

## **Satisfaction with Health Care Services Among National Health Insurance Enrollees of Tertiary Institutions in Nigeria**

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### **Abstract:**

Satisfaction with health care study is one of the most important parameters by which many service providers gauged their performance and most consumers of services take several decisions concerning services or products. This study investigated the extent of satisfaction with health care services among enrollees of national health insurance NHIS. A cross-sectional survey of 167 respondents among academic and non-academic staff of tertiary institution using an adapted version of Donabedian 1988 as well as Renato, Stephanie and Monica 2015 models were conducted. After performing structural equation modeling, the result indicated that, majority 82.0% were satisfied with the health care service received. Hypotheses test revealed that Except for internal management processes construct all the constructs of structure/facility and patient- professional interaction have positive relationship with healthcare service satisfaction. It was recommended that health care providers should consider enhancing their facility structure and foster good provider-client relationship to promote consumer satisfaction. More so, consumer satisfaction study should be given priority to further enhance healthcare service businesses.

**Key words:** Health care, satisfaction, structure/facility, patient-professional interaction, internal management, tertiary institution

### **Introduction:**

A cross the globe satisfaction study is one of the most important parameters by which many service providers gauge their performance. Similarly, it is the basis upon which most consumers of services take several decisions concerning services or products. In the last decade there was considerable interest in the satisfaction and quality of health care services in Nigeria. This strong interest was prompted and sustained by a wide variety of factors. First, many studies have discovered that a lot of complaints were coming from enrollees of national health insurance scheme [NHIS] as regards to services rendered by the health care provider in many different contexts. Secondly, the world health organization (WHO) recommends that all health systems pursuing the path of patient centered care (PCC) should have a policy tailored to patient needs and expectations. Thirdly, it was posited that a sense of satisfaction with quality of care might avert enrollees'

decision to drop out of NHIS. More so, empirical studies are very important means to justify and validate satisfaction with quality of health care as one of the many aspects that may promote and increase utilization of health care services. Lastly, given the fact that staff of tertiary institutions are assumed to be more enlightened, knowledgeable than the rest of the general public it is expected that this group of enrollees would possess an excellent and accurate experience to share concerning their encounter with health care service providers under NHIS. Therefore, their perception will shed more light on the services provided by health care providers.

Recently, literature reviewed showed that there was an upsurge in the number of studies targeted at patient satisfaction with the quality of health care services under NHIS. However, most of these studies used the SERQUAL model developed by (Parasuraman, Zeithaml & Barry 1985). This despite mounting evidence that health services satisfaction can best be assessed by examining the extent of satisfaction with internal management process, patient- professional interaction and health facility/structure as proposed by Donabedian (1988) and Renato, Stephanie and Monica (2015) models. Moreover, in the context of Nigeria, several studies have examined satisfaction with health care services Ajiegbe, et al (2020); Shagaya (2015); Temitope, Olamuyiwa & Foluke, (2021). However, none have looked into satisfaction with health care services received by NHIS enrollees of tertiary institution. This shows that there is both contextual and theoretical gap that needs to be filled. Therefore, the main objective of this study was to investigate satisfaction with health care services among national health insurance's NHIS enrollees of tertiary institutions. To accomplish this the following question and hypotheses were tested. To what extent are NHIS enrollees of tertiary institution satisfied with the healthcare services they received and what factors influence their satisfaction?

H1. Internal management process positively and significantly influences satisfaction with health care services among national health insurance's NHIS enrollees of tertiary institutions.

H2. Professional – Patient Interaction Process (PPIP) positively and significantly influences satisfaction with health care services among national health insurance's NHIS enrollees of tertiary institutions.

H3. Structure/facility positively and significantly influences satisfaction with health care services among national health insurance's NHIS enrollees of tertiary institutions.

This study was conducted among academic and non-academic staff of Abubakar Tafawa Balewa University Bauchi. Variables covered were satisfaction with health care services as dependent variable while adapted indicators from two theories proposed by Donabedian (1988) and Renato, Stephanie and Monica (2015) were used to measure the independent constructs.

