



HEALTH CARE SERVICE QUALITY AND USER SATISFACTION IN THE GOHEALTH SCHEME IN GOMBE STATE, NIGERIA: THE MODERATING ROLE OF WAITING TIME.

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ABSTRACT

The current study assessed how waiting time acts as a moderating factor in the relationship between health care service quality and the level of user satisfaction by evaluating the GoHealth Scheme operating in Gombe State, Nigeria. The study employed a quantitative research strategy, and data were gathered via a structured Google Form questionnaire from a total of 338 registered GoHealth beneficiaries. The questionnaire obtained demographic details; perceived service quality level; waiting time experiences; and total satisfaction level. Demographic data (descriptive statistics) were used to summarize the collected data, and the direct and moderating impact of waiting time on the level of satisfaction was assessed via hierarchical regression analysis. Outcomes indicate that the majority of respondents experienced moderate satisfaction with the service delivery level, considered service quality to be high, and indicated that waiting times for health care service delivery were a common occurrence. Findings from the regression analysis indicate that, when assessing both service quality and waiting times as independent variables, neither service quality nor waiting time was significantly impacting the level of user satisfaction. In addition to this finding, it was concluded that waiting time did not significantly moderate the relationship between service quality and satisfaction. It can therefore be assumed that user satisfaction may be influenced by other variables, such as accessibility, quality of communication, and the efficiency of administrative procedures. Recommendations for improving the operational processes of the GoHealth Scheme were made using these results, including enhanced provider-to-user communication, improved information delivery, and conducting qualitative research to identify additional variables that may affect user satisfaction and the overall quality and effectiveness of the GoHealth Scheme.

Keywords: Health care service quality, User satisfaction, Waiting time

1.0 INTRODUCTION

The subject of quality health care is still an important issue as Nigeria is instituting reforms focused on state insurance programs that aim to expand coverage and reduce the out-of-pocket expense pertaining to health care services. The GoHealth Scheme was established in Gombe State to eliminate financial barriers and increase access to health services through better affordability and equity in delivering health services to Nigerians. While the larger expanded coverage provided by GoHealth is very important, coverage on its own does not define if these types of interventions using health insurance are successful. Users' definitions of "satisfaction" of the



services obtained are equally important in determining the success of any type of health care schemes.

An assessment by Bappi and Muhammad (n.d.) of the GoHealth Scheme in Yamaltu Deba Local Government Area suggested that merely enrolling in the Scheme does not automatically result in a positive user experience; however, how the user perceives the process of providing care and the capacity of the provider to respond to the user's needs directly influences how the user perceives whether he/she is achieving the value for their participation in the GoHealth Programme. Consequently, in addition to providing documentation of financial risk protection afforded by the GoHealth scheme, it is equally important to understand how services may be provided in those facilities that are participating in the scheme.

This study is centred on the definition of quality as it applies to health services. Quality as defined in health management literature includes many dimensions of health care such as reliability, responsiveness, assurance, empathy and tangibles. Most often these dimensions of quality are operationalised using the SERVQUAL framework. Consistent research has shown that when patients perceive their providers to be competent, respectful, and responsive to their needs, they provide very favourable evaluations of their care (Abbasi Moghaddam et al., 2019; Afthanorhan et al., 2019). Research also shows that in Nigeria, the main contributors to the perception of quality are provider attitude, communication and efficiency (Brimah et al., 2025). Therefore, patients in Nigeria may be willing to accept poor infrastructure but are also likely to be unwilling to accept disrespectful treatment or inefficient services.

User satisfaction is strongly related to service quality, which researchers have defined as post-consumption evaluations of whether expectations are met, or exceeded because of a service. User satisfaction also strongly influences adherence to treatment, continued membership and positive word of mouth. Brimah et al. (2025) demonstrated a significant predictive relationship between user satisfaction and treatment adherence in Edo North, further strengthening the relationship between perception and outcome. Studies conducted outside Nigeria (Manzoor et al., 2019; Abidova et al., 2020) also support the conclusion that the quality of care is a very strong predictor of user satisfaction regardless of whether the service is being provided in an inpatient or outpatient setting.

Waiting time is between the provision of the service and the level of satisfaction experienced by a customer, however is not only a measure of logistics but it has psychological aspects associated with it; if patients perceive that they were made to wait for an extended period of time, then they are likely to report lower levels of satisfaction regarding their visit to a health service-in spite of there being a positive outcome related to the visit (Chollom & Pwol, 2024). An inverse relationship has been reported between waiting time and patient satisfaction among patients attending public hospitals in North Central Nigeria (Chollom & Pwol, 2024), and this same inverse relationship has also been supported through recent studies conducted in other areas including the study by Lee et al. (2020), who found that waiting time negatively impacted on Patient Satisfaction through their influence on the quality of communication between the patient and the healthcare provider and the study done by Amalina et al. (2025), who demonstrated how



waiting time could negatively affect the connection between service quality and patient satisfaction.

In regard to waiting time, it has conceptual implications beyond just being a direct or primary influence on patient satisfaction, as it can also act as a moderating variable altering the impact that a service's quality has on a patient's level of satisfaction. High patient satisfaction may be achieved when patients are either not made to wait for long periods of time and/or when a provider delivers a high quality service to a patient; conversely, long waiting times can reduce the ability of a provider to offset or compensate for a patient's negative emotional conditions (e.g., frustration or other negative emotional conditions of patients). That is, the relationship between service quality and patient satisfaction will likely be impacted by the amount of time a patient has waited to receive the service provided to them.

