yrs	61	40.4
	10 yrs but less than 15 yrs	52	34.4
	15 yrs & above	06	4.0
Are you aware of the National Health Insurance Scheme?	Yes	124	82.1
	No	27	17.9
Do you have any Health Management Organisation (HMO) managing your healthcare payment?	Yes	83	55.0
	No	68	45.0
Do you pay for healthcare delivery in Lagos State Owned Healthcare Facilities out of your pocket?	Yes	67	44.4
	No	84	55.6
Do you think having an HMO is better than making payment out of your pocket for healthcare service?	Yes	103	68.2
	No	48	31.8
How often do you think your HMO facilities should be useful in terms of healthcare request?	At times	43	28.5
	Many times	32	21.2
	Regularly	76	50.3
Do you have a knowledge of health insurance policies?	Yes	115	76.2
	No	36	23.8
Do you think health insurance can cater for your healthcare service request?	Yes	66	43.7
	No	85	56.3

Source: *field survey (2024)*

Additional information about other demographic factors can be found in Table 2. These figures provide insight into the makeup of the respondents, enabling insightful observations and analysis. The participants' responses as to 'years of

being patients at Lagos State Owned Healthcare Facilities' which revealed as follows 5 years but less than 10 years (40.4 percent); 10 years but less than 15 years (34.4 percent), less than 5 years (21.2 percent, and 15 years and above (4.0 percent). As to the awareness of the NHIS among patients, 82.1 percent recorded 'Yes', while 17.9 percent recorded 'No'.

Regarding the patients having an HMO managing their healthcare payment, 55.5 percent recorded 'Yes', while 45.5 percent recorded 'No'. Regarding the patients' payment of health delivery out of pocket, 55.6 percent recorded 'Yes', while 44.4 percent recorded 'No'. As concerning whether an HMO is better than making payment out of pocket for healthcare service, 68.2 percent recorded 'Yes', while 31.8 percent recorded 'No'. Regarding how often an HMO facility is useful, 50.3 percent recorded 'Regularly'. While 28.5 percent was recorded for 'At times', 21.2 percent was recorded for 'many time'. As regarding respondents' knowledge of health insurance policies, many responded 'Yes', while 23.8 percent recorded 'No'. AS regarding health insurance catering for healthcare service request, majority of the respondents indicated 'No' accounting for 56.3, while 43.7 percent was recorded 'Yes'.

4.2. Analyzing Research Variables Descriptively

Table 3: NHIS Metrics

Variables	Scale Level					Mean	Std Dev.
	SD	D	U	A	SA		
	1	2	3	4	5		
Awareness	23.8	8.6	6.0	47.7	13.9	3.19	1.432
Accessibility	14.6	44.4	8.6	19.9	12.5	2.72	1.288
Affordability	19.9	32.5	12.6	27.2	7.8	2.71	1.278

Source: *field survey (2024)*

The NHIS survey topics for which information was collected from all participants were affordability, accessibility, and NHIS awareness, as shown in Table 3 (Fig. 1). According to the participants' responses to the many questions, 32.4 percent disagreed with the statement regarding NHIS awareness, 6 percent were neutral, and 61.6 percent agreed. While 59 percent of responders said they did not support NHIS accessibility, 8.6 percent were unsure. 32.4 percent then backed it. Of all participants, 52.4 percent disagreed with NHIS affordability, 12.6 percent were undecided, and 35 percent agreed.

For every item examined, the results were corroborated by the mean and standard deviation scores. This suggests that the opinions of patients at Lagos State Owned Healthcare Facilities regarding the survey items were centered around the mean and regularly distributed. It is evident from the results of the descriptive statistics on NHIS metrics that all measures have the same decisions for every item in the distribution of participant viewpoints.

Figure 1: The Graphical Model provides an explanation on the National Health Insurance Scheme metrics among selected patients in Lagos State owned Healthcare Facilities