## LITERATURE REVIEW

### Theoretical and conceptual models.

Several theories were proposed to assess satisfaction with service quality. Among the most widely used is the SERQUAL developed by (Parasuraman, Zeithaml & Barry 1985). However, this model is a generic one and to some extent cannot be used in certain contexts. More so, given the fact that there is no consensus about standard model for use in patient satisfaction measurement therefore, this study is underpinned by two theories. A Donabedian theory and a model proposed by Renato, Stephanie and Monica in line with COSMIN (consensus-based standard for the selection of health measurement instrument) 2015. Several studies have used Donabedian theory to investigate concern about satisfaction with quality of care in health care services (Setyaningrum & Dzandu, 2024; Mba-Oduwusi et al, 2024). The model proposes that client satisfaction with health care is based upon his experience with three sets of categories namely, “structure”, “process, and “outcome” as depicted in figure 1 below (Donabedian 1988). This theory was chosen because it traces satisfaction back to specific components of the health system. Secondly, the model has been tested across diverse health systems

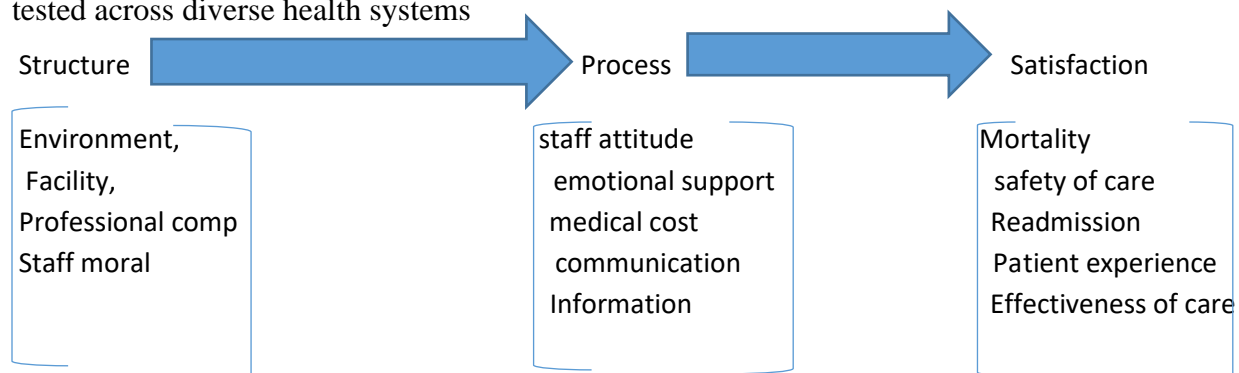


Fig 1. Donabedian 1988 model

Structure category are those aspects of care that include environment, facility, professional competence and medical staff moral; process category are aspects that include staff attitude, emotional support, medical cost, communication and information between client and care giver,

efficiency and coordination of care. Outcome category is concern with the patient final outcome after his initial contact with the health care service setting e.g. felt good or bad, satisfied or unsatisfied etc. However, given the current study's aim at gauging enrollees' satisfaction with care received, the outcome category was adapted to capture general satisfaction with care received. The second model as proposed by Renato, Stephanie & Monica (2015) came about after an extensive review of 1286 journal articles where they discovered that majority of the authors have indirectly used the model in different contexts with good outcomes. The model, though not explicitly named, showed that satisfaction with healthcare has three main dimensions i.e. patient- professional interaction, physical environment and internal management process as depicted below.

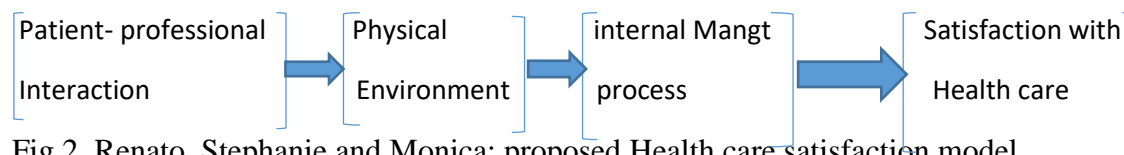


Fig 2. Renato, Stephanie and Monica: proposed Health care satisfaction model

Therefore, drawing from literature search and the two models' suggestion the following conceptual model was proposed (fig, 3)