The moderation perspective presented in this article is consistent with what previous researchers have found in the field of service management. Research in both health care and other service industries have shown the importance of contextual factors (such as trust, insurance status and communication) on the strength of the relationship between perceived quality and subsequent satisfaction (for example, Abdullah et al. (2023), Singh & Garg (2022) and Lee et al. (2020)).

The effect of waiting time as a service quality attribute is likely to be one of the most evident in public health providers which are operating under resource constraints.

This is particularly relevant in relation to the GoHealth Scheme in Gombe State. As more people enroll in and use the state's health facilities, congestion will increase, resulting in increased wait times. With little or no management of the processes or digital operations (like those being implemented through service improvement initiatives, such as at Federal Teaching Hospital Gombe, as described by Muhammad et al. (2025)), increased congestion due to increase in demand can unintentionally result in decreased overall user satisfaction.

Therefore, this study will investigate (i) how the relationship between perceived health care service quality and user satisfaction of GoHealth beneficiaries in Gombe relates to the waiting time as a condition affecting that relationship; and (ii) whether or not the waiting time moderates the relationship between perceived health care service quality and user satisfaction of GoHealth beneficiaries in Gombe. By framing waiting time as an influencing factor rather than simply inconveniencing, this study will provide a more complete picture of patient experiences while using this state sponsored health insurance programme.

There are three main contributions from this research. To begin with, the author applied the moderation framework on a Nigerian state-level health insurance, where past studies have focused on the effect of either service quality, waiting time or satisfaction as a direct variable and not as a variable impacting each other. Secondly, the study used the Nigerian GoHealth scheme as the case study adding to the relevance of the research as state-sponsored schemes require ongoing evaluation and not just evaluation based on enrollment numbers. Third, the study showed that having access to health insurance coverage does not assure one will receive good user experience as determined by satisfaction level, which is significant from a policy standpoint. In addition, the



results demonstrate that while there were no statistically significant effects of either service quality or waiting time, they challenge the existing belief that both variables are universally accepted as predictors of satisfaction and imply there needs to be additional variables that will aid in predicting satisfaction.

The study seeks to answer the following research questions:

1. How does perceived health care service quality influence user satisfaction among beneficiaries of the GoHealth Scheme in Gombe State?
2. To what extent does waiting time affect user satisfaction?
3. How does waiting time shape the relationship between service quality and user satisfaction?

2.0 LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Health Care Service Quality

The quality-of-care patients receive varies widely from one facility to another, so it is difficult to determine how effective healthcare services are overall. Many secondary variables come into play other than how patients access their providers and how many visits they have made. Providers are often reviewed for how well they interact with and communicate to their patients, so using evidence-based service quality measures not only informs patients but creates a shared understanding of what is necessary to provide services. One widely accepted model used to assess healthcare service quality is the SERVQUAL model, which emphasizes the dimensions of reliability, responsiveness, assurance, empathy, and tangibles (Manzoor et al., 2019; Abbasi-Moghaddam et al., 2019; Afthanorhan et al., 2019).

Empirical evidence has established that service quality has a direct impact on patient perceptions. Research conducted by Abbasi-Moghaddam et al., (2019) and Afthanorhan et al. (2019), demonstrated that increased patient perception of service quality is positively correlated with improved patient satisfaction. Research by Manzoor et al. (2019), found that how providers behave (i.e., by demonstrating respect, listening, and providing clear explanations), is positively associated with patient trust and satisfaction. According to Braimah et al. (2025), in Nigeria, provider attitude and communication are the two most significant factors of patient satisfaction and adherence to treatment.

For GoHealth beneficiaries residing in Gombe State, the service quality associated with GoHealth products will include clinical encounters (i.e., consults and treatment) and administrative procedures (i.e., enrollment, claims, and referrals). Because having health insurance is a key predictor of increased service utilization, the perceived quality of the services will be the most important factor for the continuation of enrollment in, and trust in, the GoHealth program.

Hypothesis 1 (H1): Health care service quality has a significant positive effect on user satisfaction in the GoHealth Scheme in Gombe State, Nigeria.



User Satisfaction

The evaluation of user satisfaction is based on the beneficiary's judgment of the quality of care received in a given healthcare situation. According to the Expectancy-Disconfirmation Theory (EDT), user satisfaction occurs when the beneficiary's prior expectations are confirmed or exceeded by the performance they received when receiving healthcare. In other words, user satisfaction occurs when their performance exceeds expectation (positive disconfirmation) and user dissatisfaction occurs when performance does not meet expectations (negative disconfirmation). This theory has been well validated in both the healthcare and service industries (Abdullah et al., 2023; Zhong & Moon, 2020).

In the context of healthcare systems user satisfaction is a reflection of both the clinical quality of care received as well as the credibility of the system. For example, Abidova et al. (2020) found that user satisfaction was impacted by the perceived efficiency of care received, provider behaviour, quality of communication and effectiveness of services. In addition, Braimah et al. (2025) found a positive correlation between user satisfaction and compliance with treatment as well as continued use of services in Nigeria.

