

# Structural Equation Modeling of Patient Experience, Quality of Care and Compliance to Treatment

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## Abstract

*Structural Equation Modeling (SEM) is a series of statistical methods that allow complex relationships between one or more independent variables and one or more dependent variables. With renewed concern about the quality of health care there is a need for improved surveillance tools and a focus on special groups. This study formulated a model of patient experience, quality of care and compliance to treatment using SEM of some exogenous, endogenous and mediating variables that influence health care delivery in general. Questionnaire was administered to a sample of 250 elderly patients in some key general and tertiary Institution hospitals. Driven by the data collected on the health care of patients, A combination of SPSS and LISREL 8.80 were adopted for the analysis. The result of the fitted Model of the Latent Independent Variable PE and Latent Dependent Variable HS showed that PE contributed insignificantly to HS ( $\beta = -0.0509$ ;  $t = -1.76$ ;  $P > .05$ ). This means that PE has negative impact on HS. The results of the SEM revealed that all paths were significant based on large sample size. In conclusion, Structural equation modeling is useful in the drive towards quality patient health care and their compliance The study also established that demographic variables are significant to patient experience.*

**Keywords:** *Compliance to Treatment, Factor Analysis, LISREL, Patient Experience, Quality of Care, Structural Equation Models.*

## 1. Introduction

Structural Equation Modeling (SEM) techniques are considered today to be a major component of applied Multivariate statistical analysis and are used by Biologists, Economists, Educational researchers, Medical researchers and a variety of other social and behavioral scientists. The use of SEM helps in solving medical problem and this incorporate Patient centered informatics wellbeing education and patient instructions in the hospitals. Hospitals are considered as an integral part of healthcare industry including health as whole (Public Health), Pharmaceuticals and other associated fields. To make a hospital setup and its environment friendly for the patients are the big challenges nowadays. Quality interventions have given a new insight and scope for improvements, not only the services of the hospitals but also to make great structure. Few accreditation agencies in the field of Hospital accreditation are working day and night to help healthcare providers directly to improve the hospital services qualities and make a healthy and safe environment hospital-wide and set a benchmark for other hospitals. (Andersson, 2017).

Currently, there are several definitions of patient experience which reflect that patients are very clear about what makes a good and poor experience. A positive patient experience is defined by the Department of Health (USA) as “getting good treatment in a comfortable, caring and safe environment delivered in a calm and reassuring way; having information to make choices, feel confident and feel in control; being talked to and listened to as an equal

and being treated with honesty, respect and dignity” (Krot and Rudwaska, 2016). Patient experience could also be as “feedback from patients on ‘what actually happened’ in the course of receiving care or treatment, both the objective facts and their subjective views of it. The factual element is useful in comparing what people say they experienced against what an agreed care pathway or quality standard says should happen. The opinion element tells you how patients felt about their experience and helps to corroborate (or otherwise) other quality measures.

According to Edward *et al.* (2011), patients’ experiences surveys have been adapted from consumer surveys used in marketing. They measure aspects of care that are important to patients. However, which aspects should be measured and in what ways is a recurring problem (Sliwa and Okane, 2011). According to Roland (2012), it is important to determine what should be measured, Quality health care is defined by the Agency for Healthcare Quality and Research as doing the right thing, at the right time, in the right way, for the right person and having the best possible results. This means that patients receive the appropriate services they need to help them stay healthy and recover from illness and do not receive unnecessary tests or procedures. The inadequacies of the health-care systems in some areas explain how patients lack quality of health care system (Bagbe *et al.*, 2019). From the empirical review of related literature, few of the study looked at patient’s experience, quality of care and compliance to treatment in Nigeria and any other part of the world. Majority of the studies applied survey method to gather their data and also many of the articles accessed applied simple descriptive analysis. It is expected that this study will shed more light into the modeling of patient satisfaction and compliance of treatment using Structural Equation Models (SEM). This study will demonstrate the application of structural equation model by establishing the content to which factors such as demographic variable health status and compliance predict the outcome measure for the quality of health services and the objectives of the study are to: (i) estimate the parameter of the exogenous, endogenous variables and mediating variables that influence healthcare delivery in general. (ii) evaluate the predictive ability of formulated models using some latent constructs and manifest variables on the captured variables and the following research questions are asked in this study: (i) what is the perception of patient’s experience in the health care centres in southwest, Nigeria? (ii) what are the qualities of care in the health centres in southwest, Nigeria? (iii) What is the compliance level of patient’s treatment in southwest, Nigeria?