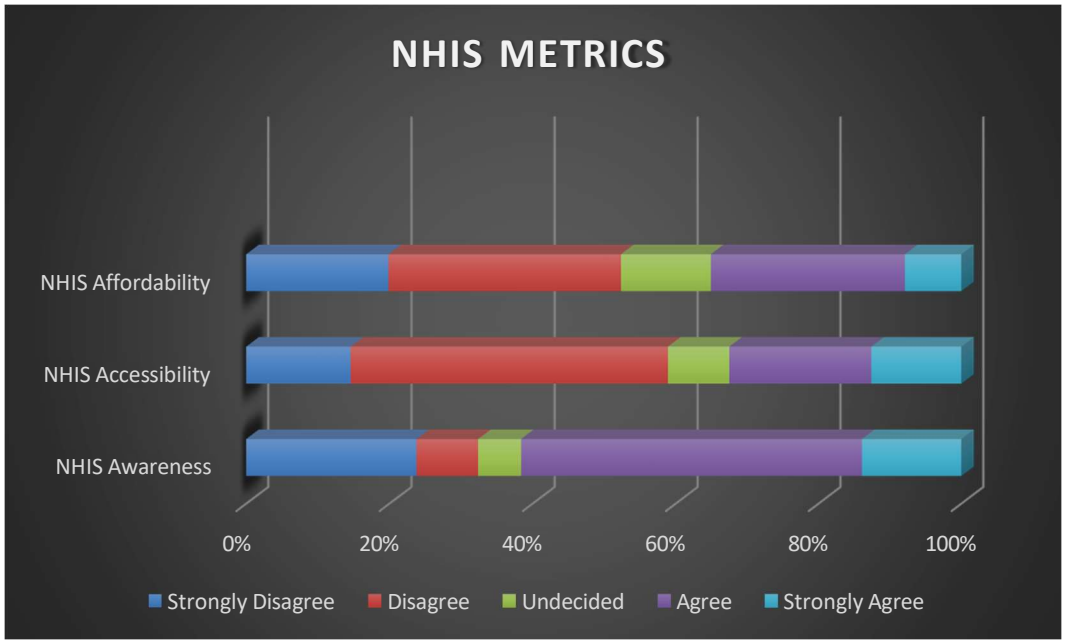


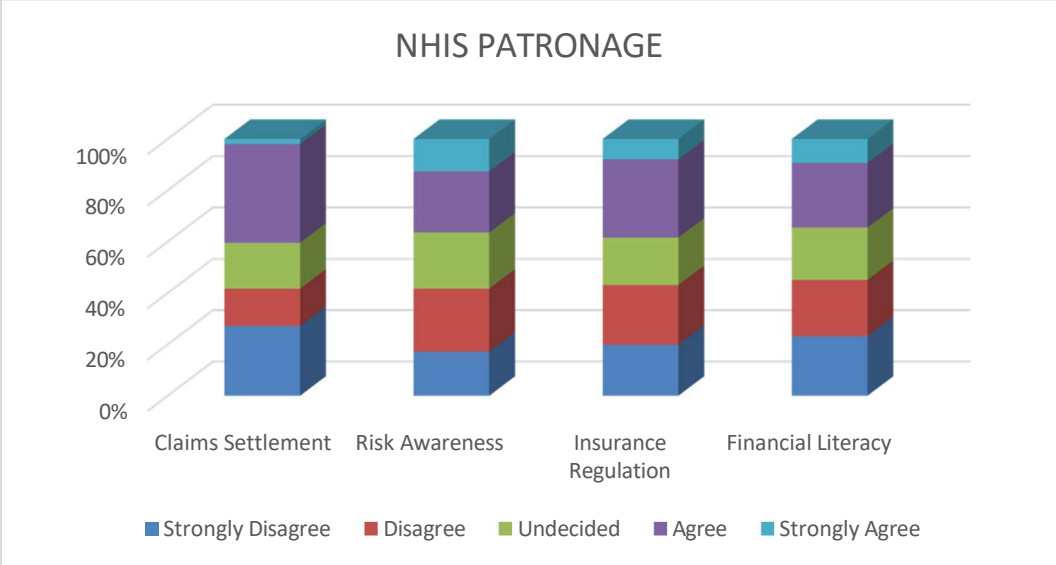
Table 4: National Health Insurance Scheme patronage

Variables	Scale Level					Mean	Std Dev.
	SD	D	U	A	SA		
	1	2	3	4	5		
Claims Settlement	27.3	14.5	17.9	38.4	2.0	2.74	1.279
Risk Awareness	17.2	24.5	21.9	23.8	12.6	2.90	1.295
Insurance Regulation	19.9	23.2	18.5	30.5	7.9	2.83	1.278
Financial Literacy	23.2	21.9	20.4	25.2	9.3	2.75	1.311

The NHIS patronage survey collected data from all participants in Table 4 (Fig. 2). These items included *claims settlement, risk awareness, insurance regulation, and financial literacy.* In response to the different questions, 41.8 percent of the participants disagreed with the claims settlement, 17.9 percent were indifferent, and 40.4 percent agreed. Regarding *risk awareness*, 21.9 percent of participants were unsure, and 41.7 percent said they did not support this item. Subsequently, 36.4 percent expressed their approval.