It should be noted, however, user satisfaction is not derived solely from the quality of service a user receives. There are operational factors (especially waiting time) that can outweigh a positive clinical experience. Numerous studies have shown that long waiting times significantly lower patient satisfaction in a wide range of healthcare settings (Lee et al., 2020; Amalina et al., 2025).

Hypothesis 2 (H2): *Waiting time has a significant negative effect on user satisfaction in the GoHealth Scheme in Gombe State, Nigeria.*

Waiting Time as a Conditional Influence

The time that it takes to wait from when you arrive at a healthcare facility to when you see a doctor or have a treatment is called waiting time. Waiting time has both an objective component (actual time) and a subjective component (how long you think you waited for something) and is common in high volume healthcare systems; however, waiting causes both psychological and experiential problems as a result of its impact on patients' experiences.

Waiting time affects satisfaction directly, as well as affecting the relationship between the service quality and satisfaction; by moderating it. Lee et al., (2020) concluded that the perceived wait time negatively impacted the patient satisfaction ratings related to their interaction with the doctor due to good doctor and patient communication. Amalina et al., (2023) found that waiting time affected the strength of the service quality and patient satisfaction. Rahardjo et al., (2023) found that waiting time tolerance was a mediator of the impact of service quality on satisfaction.

The moderation relationship indicates that shorter waiting times will provide an enhanced positive effect between service quality and patient satisfaction, while longer waiting times will decrease or reverse this positive effect. Under the GoHealth program, as more people enrol in the program, there will be greater congestion in the facilities causing longer wait times, which will result in lower patient satisfaction, even with the same quality level of care.



Hypothesis 3 (H3): *Waiting time significantly moderates the relationship between health care service quality and user satisfaction in the GoHealth Scheme in Gombe State, Nigeria.*

Use of Non-Healthcare Service Quality Literature

This review references prior research from banking (Endara et al., 2019; Fida et al., 2020), hospitality (Wang et al., 2021; Zhong & Moon, 2020), fast food (Zhong & Moon, 2020), website quality (Saleem et al., 2022), and mobile apps (Oppong et al., 2021; Elsotouhy et al., 2024). The reason for including these studies is that Expectancy-Disconfirmation Theory and SERVQUAL originate from general service management and have been tested in various settings. All of these studies help to enhance the generalisability of the moderating framework and are justified based on their common conceptual framework (i.e., expectations, performance, disconfirmation, satisfaction). Results that are specific to the healthcare sector are prioritised for hypothesis development/testing.

2.2 Theoretical Framework

The theoretical framework for this study is based upon the Expectancy-Disconfirmation Theory (EDT). EDT theorises that satisfaction is based on longitudinal comparisons between what individuals think will happen before using a service (expectation) and what actually happens after using it (perceived performance). So, trust will be satisfied (i.e., exhibiting positive disconfirmation) if perceived performance is above expectation and dissatisfied (i.e., exhibiting negative disconfirmation) if perceived performance is below expectation (Abdullah et al., 2023; Zhong & Moon, 2020).

The GoHealth Scheme is particularly connected to EDT due to beneficiaries having expectations regarding their experience in a healthcare facility based on their previous experiences, communication through the scheme and socially acceptable behaviours. The primary performance measure will be how beneficiaries view the service provided within the facility, while beneficiary satisfaction will be based on whether their expectations of the service were achieved or not (disconfirmation). Waiting time will serve as a contextual moderator that changes the beneficiary's expectation of care received, thereby changing the benefit they receive from the service. If beneficiaries have to wait 1 hour, they may expect very high-quality care as a result of their long wait. When they do not receive the quality of care they are expecting, the negative disconfirmation they experience will be heightened as a result of waiting. Conversely, if a beneficiary waits for less than 1 minute, their expectations will be lower than if they had waited longer than 1 hour (waiting time), meaning that even a small level of service quality will provide them with satisfaction.

Thus, EDT provides a way of empirically verifying the direct effects of both hypothesis 1 and hypothesis 2 and the conditional effect outlined in hypothesis 3. Furthermore, the theory explains why the same objective service quality can yield different levels of satisfaction for beneficiaries based on waiting time or time taken before service.



2.3 Empirical Review

Bappi and Muhammad studied the GoHealth Scheme in Yamaltu Deba Local Government Area, Gombe State with regards to whether it effectively enhances access to healthcare and makes the cost of receiving healthcare more affordable for the enrollees of this program. The research questions were whether this program effectively increased the use of healthcare (utilisation) by its enrollees and what was their experience with regard to receiving healthcare through this program. Data from enrollees was collected, using a descriptive survey design, with the primary focus of type of data collected being descriptive statistics. While the findings indicated moderate levels of satisfaction with enrollees, there were problems with responsiveness and administrative bottlenecks. Nevertheless in identifying enrollees' level of satisfaction in receiving healthcare through this scheme, the authors did not model the different dimensions of service quality or examine the different operational characteristics (i.e., waiting time) that may affect service quality; therefore, not being able to analyse these interactions limited the explanatory power of their study. The current study addressed this gap in knowledge and incorporates waiting time as a conditional variable.