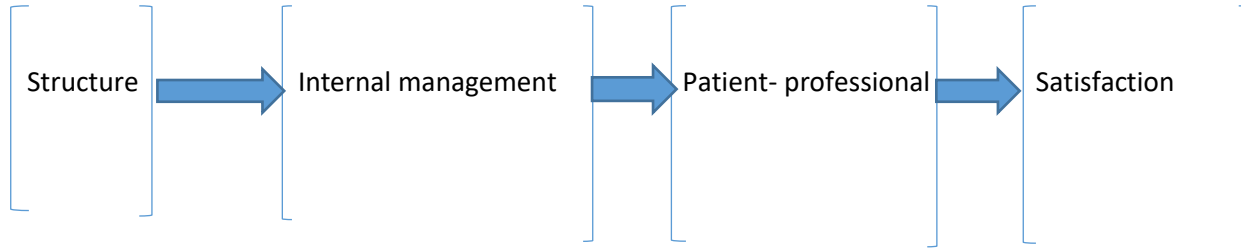


Fig.3 Researcher's conceptual model.

**Structure:** Donabedian (1988) defines structure as the professional and organizational resources associated with the provision of care. Items proposed by Donabedian under this construct were availability of equipment, drugs and staff training etc. Empirical studies have found that availability and the nature of structure can have a profound impact on patient satisfaction with health care services. Because of the context in which this study was conducted the various indicators used to measure this construct were adapted. Thus, factors such as availability of drugs/equipment, cleanliness of the provider's facility, functionality and completeness of equipment etc. were used.

**Patient – professional interaction process (PPIP):** this is a bond of trust between the patient and the health care professional who is performing the treatment (Encyclopedia. Com 2025). Patient-

professional relationships have proven to affect the health-related outcome of the patient (Amber, 2020). Evidence from previous studies show that PPIP has directly influence health outcome and patient experience (Taryat, Ramadania & Wenny, 2024; Onwumere C., et al 2024; Australian commission on safety and quality in health care [ACSQHC], 2011). Donabedian in his original model states that this construct should comprise of those things that can be done to and for the patient (Donabedian, 1988). He further proposes that items like defaulter tracing, hospital referrals etc are indicators to be included. Studies in PPIP have further highlighted some factors that were equally important in measuring this construct. For instance, Amber (2020) indicated that empathy, building trust, advocating for the patient, providing knowledgeable feedback and responding to patient unmet needs should be used. Similarly, Onwumere, et al (2024) also suggested the inclusion of effective communication, interest in patient agenda, empathy and patient involvement in care as indicators for the evaluation of PPIP construct. Based on these suggestions therefore, an adapted version of indicators was used.

Internal management process: this construct was derived from Renato, Stephanie & Monica 2015 model. It refers to set of organizational mechanisms that shape how a health care institution operates behind the scenes to influence patient satisfaction. The perspective is concerned with business processes that organizations perform without the involvement of external partners (Indeed Editorial Team, 2021). Although this construct has never been tested individually, however, several studies have used some of its manifest to gauged patient satisfaction with health care services (Ajeigbe et al 2020; Diogo et al., 2023). Indicators extracted from literature varies and include, poor registration system, waiting time at medical records section, ease of co-payment billing and settlement system, use of ICT for decision making and quality improvement, use of sign boards within the health care setting, robust admission and discharge procedures etc.

Socio demographic characteristics of respondents: these are major determinants of satisfaction found in many studies (Akafa & Iseko, 2024; Cha 2025. Ahmed, Hasan & Alam, 2024) discovered that these determinants act in various directions with substantial items found to have negative influence while others have positive influence.

Outcome/Satisfaction with care: this is a desired result of care provided by the health care service provider e.g. patient satisfaction with quality of care (Donabedian 1988). It is an important indicator of quality (Al-hilou & Suifan 2023). Previous literature has shown that satisfied patients

have greater propensity to maintain relationship with service provider, continue use of services and can even recommend health services provider to other clients (Angela, 2025). There are a variety of items or indicators that should be included in this dimension. Donabedian (1988) in his model distinguishes satisfaction domain into technical and interpersonal outcome, therefore, proposes such manifests as absence of complication, reduction in disease intensity, disability and death; satisfaction and influence of care on patient's quality of life as perceived by the patient. Therefore, satisfaction with care is expected to be influenced by earlier hypothesized variables.