In terms of *insurance regulation,* 43,1 percent of the participants expressed their disagreement, 18.5 percent were undecided, and 38.4 percent agreed. Regarding financial literacy, 34.5 percent of respondents said they agreed, 20.4 percent said they were unsure, and 45.1 percent disagreed. All of the evaluated items' results were validated by the mean and standard deviation scores. This suggests that the students' assessments of the survey questions were centered around the average and had a normal distribution. The descriptive statistics on NHIS patronage approaches make it abundantly evident that the distribution of participants' attitudes on the topic is constant across all measures.

Figure 2: The National Health Insurance Scheme patronage among specific patients in Lagos State-owned healthcare facilities is explained by the graphic model



4.3. Test of Hypothesis

4.3.1. Friedman's Rank Test

K, the symbol for Friedman's symbiosis analysis test, examines the same population with the same median on multiple occasions. Since Friedman's test implies that the dependent variable has a similar underlying constant distribution in a null hypothetical environment, it necessitates at least an ordinal measurement (Eisinga *et al.,* 2017). According to Friedman's rank test, however, data are always pitched in a symbiotic tabular model with "n" rows and "k" columns. According to St. Laurent and Turk (2013), Friedman's test assesses whether the estimated rank combined effects for each condition deviate significantly from the estimates the prospect may have expected.

H_{O1}: There is no rank-order analysis for National Health Insurance Scheme (NHIS) metrics among selected patients in Lagos State owned Healthcare Facilities

Table 5: Outcome of Friedman's Rank Test on Metrics for National Health Insurance Scheme metrics among selected patients in Lagos State owned Healthcare Facilities

S/N	Survey Items	Mean Rank	Rank
1.	NHIS Awareness	2.14	1
2.	NHIS Accessibility	1.97	2
3.	NHIS Affordability	1.89	3

Source: Researchers' Computations, 2024

Table 6:	Results of the Friedman's Test using Chi-Square
N	151
Chi-Square	6.649
Df	2
Asymp.sig.	.036

a. Friedman Test

Friedman's test results show that NHIS accessibility, NHIS awareness, and NHIS accessibility differ statistically significantly ($X2$ (2, n=151) = 6.649, $p < 0.05$). The NHIS measurements used by a subset of patients at Lagos State-owned healthcare facilities have declined, as can be seen from a close look at the mean calculations. From NHIS awareness (2.14) to NHIS accessibility (1.97), and ultimately to NHIS affordability (1.89), the methods have changed. A clear ranking of the significance of these tactics in affecting NHIS metrics among

certain patients in Lagos State-owned healthcare facilities served as the foundation for the justifications.

H_{o2}: There is no rank-order analysis for National Health Insurance Scheme metrics among selected patients in Lagos State owned Healthcare Facilities

Table 7: Findings from Friedman's Rank Test on National Health Insurance Scheme Patronage Metrics for Selected Patients at State-Owned Medical Facilities in Lagos

S/N	Survey Items	Mean Rank	Rank
1.	Claims Settlement	2.34	4
2.	Risk Awareness	2.64	1
3.	Insurance Regulation	2.54	2
4.	Financial Literacy	2.48	3

Source: Researchers' Computations, 2024

Table 8: Chi-Square Results from the Friedman's Test

N	151
Chi-Square	5.797
Df	3
Asymp.sig.	.122

a. Friedman Test

There is a statistically significant difference in claims settlement, risk awareness, insurance regulation, and financial literacy, according to the Friedman's test results ($X2$ (3, n=151) = 5.797, $p < 0.05$). A thorough analysis of the mean calculations shows that a decrease in the number of patients using the NHIS in Lagos State-owned healthcare facilities has occurred. Risk awareness (2.64) has been replaced by insurance regulation (2.54), financial literacy (2.48), and claims settlement (2.34). A clear ranking of the significance of these tactics in affecting NHIS metrics among certain patients in Lagos State-owned healthcare facilities served as the foundation for the justifications.