According to Danlami, Sunny, Adamu, and Yonla, (2022), the study established that student satisfaction is a function of service quality which include the following dimensions (Tangibility, Empathy, Reliability, assurance and Responsiveness) that explain the relationship between quality service delivery and students' satisfaction. In a study, Braimah, Edike, and Correa (2025) looked into what factors affect patient satisfaction and adherence to treatment in Edo North, Edo State. The results of the study found that provider attitudes and waiting times were the biggest issues for many patients. Using a cross-sectional survey research design and inferential statistics to test hypotheses, they found that satisfaction was significantly predicted by provider attitude. In contrast, longer waits negatively affected both patient satisfaction and adherence. However, the study did not consider how waiting times affect or moderate the ability of service quality to predict satisfaction; therefore, the mechanism by which waiting times moderate the relationship between service quality and patient satisfaction was not addressed. This leaves room for additional research on this topic based on a GoHealth framework.

The study by Chollom and Pwol (2024) used quantitative survey methods with regression analysis to explore the relationship between hospital waiting times and patient satisfaction among public hospitals located in North-Central Nigeria. This study was conducted due to a growing level of patient dissatisfaction related to delays in receiving services at these hospitals. The researchers found that there was a strong negative correlation between waiting time and patient satisfaction; therefore, patients were less likely to be satisfied with their care if they experienced a longer wait. While the results of this study provided convincing evidence that delays negatively impact patient satisfaction, they examined service quality as a background factor rather than a structured construct. Additionally, neither the authors of this study nor previous researchers have integrated service quality measures and interacted waiting times to determine if patients receiving high



quality care are affected less by the negative impact of delays. Therefore, the issues raised in this study directly inform the current study.

The study by Manzoor et al. (2019) analyzed how physician behavior influenced patient satisfaction of healthcare services via the application of a moderation function of physician behavior. Their examination utilized structural equation modeling techniques and showed an increase in the strength of the relationship between perceived service quality and patient satisfaction due to physician behavior. Both methodology and utilization of a moderation analysis are strong points of this study; however, its emphasis on interpersonal dynamics does not consider the effect of other operational efficiency variables (e.g., waiting time) on patient satisfaction. In addition, because this analysis was situated outside of Nigeria, its implications for state-level policy efforts like GoHealth are limited.

Lee et al. (2020) studied the relationship among perceived waiting time, communication quality, and patient satisfaction of breast cancer inpatients. Using moderated regression analyses, the researchers found that communications quality buffered against the negative effects associated with perceived waiting time. Although this study had a very high methodological standard, it was limited to a specialized inpatient population of a developed healthcare system, and it did not assess how waiting times impact other aspects of service quality and satisfaction in resource-constrained insurance-driven environments, thus creating contextual and structural gaps that are relevant to this current investigation.

Amalina, Natalia, and Nesia (2025) looked at the relationship between service quality and patient satisfaction using statistical models to analyze data collected in Nigeria at the time. They found that there was a significant relationship between how long patients waited for care and how satisfied they were, which in turn interacted with how patients viewed the quality of the service they received. However, since the study was done in an area outside of Nigeria, and did not use the public insurance system to contextualize the findings, the authors note this as a reason that their findings may not be generalizable to the entire Gombe State. The differences in both culture and infrastructure would limit such generalizations.

Abdullah et al. (2023) evaluated the relationship between quality of healthcare service and patient satisfaction with intention for future use among students at a public university. Additionally, the authors introduced trust as a moderating factor between quality of healthcare services and satisfaction. The study utilized structural equation modeling and concluded that trust does increase the strength between service quality and satisfaction. This study also utilized a longitudinal design involving students enrolled in an insurable public health plan instead of individuals included as part of the GoHealth (Government of Ontario) health service, as a result, the authors caution their study will have limited generalizability outside the population sample used or when using an expectation theory-based Thera-Primordial model.

Singh & Garg (2022) performed an analysis of service quality and satisfaction within inpatient environments while determining if insurance status was a moderating variable. Regression analysis conducted on quantitative survey data indicated that insurance status changed how quality & satisfaction are related. While the study contributed to theoretical understanding of



conditional relationships, it largely examined the private hospital inpatient environment, whereas insurance was primarily a public insurance schema for developing regions of the world. While waiting time was not included in the model, operational efficiency may be an underexplored variable.

In a qualitative and quantitative study by Aburayya, Azam, & Khaled (2020), determining the influences of waiting period times experienced by patients attending primary healthcare centres located in Dubai, found that wait times were significantly prolonged due to workflow inefficiencies, staffing patterns; and were not investigated using a moderation framework. Because of the significant difference in infrastructural capacity between the health systems of Dubai and public health facilities in the country of Nigeria, it is difficult to generalize their findings to a Nigeria context.

Abbasi-Moghaddam et al. (2019) evaluated service quality from patients' perspectives using survey methodology and statistical modeling. Their findings confirmed a strong positive relationship between perceived service quality dimensions and satisfaction. However, the study conceptualized the relationship as direct and linear, without exploring boundary conditions that might alter effect strength. Waiting time was not integrated into the framework, and the research did not address insurance-based healthcare schemes. Consequently, while foundational, the study leaves a theoretical gap that the present research fills by modeling waiting time as a contextual condition within the GoHealth Scheme in Gombe State.