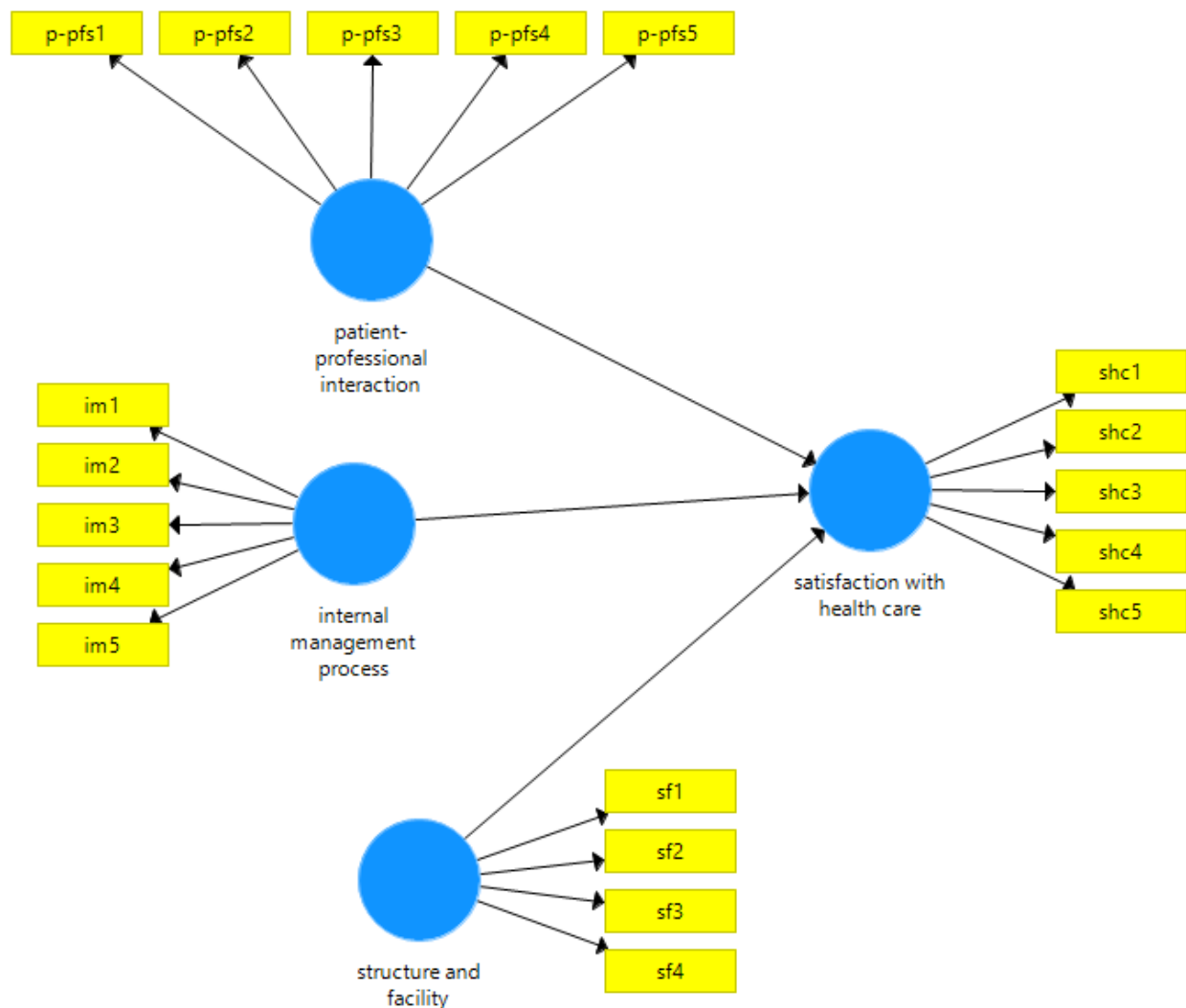


Figure 4. Researcher's conceptual framework: Source: researcher 2025. Structure: Environment and facility SF; Pt-Profss Inter: patient –professional interaction p-pfs; internal management process imp; satisfaction with health careshc.