This study will serve Nigerian policy makers and health managers keen to provide and maintain high standard of health care to the residents of the country.

## 2. Literature Review

A model is an appropriate representation of a given part of related literatures, the study or understanding of the part it facilitates. A structural equation modeling of patient experience is simply describing the feedback of a patient on feedback from patients on ‘what actually happened’ in the course of receiving care or treatment, both the objective facts and their subjective views of it. The factual element is useful in comparing what people say they experienced against what an agreed care pathway or quality standard says should happen. The opinion element tells how patients felt about their experience and helps to corroborate (or otherwise) other quality measures”. Quality health care is defined by the Agency for Healthcare Quality and Research as doing the right thing, at the right time, in the right way, for the right person and having the best possible results. This means that patients receive the appropriate services they need to help them stay healthy and recover from illness and do not receive unnecessary tests or procedures (Bagbe *et al.*, 2022).

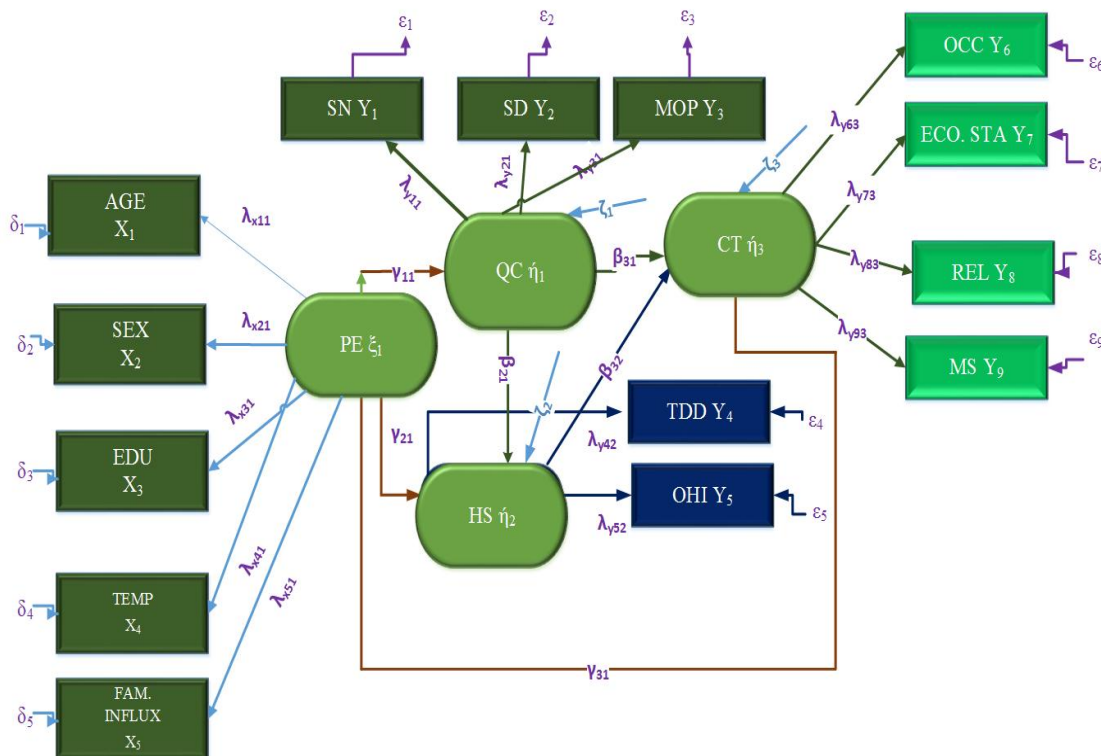
One thing that can have effect on outcome measure of quality of health care is the compliance or noncompliance of patient to treatment. Noncompliance has been reported across many diseases. Failure to comply implies the absence of key inputs in health production (Keller *et al.*, 1982; Ellickson *et al.*, 1999). In addition, noncompliance may necessitate more expensive treatment later. It follows that there has been an increase in the interest in patient compliance in the past two decades (Wosinska, 2005).