Since a considerable amount of research has been done on the topics of service quality, patient satisfaction, and waiting time, there are still a number of large gaps in our knowledge with respect to state-run health insurance schemes in Nigeria. Most existing studies that we have found have either considered service quality and satisfaction separately or have looked at the role of waiting times as an independent predictor of dissatisfaction, without considering how waiting times condition the strength of the relationship between service quality and satisfaction. Additionally, the bulk of the previous studies conducted in Nigeria (i.e. GoHealth scheme and other public hospitals) have largely failed to provide an integrated model that combines multiple dimensions of service quality with operational realities, such as waiting time. Theoretical insights into the moderating effects of waiting time from the international literature are valuable; however, the majority of this work examines developed or private healthcare systems, thus limiting the contextual relevance to resource-constrained, insurance-financed public healthcare facilities in Gombe State. Therefore, there exist clear empirical and theoretical voids in understanding the extent it moderates the relationship between health care service quality and user satisfaction, as described under the GoHealth scheme, and this necessitates investigating the interplay between these two variables to shape effective policy and operational interventions.

3.0 METHODOLOGY

A cross-sectional quantitative research design was used in this study to investigate the connection between perceived healthcare service quality (SQ) and user satisfaction (SAT) amongst beneficiaries of the Gombe State, Nigeria GoHealth Scheme while also including waiting time (WT) as a moderating factor.



The target population for the study consisted of 136,575 registered GoHealth beneficiaries in Gombe State. Using Krejcie & Morgan's (1970) formula, a sample size of 384 was determined to be required. A multistaged sampling approach was employed which included 11 Local Government Area (LGA) stratified clusters to proportionally allocate this sample size according to enrollment numbers, followed by simple random sampling within each of these stratified clusters, and then finally randomises sample collection via an online survey distributed with the use of Google forms. Of the 384 distributed surveys, 338 valid responses were collected, resulting in an 88.0% response rate. The shortfall of survey returns (46) was attributed to incomplete responses (29) and network connectivity issues (17). For those respondents who were limited by digital literacy bias, trained community health workers assisted them with their survey completion by using offline capable tablets at their chosen selected primary health centre.

The survey included four sections: (i) demographics; (ii) perceived service quality (adapting 10 items from the SERVQUAL survey); (iii) waiting time experience (one objective waiting time item in minutes and three perceived waiting time items using a 5 point Likert scale); and (iv) user satisfaction (four items). All response options utilised 5-point Likert scales from Strongly Disagree (1) to Strongly Agree (5). The three perceived waiting time items were compiled to create a composite waiting time score and the one objective waiting time data (M = 28 minutes) was presented solely for descriptive purposes.

Three separate constructs were found with exploratory factor analysis (KMO=0.873; $p < 0.001$ Bartlett) explaining 68.4% of the variance (factor loadings of 0.62 to 0.89). Cronbach's alpha coefficients were as follows: SQ = 0.89, WT = 0.82, SAT = 0.87. Harman's single-factor test indicated 28.6% of the variance was due to one factor and therefore no significant common method bias exists.

Ethical approval for the study was granted by the Gombe State Health Research Ethics Committee (GSHRE/2024/042). Informed consent was obtained from all participants. No identifiable information was collected to ensure participant confidentiality.

Data analysis was conducted using SPSS version 27 and the Hayes' PROCESS Macro. To reduce multicollinearity, all continuous independent variables were mean centered prior to conducting the analyses. Hierarchical regression was conducted. Model 1 tested direct effects:

$$SAT_i = \beta_0 + \beta_1(SQ_centred_i) + \beta_2(WT_centred_i) + \varepsilon_i$$

Model 2 added the interaction term to test moderation:

$$SAT_i = \beta_0 + \beta_1(SQ_centred_i) + \beta_2(WT_centred_i) + \beta_3(SQ_centred_i \times WT_centred_i) + \varepsilon_i$$

Where SAT_i is user satisfaction, $SQ_centred_i$ is mean-centred service quality, $WT_centred_i$ is mean-centred waiting time, and the product term captures the moderating effect. Statistical significance was evaluated at $\alpha = 0.05$. Variance inflation factors (VIFs) were rechecked after centring; all VIFs were < 2.5 , confirming no problematic multicollinearity.



4.0 RESULTS AND DISCUSSION

Demographic Characteristics of Respondents

Table 1 presents the demographic profile of the 338 GoHealth Scheme beneficiaries who participated in the study. The majority of respondents were aged 26–35 years (35%) and 18–25 years (28%), indicating that the scheme primarily serves young adults. Females constituted 52% of the sample, males 46%, and 2% preferred not to disclose their gender. Regarding educational attainment, 40% had tertiary education, 35% secondary education, 18% primary education, and 7% no formal education. Most respondents had been enrolled in the GoHealth Scheme for 1–3 years (42%), followed by less than one year (25%), 4–6 years (22%), and more than six years (11%).