## Methodology:

This study was cross-sectional quantitative survey research. It was conducted at Abubakar Tafawa Balewa University Bauchi, Nigeria (ATBU). Entire academic and non-academic staff of the university who joined NHIS were the participating population numbering 1922 (University Human Resource Depart, 2021). The university was selected because it was among the first tertiary institution in Nigeria to join NHIS. Sample size was determined based on Hair, Hult, Ringle & Sarstedt (2014) suggestion for using G\* power analyses derived from Cohen (1992). Hence, given researcher's intention to detect minimum  $R^2$  value of 0.10 at 5% level of significance assuming a statistical power of 80% and given the maximum number of arrows pointing at a construct in the partial least square PLS path model is 5, the sample size was arrived at 147. However, an attrition rate of 10% was added to take care of nonresponse and incomplete questionnaires, thus the sample size was finally arrived at 162 respondents. Sample was shared among the staff proportionally using the  $p/P \times n$  formula. For academic staff the following was obtained  $(922/1922 \times 162) = 77.7$  which was rounded to 78. For non-academic  $(1000/1922 \times 162) = 84$ . A sampling frame of active enrollees from the university clinic was obtained. Sample was randomly stratified by enrollees category of academic and non-academic staff to ensure diversity.

The research instrument was questionnaire which consisted of two parts. The first part contains questions pertaining to enrollees' demographic characteristics. The second section had 15 indicators measuring the latent variables mentioned in figure 4 above. The items in the questionnaire were a combination of dichotomous as well as five (5) point likert scale types of questions designed to answer the research objectives. The selection of these questionnaire design was supported by (SPSS 2022; Hair et al.2014). Content validity was examined by experts from ATBU, and necessary corrections were made where it was highlighted. In the statistical analysis, hypotheses were tested using **Measurement model mode A** perspectives i.e. reflective measurements of SmartPLS 3 “Boenningstedt: SmartPLS GmbH”. The structural equation model was analyzed in a two-step process (i) Analysis of the measurement model (ii) Analysis of the structural model. The first process described the results for the measurement model, which specifies the relationships between constructs and their indicators, while the second described the relationships between constructs or the hypotheses of the model.

## Results



A total of 122 out of 167 enrollees participated in the survey, representing 73% response rate. Table one presents description of respondents' demographic characteristics. The mean age among the respondents was  $43.48 \pm 8.84$ . Majority of the respondents were males 76.2%, married 95.1%, and attended tertiary level education 82.8%. 52.5% were academic staff, 84.8% have health status ranging from good to excellent. The most common sickness among respondents' family members was malaria 57.4% followed by typhoid fever 22.1%. Table 1 also presents the distribution of respondents according to satisfaction with health care service. Overall 100 respondent representing 82% were satisfied with the healthcare received. It was further observed that among respondent gender, males 71 felt more satisfied when compared with females 12. Among respondent's cadre nonacademic staff 52 were found to be satisfied than academic staff 48. Married couples (100) were found to be the majority when compared with singles 6. Those with tertiary level qualifications 81 were observed to be more satisfied when compared to respondents with secondary and other level of education 19. More so, it was observed that those whose health status was reported good, very good and excellence 86 were satisfied when compared to those with poor and fair health status 14. Finally, those whose common sickness was malaria 53 and typhoid 23 were the majority in the common sickness category in terms of satisfaction with health care service.

Table 1. Distribution of demographic characteristics and satisfaction with health care services

Demographic characteristics	Frequency	Percentage	Satisfied with health services	Dissatisfied with health services
<b>Gender</b>				
Male	93	76.2	22	71
Female	29	23.8	0	12
<b>Marital status</b>				
Singles	6	4.9	0	6
Married	116	95.1	22	94
<b>Level of Education</b>				
Secondary	6	4.9	0	6
Tertiary	101	82.8	20	81
Others	15	12.3	2	13
<b>Cadre</b>				
Academic	64	52.5	16	48
Non-academic	58	47.5	6	52
<b>Health status</b>				
Poor	14	11.5	5	9
Fair	5	4.1	0	5