In general, compliance is defined as following or adhering to medical advice (Lien *et al.*, 2010). It was reported by (Begg, 1984), that 6–20% of patients do not even redeem their prescriptions. In a document by Smith and Yawn (1994), 19–28% of appointments are cancelled or missed, while Sellers *et al.* (2009), laments that 70% of clients in behavioral programs (such as substance abuse or diet control) fail to complete the programs. Noncompliance also may lead to medical errors because physicians may be misinformed about patients’ behaviours. The evidence suggests that lack of compliance leads to negative health outcomes and higher healthcare costs. In one study, noncompliance is claimed to lead to 125,000 premature deaths each year in the United States alone (Loden and Schooler, 2000). The cost of noncompliance in the U.S. due to hospital re-admissions and lost productivity has been estimated at around \$100 billion a year (Johnson and Bootman, 2015).

### 3. Materials and Methods

#### 3.1 Collection and Exploration of Data

A questionnaire comprising of Sixty- one (61) questions was designed for this research. The questionnaire contains information on demographic, patience experience, quality of care and compliance variables. The data was administered on two hundred and fifty (250) patients and the data emanating from it is analyze for estimation of such parameters as regression coefficient and the factor loadings. The data for this research were collected from four (3) different hospitals across four (3) states in Southwestern Nigeria, namely State Specialist Hospital, Okitipupa, Ondo State. Olabisi Onabanjo University Teaching Hospital (OOUTH), Sagamu, Ogun State) and Ladoke Akintola Teaching Hospital, Asubiaro, Osun State, Nigeria. The data collected consisting of two hundred and fifty (250) samples of one hundred (100) patients from State Specialist Hospital, Okitipupa, one hundred (100) patients from Olabisi Onabanjo University Teaching Hospital (OOUTH), Sagamu and also fifty (50) patients from Ladoke Akintola Teaching Hospital, Asubiaro, Osun State, Nigeria. The data were fitted to Structural equation model (SEM) described in model (1) and analysed for estimation of such parameters.



**Figure 1:** Path Model of Patient Experience, Quality of Care and Compliance to Treatment.

The structural equations are the variables from the latent exogenous and endogenous variables and the measurement equation and the variables from the observed or measured variable: that is,

Patient Experience (PE)  $\xi_1$ , for the exogenous latent construct. For endogenous variables, there are Quality of care (QC)  $\eta_1$ , Health status (HS)  $\eta_2$  and Compliance to treatment (CT)  $\eta_3$ . The manifest or measurement variables linked to patient are SEX represented by  $X_1$ , Education ( $X_2$ ), Temperament, ( $X_3$ ) Family influence ( $X_4$ ). Manifest variables linked to health services are Satisfaction with Nurses ( $Y_1$ ), satisfaction with Doctors ( $Y_2$ ), Mode of payment ( $Y_3$ ), Type of disease diagnosed ( $Y_4$ ), Type of Hospital visited ( $Y_5$ ), Other health issues ( $Y_6$ ) Economics status ( $Y_7$ ), Religious ( $Y_8$ ) and Marital status ( $Y_9$ ). The structural and measurement equation can be derived to suit the model represented in Figure 1.