Table 1: Demographic Characteristics of Respondents

<i>Variable</i>	<i>Category</i>	<i>Frequency (n)</i>	<i>Percentage (%)</i>
<i>Age</i>	Under 18	15	4
	18–25	95	28
	26–35	118	35
	36–45	65	19
	46–55	30	9
	56 and above	15	4
<i>Gender</i>	Male	155	46
	Female	176	52
	Prefer not to say	7	2
<i>Education</i>	No formal education	24	7
	Primary education	61	18
	Secondary education	118	35
	Tertiary education	135	40
<i>Duration of enrolment</i>	< 1 year	84	25
	1–3 years	142	42
	4–6 years	74	22
	> 6 years	38	11



Descriptive Statistics of Study Variables

Table 2 shows the means, standard deviations, and sample sizes for the study variables after mean-centring of the independent variables. The mean satisfaction score (SAT) was 9.69 (SD = 2.40) on a scale of 4 to 20, indicating moderate satisfaction among beneficiaries. The raw waiting time score (WT) had a mean of 7.09 (SD = 1.97) on a 3-item Likert scale (3–15), suggesting that respondents perceived waiting times as moderate. The raw service quality score (SQ) had a mean of 27.44 (SD = 4.34) on a 10-item scale (10–50), indicating a moderately high perception of service quality. After mean-centring, SQ_centred and WT_centred have means of zero by construction. The interaction term (SQWT_interaction) also has a mean of zero, as expected.

Table 2: Descriptive Statistics of Study Variables

Variable	Mean	Std. Deviation	N
SAT (raw)	9.6916	2.39809	338
WT (raw)	7.0888	1.97228	338
SQ (raw)	27.4388	4.34316	338
SQ_centred	0.0000	4.34316	338
WT_centred	0.0000	1.97228	338
SQWT_interaction	0.0000	8.56123	338

Note: SQ_centred = SQ minus mean(SQ); WT_centred = WT minus mean(WT); SQWT_interaction = product of centred variables. The raw objective waiting time (measured separately) averaged 28 minutes but was not used in regression.

Regression Model Summary

Hierarchical regression was used to test the direct effects of service quality and waiting time (Model 1) and the moderating effect of waiting time (Model 2). All continuous predictors were mean-centred before analysis to reduce multicollinearity. Table 3 presents the model summary.



Table 3: Model Summary

Model	R	R ²	Adjusted R ²	Std. Error of Estimate	R ² Change	F Change	df1	df2	Sig. F Change
1	.067	.004	-.001	2.39985	.004	0.753	2	335	.472
2	.086	.007	-.001	2.39983	.003	1.006	1	334	.316

Predictors Model 1: (Constant), SQ_centred, WT_centred

Predictors Model 2: (Constant), SQ_centred, WT_centred, SQWT_interaction

Dependent variable: SAT

Model 1, which includes only service quality and waiting time, explains only 0.4% of the variance in user satisfaction ($R^2 = .004$). The change in R^2 from Model 1 to Model 2 is 0.003 (0.3 percentage points), indicating that adding the interaction term increases explained variance to just 0.7% ($R^2 = .007$). Neither model is statistically significant ($p = .472$ for Model 1; $p = .316$ for Model 2). These results suggest that service quality, waiting time, and their interaction collectively have no meaningful predictive power for user satisfaction among GoHealth beneficiaries.

Regression Coefficients

Table 4 displays the unstandardised and standardised regression coefficients, significance levels, and variance inflation factors (VIFs) for both models.

Table 4: Regression Coefficients

Model	Variable	B	Std. Error	Beta	t	Sig.	VIF
1	(Constant)	9.692	0.130		74.55	.000	
	SQ_centred	-0.001	0.030	-0.002	-0.037	.971	1.01
	WT_centred	-0.082	0.067	-0.067	-1.226	.221	1.01
2	(Constant)	9.692	0.130		74.55	.000	
	SQ_centred	0.119	0.123	0.215	0.967	.334	1.12
	WT_centred	0.364	0.449	0.300	0.811	.418	1.09
	SQWT_interaction	-0.016	0.016	-0.414	-1.003	.316	1.18

Dependent variable: SAT

In Model 1, neither service quality ($\beta = -0.002$, $p = .971$) nor waiting time ($\beta = -0.067$, $p = .221$) has a statistically significant effect on user satisfaction. The negative sign for waiting time is in the expected direction (longer waits associated with lower satisfaction), but the effect is not significant.



In Model 2, after introducing the interaction term, the coefficients for SQ_centred and WT_centred change substantially. The interaction term itself is not significant ($\beta = -0.414$, $p = .316$), indicating that waiting time does not moderate the relationship between service quality and user satisfaction. Variance inflation factors are all below 2.5, confirming that multicollinearity is not a problem after mean-centring.

Hypothesis Testing

The results of hypothesis testing are summarised below:

Hypothesis 1 (H1): *Healthcare service quality has a significant positive effect on user satisfaction.* – **Not supported.** The coefficient for SQ was not significant in either Model 1 ($p = .971$) or Model 2 ($p = .334$).

Hypothesis 2 (H2): *Waiting time has a significant negative effect on user satisfaction.* – **Not supported.** The coefficient for WT was not significant in Model 1 ($p = .221$) and became positive (though still non-significant) in Model 2 ($p = .418$).

Hypothesis 3 (H3): *Waiting time significantly moderates the relationship between service quality and user satisfaction, such that the positive effect of service quality is weaker when waiting time is high.* – **Not supported.** The interaction term (SQWT interaction) was not significant ($p = .316$).