H_{o3}: National Health Insurance Scheme metrics have no joint significant effect on selected patients' patronage in Lagos State owned Healthcare Facilities

Table 12: Multiple Regression Results for NHIS Metrics vs NHIS Patronage

Table 12 **Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	. 662[a]	.438	.426	2.84643	.438	38.151	1	147	.000

a. Predictors: (Constant), NHIS Awareness, Accessibility, Affordability
b. Dependent Variable: NHIS Patronage

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	927.323	3	309.108	38.151	.000[b]
	Residual	1191.021	147	8.102		
	Total	2118.344	150			

a. Dependent Variable: NHIS Patronage

c. Predictors: (Constant), NHIS Awareness, Accessibility, Affordability

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	4.237	.702		6.039	.000	2.851	5.624
	NHIS Awareness	1.209	.175	.461	6.925	.000	.864	1.554
	NHIS Accessibility	.650	.348	.223	1.867	.064	-.038	1.338
	NHIS Affordability	.503	.364	.171	1.381	.169	-.217	1.223

a. Dependent Variable: NHIS Patronage

The purpose of the multiple regression study was to assess how NHIS metrics—which include NHIS Awareness, NHIS Accessibility, and NHIS Affordability, affect patient use of healthcare facilities operated by the Lagos State. According to the model summary, there is a significant correlation between the response variable, patient patronage, and the predictors (NHIS Awareness, NHIS Accessibility, and NHIS Affordability) (R = 662, R2 =.438, Adjusted R2 =.426). This finding suggests that the cumulative impact of NHIS measurements accounts for 21.4% of the variation in patient patronage. The ANOVA results, which show a highly significant F-statistic (F = 28.151, p <.05), further corroborate the significance of the regression. According to the regression study, patients' use of

Lagos State-owned healthcare facilities is significantly predicted by the combined effects of NHIS awareness, NHIS accessibility, and NHIS affordability. The correlations in Table 12 clearly show that NHIS affordability (β =.503, t = 1.381, p >.169), NHIS accessibility (β =.650, t = 1.867, p > 064), and NHIS awareness (β =1.209, t =6.925, p <.000).

4.4 Discussion of Findings

This study established the nexus between National Healthcare Insurance Scheme awareness, accessibility, affordability and patronage among selected patients in Lagos State owned healthcare facilities.

The outcomes from hypothesis one signifies that 'NHIS awareness' was ranked first. This was followed by 'NHIS accessibility', and 'NHIS affordability'. This outcome is in alignment with earlier studies (such as Adebola, 2020; Eze et al., 2024) who emphasized that NHIS awareness is a critical focal point for the attraction required for high level patronage from the hospital patients

The outcome from hypothesis two signifies that 'risk awareness' was ranked first. This was followed by 'insurance regulation', 'financial literacy', and 'claims settlement'. This outcome is aligned with earlier studies (such as Akinyemi et al., 2021; Ameh et al., 2021; Eze et al., 2024) who emphasized that the patronage level of the scheme will be enhanced by the implementation of flexible payment plans and subsidized premiums that are specifically designed for informal workers, self-employed individuals, and private organisations

The outcomes from hypothesis three indicated that NHIS awareness, accessibility, and affordability have a positive but low effect on NHIS patronage among selected patients in Lagos State owned healthcare facilities; thereby invalidated the null hypothesis. The study's outcomes supported earlier studies (such as Akinyemi *et al.,* 2021; Kofoworola *et al.,* 2020; Uguru *et al.,* 2024) that the high NHIS premium rate and the restricted scope of healthcare services it covers makes it sometimes unaffordable for formal sector workers who reside in suburban areas; and the use of tiered premiums according to family and individual income levels will increase the scheme's affordability

5. Conclusion and Recommendations

The study confirmed the rank order analysis and nexus between NHIS awareness, accessibility, affordability, and patronage among selected patients in Lagos State

owned healthcare facilities. The study proved a positive relationship existed among the various research interests. The study recommended that routine risk assessment within healthcare facilities to be able to identify potential hazards among patients and the hospital environments. The Lagos State Owned Healthcare Facilities should ensure effective and efficient utilization of the NHIS as a focal point to dampening the out-of-payment stress that are usually being experienced by hospital patients. The hospital management should ensure that technology is embraced to facilitate the usage of NHIS as full time payment plan for all patients within the hospital. Insurance companies, especially, life insurers should ensure that there exists collaboration between them and the various healthcare facilities in Lagos State to enrich the patients knowledge and accessibility of NHIS and its affordability. The government should further encourage the use of NHIS as a payment plan by ensuring that patients make their payment through a Health Management Organisation (HMO) that can embrace the NHIS.

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