Therefore, from the Figure 1, the structural equations could be written as

$$\eta_1 = \gamma_{11} \xi + \beta_{21} \eta_2 + \zeta_1 \tag{1}$$

$$\eta_2 = \gamma_{21} \xi + \beta_{12} \eta_1 + \zeta_2 \tag{2}$$

$$\eta_3 = \gamma_{31} \xi + \beta_{32} \eta_1 + \beta_{31} \eta_2 + \zeta_3 \tag{3}$$

The matrix notation of the Structural equation becomes

$$\begin{pmatrix} \eta_1 \\ \eta_2 \\ \eta_3 \end{pmatrix} = \begin{bmatrix} \gamma_{11} \\ \gamma_{21} \\ \gamma_{31} \end{bmatrix} [\xi] + \begin{bmatrix} 0 & \beta_{21} & 0 \\ 0 & \beta_{12} & 0 \\ 0 & \beta_{31} & \beta_{32} \end{bmatrix} \begin{bmatrix} \eta_1 \\ \eta_2 \\ \eta_3 \end{bmatrix} + \begin{bmatrix} \zeta_1 \\ \zeta_2 \\ \zeta_3 \end{bmatrix}$$

The ‘0’ coefficient in  $\beta$ 's are constraints in the model. Then from the matrix notation becomes:

$$\eta = \beta \eta + \Gamma \xi + \zeta \tag{4}$$

The measurement equation of this model is:

$$\begin{aligned} X_1 &= \lambda_{x1} \xi + \delta_1 ; & X_2 &= \lambda_{x2} \xi + \delta_2 ; & X_3 &= \lambda_{x3} \xi + \delta_3 \\ X_4 &= \lambda_{x4} \xi + \delta_4 ; & X_5 &= \lambda_{x5} \xi + \delta_5 \end{aligned} \tag{5}$$

And for the Y observed variables

$$\begin{aligned} Y_1 &= \lambda_{y1} \eta_1 + \varepsilon_1 ; & Y_2 &= \lambda_{y2} \eta_1 + \varepsilon_2 ; & Y_3 &= \lambda_{y3} \eta_1 + \varepsilon_3 \\ Y_4 &= \lambda_{y4} \eta_2 + \varepsilon_4 ; & Y_5 &= \lambda_{y5} \eta_2 + \varepsilon_5 ; & Y_6 &= \lambda_{y6} \eta_2 + \varepsilon_6 \\ Y_7 &= \lambda_{y7} \eta_3 + \varepsilon_7 ; & Y_8 &= \lambda_{y8} \eta_3 + \varepsilon_8 ; & Y_9 &= \lambda_{y9} \eta_3 + \varepsilon_9 \end{aligned} \tag{6}$$

The matrix notation of the measurement equation becomes

$$\begin{bmatrix} X_1 \\ X_2 \\ X_3 \\ X_4 \end{bmatrix} = \begin{bmatrix} \lambda_{x1} \\ \lambda_{x2} \\ \lambda_{x3} \\ \lambda_{x4} \end{bmatrix} [\xi] + \begin{bmatrix} \delta_1 \\ \delta_2 \\ \delta_3 \\ \delta_4 \end{bmatrix}$$

$$\begin{bmatrix} Y_1 \\ Y_2 \\ Y_3 \\ Y_4 \\ Y_5 \\ Y_6 \\ Y_7 \\ Y_8 \\ Y_9 \end{bmatrix} = \begin{bmatrix} \lambda y_1 & 0 & 0 \\ \lambda y_2 & 0 & 0 \\ \lambda y_3 & 0 & 0 \\ \lambda y_4 & 0 & 0 \\ \lambda y_5 & 0 & 0 \\ \lambda y_6 & 0 & 0 \\ \lambda y_7 & 0 & 0 \\ \lambda y_8 & 0 & 0 \\ \lambda y_9 & 0 & 0 \end{bmatrix} \begin{bmatrix} \eta_1 \\ \eta_2 \\ \eta_3 \end{bmatrix} + \begin{bmatrix} \varepsilon_1 \\ \varepsilon_2 \\ \varepsilon_3 \\ \varepsilon_4 \\ \varepsilon_5 \\ \varepsilon_6 \\ \varepsilon_7 \\ \varepsilon_8 \\ \varepsilon_9 \end{bmatrix}$$