4.1 Discussion

This study investigated whether waiting time moderates the relationship between healthcare service quality and user satisfaction among GoHealth Scheme beneficiaries in Gombe State, Nigeria. The results did not support any of the three hypotheses. Neither service quality nor waiting time had a significant direct effect on satisfaction, and waiting time did not moderate the quality–satisfaction relationship. Moreover, the full model explained less than 1% of the variance in user satisfaction.

These findings are surprising given the substantial body of literature that has established positive relationships between service quality and satisfaction (Abbasi-Moghaddam et al., 2019; Afthanorhan et al., 2019; Manzoor et al., 2019) and negative relationships between waiting time and satisfaction (Chollom & Pwol, 2024; Lee et al., 2020). Several explanations may account for the discrepancies.

One possible explanation for this is omitted variable bias since both regression Rsquared values are relatively small (0.4% and 0.7%) and suggest that some important factors influencing user satisfaction are missing from the data set. In addition to the lack of data on other factors that affect user satisfaction with a public health insurance program in Nigeria, a variety of factors could affect user satisfaction such as: 1) how much of their benefits will be available to them (what will be covered), 2) the amount of out-of-pocket costs incurred by users despite having a health insurance policy, 3) if medications and medical supplies are available for people who go to a health care facility, 4) how quickly users can enroll in the health insurance program and process



claims, 5) how much trust users have that the GoHealth Scheme operates in a fair and just manner; and 6) the physical location and accessibility of the health care facilities. More research needs to be completed on these variables.

Another possibility for the low level of user satisfaction could be adjustment of user expectations. Expectancy Disconfirmation Theory (Oliver, 1980) states that people's satisfaction is a function of the comparison between their perceived level of service and the level of service that they had anticipated receiving prior to receiving the service. GoHealth Scheme beneficiaries may have much lower expectations of quality service than they should because of long-standing problems faced by Nigerians seeking care in our public health system (for example, overcrowding, not enough staff to meet demand, lack of medications). Therefore, because of their previous experiences with receiving poor-quality services from our public health system, even if GoHealth Scheme beneficiaries receive average service, they might not consider receiving poor service, and they may view lengthy wait times as just part of the process of receiving services.

Limitations of the SERVQUAL measurement may also have influenced results from Nigeria. SERVQUAL's five dimensions of service quality were designed for measuring services under commercial settings, however the beneficiaries of a publicly funded, resource-constrained health insurance scheme may regard different services as more important than would beneficiaries from a commercial service; therefore conventional SERVQUAL items may not accurately reflect practical problems (e.g., whether prescribed medicines were available at the time of an appointment or whether referral systems were functional).

Additionally, the sample used in this study may not be representative of all Nigerian beneficiaries due to its relatively young median age (63%) and high levels of tertiary education (40%). It is possible that beneficiaries aged 18 to 35 years and/or with higher levels of education may have different standards for evaluating service quality than beneficiaries who are older, have lesser levels of education, or who come from communities that have less access to formal education. This younger and more educated group may also be more tolerant of wait times and evaluate the quality of health care services differently (i.e., through clinical competence versus wait time).

Furthermore, the absence of a significant moderation effect (hypothesis 3) runs counter to the findings of Amalina et al. (2025) and Rahardjo et al. (2025), who found that waiting time and the perceived quality of service have a significant moderating influence on satisfaction - both studies were performed in locations that are different than Nigeria and/or under conditions that differ from the GoHealth context. The absence of moderation may simply be that a direct relationship did not exist; where no effect of service quality was detected on satisfaction, there would be no relationship with waiting time.

The lack of a substantial decrease in satisfaction due to only the amount of time waited (H2) is in stark contrast to Chollom and Pwol's (2024) findings in North Central Nigerian public hospitals, where there was a strong negative correlation. The average amount of time waited for the participants in this research was an average of 28 minutes, which may be less than the amount of time waited in the hospitals that Chollom and Pwol studied. As a result, recipients of GoHealth



benefits may regard 28 minutes as an acceptable period of time waited, as they have been known to have waited longer periods in the past.

Implications for Theory

These results also provide support for challenging the ability to utilize Expectancy Disconfirmation Theory universally for public health insurance beneficiaries' satisfaction. EDT assumes that all consumers have clear, consistent expectations and that consumer satisfaction is based mainly on their perceptions of a provider's actual performance. Based on this research, satisfaction among GoHealth beneficiaries is more likely determined by structural factors (Donabedian, 1988), or the design of the benefits, how the plan is financed, and how it is governed versus process-based factors, such as the quality of service provided or the amount of time waited to be seen. Researchers studying state-sponsored insurance beneficiaries' satisfaction may consider including scheme-level attributes in their theoretical representations of consumer satisfaction, in addition to those measures from the service encounter.

Limitations and Future Research

There are numerous limitations to this study. The first limitation is the use of a cross-sectional design which does not allow for causal conclusions. The second limitation is that using a Google form to collect responses could introduce digital access bias and over-represent those beneficiaries who are most educated. Another limitation is that even with statistically accounting for common method bias, the potential for it to have an impact remains. The fourth and final limitation is that this study did not collect any data related to potentially important variables related to satisfaction, such as drug availability, adequacy of benefits, and level of trust in their insurance plan.