Good	30	24.6	2	28
Very good	41	33.6	13	28
Excellent	32	26.6	2	30
<b>Common sickness in your family</b>				
Malaria	70	57.4	15	53
Typhoid	27	22.1	2	23
Diarrhea	5	4.1	1	4
Respiratory infection	10	8.2	0	10
Others	10	8.2	4	5
<b>Total percentage of respondents satisfied</b>	<b>100</b>			82%
<b>Total percentage of respondents not satisfied</b>	<b>22</b>			12%

Source: Field survey 2025

## Hypotheses test presentation

PLS-SEM Measurement Model (Composite Mode A) was used to test the various hypotheses. The composite measurement model in mode A was assessed in terms of individual item reliability, construct reliability, convergent validity, and discriminant validity. First, the individual item reliability was analyzed through the loadings. As Figure 2 and table 2 illustrates imp1 variable was removed because of the low negative value. However, except for p-pfs4, p-pfs5 and imp2, all loadings exceeded the cut-off value of 0.600 as recommended by Chin 1989. The three variables were retained in order not upset the analysis as recommended by Heir et al 2014. Secondly, the result in table 3 indicates that the convergent validity requirement using average variance extracted (AVE) was satisfied as all the values are well above minimum level of 0.50. Table 4 shows that the discriminant validity which measures the extent to which a construct is truly distinct from another construct by empirical standard was measured using Fornell-Lacker criterion. From the table, it is evident that all the AVE are greater than the correlation of these constructs with other latent variables in the path model thus, discriminant validity requirement is satisfied.