The “0” coefficient in  $\lambda_y$  are constraints in the model. Then the matrix  $X$  and  $Y$  becomes:

$$X = \lambda_x \xi + \delta \tag{7}$$

$$Y = \lambda_y \eta + \varepsilon \tag{8}$$

### 3.2 Factor Analysis Model

A general factor analysis takes the form of equations (7) or (8) which is:

$$X = \lambda_x \xi + \delta$$

Which is from equation (5) with  $Vx = 0$  and  $\lambda x = \lambda$ , Then,

$$\Sigma = Vx = \Lambda \phi \Lambda' + \theta \delta \tag{9}$$

Since  $\phi = V(\xi)$  is a positive definite matrix, there exist a matrix  $A$  such that  $AA' = \phi$ .

Letting  $\Lambda^* = \Lambda A$ , equation (9) yields

$$\Sigma = \Lambda^* \Lambda^{*'} + \theta \delta \tag{10}$$

Without loss of generality, equation (9) becomes

$$\Sigma = \Lambda \Lambda' + \theta \delta \tag{11}$$

There exist a rotation matrix  $R$  such that  $RR' = I$  where  $I$  is the identity matrix.

If  $\Lambda^{**} = \Lambda R$ , then

$$\Lambda^{**} \Lambda^{**'} + \theta \delta = \Lambda \Lambda' + \theta \delta = \Sigma \tag{12}$$

From the latent exogenous variable of this study, which is equation (7), where  $\xi, \delta_1, \delta_2, \delta_3$  and  $\delta_4$  are independent random variables with expected value zero,  $var(\xi) = 1, var(\delta_1) = \theta \delta_1, var(\delta_2) = \theta \delta_2, var(\delta_3) = \theta \delta_3$  and  $var(\delta_4) = \theta \delta_4$ . The coefficients  $\lambda_1, \lambda_2, \lambda_3$  and  $\lambda_4$  are none zero constants. The standardized observed variables implied that;  $\theta \delta_i = 1 - \lambda_i^2$  for  $i = 1, 2, 3, 4$ , leaving four elements in  $\theta = \{\lambda_1, \lambda_2, \lambda_3, \lambda_4\}$ .

### 3.3 Covariance Algebra

The idea behind SEM is that the hypothesized model has a set of underlying parameters that correspond to (1) the regression coefficients, and (2) the variances and covariances of the independent variables in the model. These parameters are estimated from the sample data as a “best guess” about population values. The estimated parameters are then combined by means of covariance algebra to produce an estimated population covariance matrix.

Covariances are a function of a set of model parameters:  $\Sigma = \Sigma(\theta)$ . The covariances between two random variables

$$X_1 \text{ and } X_2 \text{ is cov } (X_1 X_2) = E (X_1)(X_2 - E(X_2)) \tag{13}$$

The variances is a special covariance of a variable with itself

$$\text{Cov } (X, X) = (X - E(X)) X - E(X) = \text{var } (X) \tag{14}$$

Therefore, by applying covariances algebra to equation (7), then,

$$\text{Var } X = \text{Cov } (X, X) = E (XX') \tag{15}$$

Taking the expectation of equation (3.55), it gives

$$\lambda_x [ E (\xi^2 ')] \lambda_x' + [ E (\delta \xi')] \lambda_x' + \lambda_x [ E (\xi \delta') + E (\delta^2') \tag{16}$$

$$\lambda_x [\phi] \lambda_x' + \text{cov } (\delta, \xi) \lambda_x' + \lambda_x \text{cov } (\varepsilon, \delta) + \theta_\delta \tag{17}$$