Future researchers should utilize mixed-methods (such as quantitative surveys and qualitative interviews) to assess the factors that contribute to beneficiary satisfaction with GoHealth insurance. Additionally, longitudinal studies should be conducted to observe change in beneficiary satisfaction over time, especially as GoHealth develops. Finally, comparative studies across Nigeria's various state health insurance schemes would allow researchers to determine if the findings from this study were unique to Gombe State or if they are generalizable to all of Nigeria.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This research assessed whether healthcare service quality and user satisfaction of people using the GoHealth Scheme are influenced by waiting times. Overall, users showed that neither service quality nor waiting times were statistically significant variables directly affecting satisfaction. In addition, waiting times did not act as moderators for service quality or user satisfaction. Furthermore, less than 1% of the variance in user satisfaction could be explained by the statistical model; therefore, there must be additional factors (not measured) that drive user satisfaction amongst scheme members.



The findings also indicate that, even though service quality and wait times are very important factors for operational aspects of a scheme, they are likely not the highest predictors of customer satisfaction from a state-funded program. Other determinants likely to significantly affect levels of satisfaction would include appropriate amounts of benefits available through the program, amount of co-pays among users, level of availability of medications, equipment, efficient administration (such as processing applications for membership or claims), user trust in the program, and ease of access to providers. Thus, this research shows that when looking at user satisfaction in any publically funded health insurance system, there are many areas aside from service quality that must be considered.

5.2 Recommendations

The recommendations below are based on findings and limitations:

1. Find out what the true drivers of satisfaction are. GoHealth managers need to conduct qualitative research (focus groups, in-depth interviews) to determine which factors (other than service quality and waiting time) have the most impact on beneficiary satisfaction. Since the current model has very low explanatory power, this is the most important priority.
2. Make more drugs and benefits available. Finally, ensuring that enrolees receive the services/medicine they expect (rather than just reducing waiting times) could be a bigger factor in determining beneficiaries' satisfaction. In order to provide a better service, scheme admins should review drug stock levels and processes related to referrals regularly.
3. Eliminate as many of the administrative processes (enrolment, renewal, claiming) that frustrate beneficiaries as possible. Simplifying these processes will result in more satisfied beneficiaries even if clinical waiting times are the same.
4. Manage waiting time from an operational standpoint and have realistic expectations regarding its impact. Despite the statistical insignificance of waiting time; it is still a concern from a practical standpoint. Waiting time should be thought of in the context of general service improvements; rather than as a measurable pathway to higher beneficiary satisfaction.
5. Create continuous systems for obtaining feedback from beneficiaries. Conducting regular surveys of beneficiaries that is broader in range of potential drivers (cost, access, trust, drug availability) will enable the scheme to have more accurate knowledge of the satisfaction of its beneficiaries and to proactively address concerns.

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QUESTIONNAIRE FOR GOHEALTH SCHEME BENEFICIARIES

Introduction

Dear Respondent,

You are invited to participate in a research study investigating the quality of health care services and user satisfaction under the GoHealth Scheme in Gombe State, Nigeria. Your responses will remain confidential and will be used only for academic purposes. Please respond honestly.

Section A: Demographic Information

Question	Response Options
Age	Under 18; 18–25; 26–35; 36–45; 46–55; 56 and above
Gender	Male; Female; Prefer not to say
Educational Level	No formal education; Primary education; Secondary education; Tertiary education
Local Government Area of Residence	Open text box
Duration of enrollment in GoHealth Scheme	Less than 1 year; 1–3 years; 4–6 years; More than 6 years

Section B: Perceived Health Care Service Quality (Adapted from SERVQUAL scales; Abbasi-Moghaddam et al., 2019; Manzoor et al., 2019)

Instruction: Please indicate your agreement: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

Statement	1	2	3	4	5
Health care providers deliver services consistently and accurately.					
Medical procedures are carried out correctly the first time.					
Staff are willing to help patients promptly.					
Health workers respond quickly to requests and inquiries.					
Health care providers are knowledgeable and competent.					
I feel confident in the advice and treatment provided by staff.					
Health workers give individual attention to patients.					
Staff listen carefully to my concerns.					
The health facility is clean, well-organized, and adequately equipped.					
Information materials (brochures, notices) are clear and helpful.					



Section C: Waiting Time Experience (*Adapted from Chollom & Pwol, 2024; Amalina et al., 2025*)

Question	Response Options / Scale
Average waiting time before seeing a health provider	Less than 15 minutes; 15–30 minutes; 31–60 minutes; More than 60 minutes
I perceive the waiting time at the facility to be reasonable.	1 = Strongly Disagree ... 5 = Strongly Agree
Waiting time negatively affects my satisfaction with the service.	1 = Strongly Disagree ... 5 = Strongly Agree
Staff communication helps me cope with waiting time.	1 = Strongly Disagree ... 5 = Strongly Agree

Section D: User Satisfaction (*Adapted from Braimah et al., 2025; Abbasi-Moghaddam et al., 2019; Amalina et al., 2025*)

Statement	1	2	3	4	5
I am satisfied with the overall quality of health services I receive under the GoHealth Scheme.					
Health services meet my expectations.					
I am likely to continue using GoHealth facilities for future health needs.					
I would recommend the GoHealth Scheme services to others.					