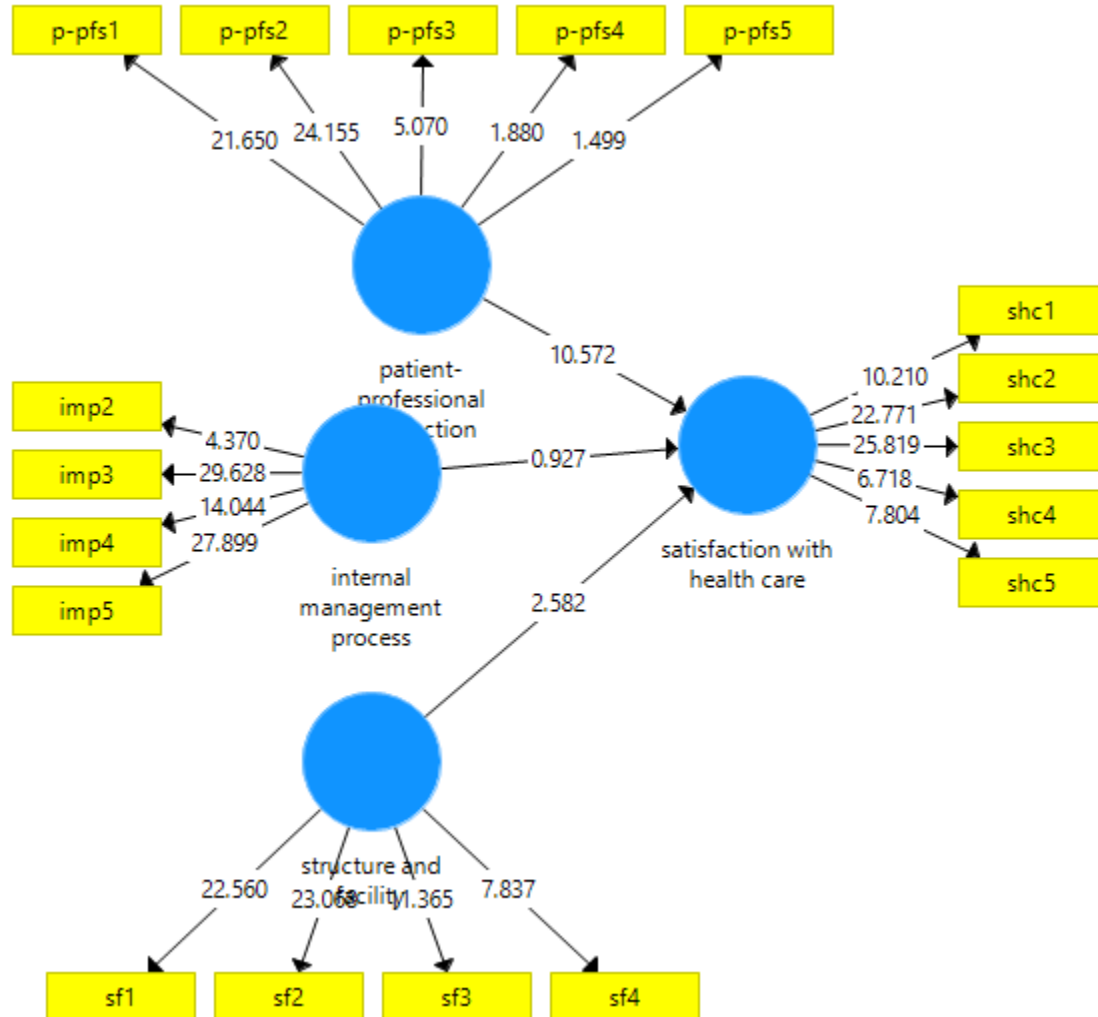


Table. 2 Outer loadings

	internal management process	patient-professional interaction	satisfaction with health care	structure and facility
imp2	0.465			
imp3	0.823			
imp4	0.752			
imp5	0.825			
p-pfs1		0.776		
p-pfs2		0.788		
p-pfs3		0.567		

p-pfs4		0.224		
p-pfs5		0.199		
sf1				0.821
sf2				0.817
sf3				0.668
sf4				0.642
shc1			0.672	
shc2			0.770	
shc3			0.731	
shc4			0.687	
shc5			0.587	

Table 3 construct reliability and validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
internal management process	0.713	0.777	0.815	0.535
patient-professional interaction	0.732	0.782	0.846	0.795
satisfaction with health care	0.707	0.738	0.804	0.599
structure and facility	0.721	0.732	0.829	0.550

Table 4. Fornell-lacker criterion

	internal management process	patient-professional interaction	satisfaction with health care	structure and facility
internal management process	0.732			
patient-professional interaction	0.586	0.892		
satisfaction with health care	0.615	0.748	0.777	
structure and facility	0.696	0.572	0.673	0.742

Structural Model

Given that the measurement of the constructs in terms of quality criteria were appropriate, the assessment of the structural model was conducted. Path coefficients and their 5,000 resampling bootstrap significance levels are reported in Table 5 and Figure 1. The result suggests internal management process does not have a statistical significant effect on health care satisfaction among health insurance enrollees ( $B = 0.055$ ,  $p = 0.354$ ,  $t$  value .927 less than 1.96). Therefore, hypotheses H1 is not supported. It was further discovered that patient- professional interaction has a significant positive effect on health care satisfaction among health insurance enrollees ( $B = 0.698$ ,  $p = 0.00$ ,  $t$  value 10.572 greater than 1.96) thus, for every one-unit increase in patient- professional interaction, health care satisfaction increases by about 70%. Hypothesis H2 is supported. It was also observed that structure and facility has a positive significant effect on health care satisfaction among health insurance enrollees ( $B = 0.216$ ,  $p$  value 0.010,  $t$  value 2.582). This goes to suggest that for every one-unit increase in structure and facility, health care satisfaction among health insurance enrollees increases by about 22%. The coefficient of determination ( $R^2$ ) is 0.822, thus indicating that the combined endogenous construct explains 82.2% of the variation of the exogenous construct of satisfaction with health care. More so, since the  $R^2$  value exceeded 0.1 for the endogenous latent variable, the constructs had an acceptable quality of predictive power.

Table 5. Structural model result

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
internal management process -> satisfaction with health care	0.055	0.073	0.059	0.927	0.354
patient-professional interaction -> satisfaction with health care	0.698	0.693	0.066	10.572	0.000
structure and facility -> satisfaction with health care	0.216	0.209	0.084	2.582	0.010

## Discussion:

Previously, it was stated that the purpose of this work was to examine the extent and factors associated with satisfaction of health care services among national health insurance's NHIS enrollees of tertiary institutions. It was observed that 100 respondents representing 82% of both academic and non-academic staff of the institution were satisfied with the health care they received from their providers. This reveals that enrollees' satisfaction with health care was high. But the finding was at variance with the result obtained by Shafiu, et al (2020) where they discovered that only 42% of their respondents were satisfied with health

care services they received. However, it was in line the finding of Jinsong, Xiaowei, Jianwei, Haini, Qian & Hao (2021) in which they discovered that Urban Employee Basic Medical Insurance enrollees in china had a higher degree of satisfaction with insurance on average ( $P < 0.01$ ).