Since the error terms of the indicators are independent of the exogenous variables, then, equation (17) becomes

$$\text{Cov } (X, X) = \lambda_x \phi \lambda_x' + \theta_\delta \tag{18}$$

and for the Y

$$\text{Cov } (y, y) = E (y y') \tag{19}$$

$$E [(\lambda_y \eta + \varepsilon) (\lambda_y \eta + \varepsilon)'] \tag{20}$$

Taking the expectation of equation (3.59) and transpose the endogenous variable and the error term, the equation (19) gives

$$\lambda_y [ E (\eta^2 ')] \lambda_y' + [ E (\varepsilon \eta')] \lambda_y' + \lambda_y [ E (\eta \varepsilon')] + E (\varepsilon^2') \tag{21}$$

$$\lambda_y \text{cov}(\eta, \eta) \lambda_y' + \text{cov}(\varepsilon, \eta') \lambda_y' + \lambda_y \text{cov}(\eta, \varepsilon' + \theta) \tag{22}$$

The errors  $\varepsilon$  are independent of the endogenous variables, then the equation becomes:-

$$\text{Cov } (y y) = \lambda_y [\text{cov}(\eta, \eta)] \lambda_y' + \theta \tag{23}$$

Now, the structural equation of this model which is equation (3.5) becomes:

$$(1-B)\eta = \Gamma\xi + \zeta \tag{24}$$

$$\eta = (1 - B)^{-1}(\Gamma\xi + \zeta) \tag{25}$$

The variance of equation (24) to will give

$$\text{Cov } (\eta, \eta) = E[(1 - B)^{-1}(\Gamma\xi + \zeta)][(1 - B)^{-1}(\Gamma\xi + \zeta)'] \tag{26}$$

Taking the expectation value of the both sides of equation (3.65), it becomes

$$[(1 - B)^{-1}E[\Gamma\xi^2 \Gamma' + \zeta\xi' \Gamma' + \Gamma\xi\zeta' + \zeta^2'] (1 - B)^{-1}] \tag{27}$$

$$(1 - B)^{-1}(\Gamma\phi\Gamma' + (1 - B)^{-1}) \tag{28}$$



The covariances of X,Y becomes :

$$\text{Cov}(x, y) = E(x, y)' \tag{29}$$

$$\lambda_x E[\xi \eta'] \lambda_y' + E[\delta \eta'] \lambda_y' + \lambda_x E[\xi \epsilon'] + E[\delta \epsilon'] \tag{30}$$

$$\lambda_x E[\xi \eta'] \lambda_y' \tag{31}$$

Taking the derivation of  $\eta$  and put it into equation (31), it becomes,

$$\lambda_x E[\xi(1 - B)^{-1}(\Gamma\xi + \zeta)'] \lambda_y' \tag{32}$$

$$\lambda_x \phi \Gamma'(1 - B)^{-1} \lambda_y' \tag{33}$$

Each column of the  $\lambda$  matrices generally contain an entry that is set to 1 and also the scale of the corresponding latent variable and the variances of exogenous latent variable in  $\phi$  might also be fixed typically to 1.

#### 4. Results and Discussion

Structural Equation models of patient experience, quality of care and compliance to treatment was formulated by identifying the exogenous, endogenous and mediating variables that influence the health care delivery in general. The data set contains information on 250 patients who visited hospitals for medical attention between January 2022 and December 2022 which were given in the table 1. The respondent of the study were the inpatients and outpatients from public hospitals. Questionnaires were used to evaluate their experience and compliance level for the service provided.

**Table 1.** Descriptive Statistics of Variables of Interest for First Stopping Time Data (N=250)

Variables	Mean	Standard Deviation	Minimum	Maximum	Variances	Skewness
AGE	58.4360	8.73333	42.00	82.00	76.271	.145
SEX	1.3320	.47188	1.00	2.00	.223	.718
EDU	3.6040	.96066	1.00	5.00	.923	-.970
TEMP	11.6680	1.82573	5.00	16.00	3.331	-.642
CFINF	7.4160	.61027	6.00	8.00	.372	-.530
OFINF	5.6400	.55101	4.00	6.00	.304	-1.277
SN	1.4280	.49578	1.00	2.00	.246	.293
SD	11.5370	3.50428	6.00	43.00	12.280	5.537
MOP	3.4890	2.73783	1.00	42.00	7.496	11.205
TDD	2.8360	1.63579	2.00	10.00	2.676	2.564
THV	1.9680	1.13673	1.00	4.00	1.292	.758
OHI	1.1920	.85678	1.00	9.00	.734	7.767
ECOSTA	2.0120	.46120	1.00	3.00	.213	.045
OCC	3.3680	1.62578	1.00	5.00	2.643	.497
REL	1.4080	.68952	1.00	4.00	.475	1.780
MS	2.1480	.44597	2.00	4.00	.199	3.113

Source: SPSS Output Compiled by Bagbe et al., 2022.

**Table 2.** Fitted Model of Latent Independent Variable PE and Latent Dependent Variable QC  
 (QC = 17.6209 + 0.0213PE)

<b>Dependent Variable: QC</b>				
<b>Method: Least Squares</b>				
<b>Included observations: 250</b>				
<b>Variable</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>Prob.</b>
C	17.62092	1.048333	16.80851	0.0000
PE	0.021265	0.017328	1.227217	0.2209
R-squared	0.006036	Mean dependent var		18.89600
Adjusted R-squared	0.002028	S.D. dependent var		2.209232
S.E. of regression	2.206991	Akaike info criterion		4.429105
Sum squared residual	1207.960	Schwarz criterion		4.457276
Log likelihood	-551.6381	Hannan-Quinn criterion.		4.440443
F-statistic	1.506062	Durbin-Watson stat		2.129467
Prob (F-statistic)	0.220905			

**Source:** Gretl Output Compiled by Bagbe et al., 2022.

The result revealed an insignificant influence of PE on HS [ $R^2=0.012$ ,  $F = 3.199$ ,  $P >.05$ ] Table 3. This indicated that PE contributed insignificantly (1.2%) to HS. In other words, PE is not important in our understanding of HS. The independent contribution showed that PE contributed insignificantly to HS ( $\beta = -0.0509$ ;  $t = -1.76$ ;  $P >.05$ ). This means that PE has negative impact on HS.

**Table 3.** Fitted Model of the Latent Independent Variable PE and Latent Dependent Variable HS  
 (HS = 12.7609 - 0.05091PE)

<b>Dependent Variable: HS</b>				
<b>Method: Least Squares</b>				
<b>Included observations: 250</b>				
<b>Variable</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>Prob.</b>
C	12.76085	1.722096	7.410070	0.0000
PE	-0.050915	0.028465	-1.788680	0.0749
R-squared	0.012736	Mean dependent var		9.708000
Adjusted R-squared	0.008756	S.D. dependent var		3.641397
S.E. of regression	3.625421	Akaike info criterion		5.421786
Sum squared residual	3259.632	Schwarz criterion		5.449958
Log likelihood	-675.7232	Hannan-Quinn criterion.		5.433124
F-statistic	3.199376	Durbin-Watson stat		1.322753
Prob(F-statistic)	0.074887			

**Source:** Gretl Output Compiled by Bagbe et al., 2022.

Table 4 showed the relationship between the Latent Independent variable PE and the dependent variable CT and the analysis of variance of the model revealed that their insignificant interaction effect of PE on CT [ $F = 1.5069$ ,  $P >.05$ ]. This indicates that PE contributed insignificantly (0.02%) to CT. In other words, PE characteristics are not important in the understanding of CT.