Three hypotheses were proposed and tested in this study. Of the three hypotheses tested the influence of patient-professional interaction, and structure/facility on satisfaction with healthcare services was significant. This finding fits well with Donabedian theory, and consistent with the theory core proposition that better structures and smoother processes yield better outcomes (Donabedian 1966). It further underscores that patient experience care mostly through visible processes and physical environment. This finding was in tandem with result of Taryat, Ramadania & Wenny (2024) where they discovered a significantly higher percentage of their respondents satisfied with hospital environment and facilities thereof. Similar discovery was revealed by María & Alicia (2019) in their study of patient Satisfaction in the Spanish National Health Service using Partial Least Squares Structural Equation modelling. More so, Temitope & Foluke (2021) also discovered that about 50.9% of their respondents were satisfied with the structure as well as the health care received from their clinics. The positive relationship may be due to the fact that the main provider of health care to these respondents is the university clinic which tends to have good facilities and equipment when compared with other hospitals. More so, practically, in the field, patients usually judge care by what they encounter. For instance, courteous doctors, clear explanations clean waiting areas, short queues may further explain discovery. While poor hospital staff attitude was a source of great concerned with most people, however, with respect to the second hypothesis, it was found that significant relationship exists between the patient-professional interaction and satisfaction with health care service. This finding may be as a result of the fact that most respondents in this study visit university clinic which tend to have older staff that were familiar with the enrollees or it may be that staff were worn by management to take the issue of patient courtesy seriously as when they lose patient because of staff poor attitude they may also lose revenue accruing to the facility. A similar result was also reported by Ajeigbe,et al (2020) where 91.14% of their respondents described the attitude of hospital staff as a source satisfaction with health care they received. Temitope & Fokulu (2021) have also discovered that respondents reported some significant level of satisfaction with health care as a result of patient- staff interaction. Internal management process may be a kind of added value to the hospital main activity; however, this study did not find positive relationship between internal management process and satisfaction with health care services. This sort of finding is not peculiar to this study only. Katharine, Anna, Amanda & Rebecca (2023) also discovered that internal management process of information and support do not relate well with health care service satisfaction among their respondents. However, it was at variance with result obtained by Kathryn, David & Susan (2024), where they found that hospital leadership, clinical quality and process

quality were excellent determinants of patient satisfaction. It was also at variance with result reported by Mitra, Mosoomah, Neda & Futemeh (2021) in their study of patient satisfaction with hospital services after implementation of the health system in Iran.

## Conclusion

Patients' satisfaction with health care service is an important outcome that reflects the quality of health care provided in a health facility. This study reported patient satisfaction with health care with an adapted Donabedian (1988) as well as a model proposed by Renato, Stephanie and Monica (2015) among enrollees of Abubakar Tafawa Balewa University, Bauchi. Despite the higher percentage of the overall satisfaction with health care and the expression of great satisfaction with the professional–patient relationship, and availability of health facility structure, the study, however, found that internal management process did not relate well with health care service satisfaction. This study has contributed in operationazition of the combine models of Donabedian and Renato, Stephanie and Monica in health care satisfaction study which is the first of its kind in this context.

## Recommendations

Although the proposed constructs of professional-patient interaction and health facility structure were found to positively and significantly influence satisfaction with health care however, internal management process did not relate positively with health care services satisfaction. In view of this therefore, NHIS should call on health care providers to pay more attention and improve their services along this line. Future researchers needs to investigate these variables in another context as most of the respondents in this study were homogeneous in religion and culture. Given that the relationship between internal management process and satisfaction was insignificant future researchers may consider measuring internal management with patient-visible indicators. They may also consider adopting mixed-method design to uncover hidden ways internal process may be affecting satisfaction.

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