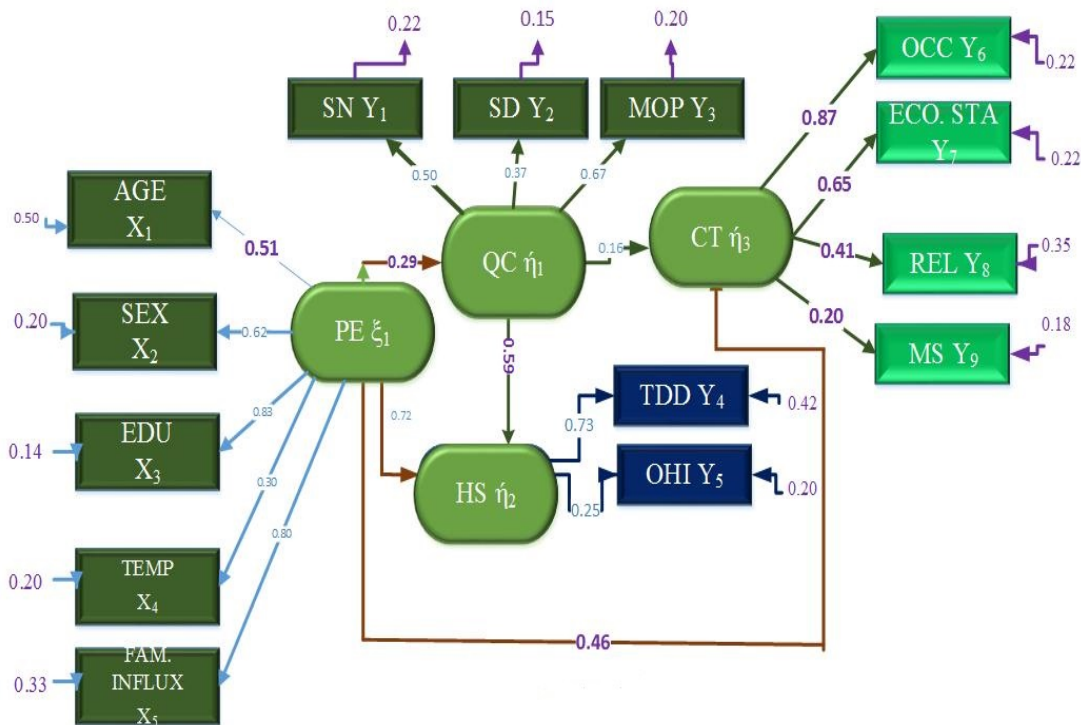
**Dependent Variable: CT**  
**Method: Least Squares**  
**Included observations: 250**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	29.45340	1.944204	15.14933	0.0000
PE	-0.008095	0.032136	-0.251907	0.8013
R-squared	0.000256	Mean dependent var		28.96800
Adjusted R-squared	-0.003775	S.D. dependent var		4.085307
S.E. of regression	4.093012	Akaike info. criterion		5.664407
Sum squared residual	4154.681	Schwarz criterion		5.692579
Log likelihood	-706.0509	Hannan-Quinn criterion.		5.675745
F-statistic	0.063457	Durbin-Watson stat		1.670198
Prob (F-statistic)	0.801321			

**Table 4.** Fitted Model of the Latent Independent Variable PE and Latent Dependent Variable CT.  
 (CT = 29.4534 - 0.0081PE)

Source: Gretl Output Compiled by Bagbe, 2021.

Table 4 showed the relationships between the latent independent variable PE and the latent dependent variables QC. The relationship between PE and QC revealed an insignificant influence of PE on QC [ $R^2=0.006$ ,  $F = 1.5069$ ,  $P > .05$ ]. This indicated that PE contributed significantly (50%) to QC. The AIC, BIC and the RV of the model also showed that PE had a great influence on QC.



**Figure 2:** Path Model of Patient Experience, Quality of care and Compliance to Treatment Source: LISREL Model Result by Bagbe, 2021.

Figure 2 showed the path model of the latent Exogenous construct PE and latent Endogenous QC, HS and CT. The path model revealed the evidence that satisfaction may be achieved when the levels of education of the patients were high and their temperament was low. Full explanation of Patient's condition, as well as the perceived merits of the treatment recommendations appear to be critical features especially regarding the more interpersonal construct of satisfaction with care. Results of the analyses examined the relationship between patient experience, quality of care and their compliance.

## 5. Conclusion

This study therefore concluded that compliance is an effective way of having a good health. To increase the probability of treatment success and satisfaction attention to the level of patient health status and factors associated with quality of care such as Satisfaction with Doctors and mode of payment. Medical non-compliance imposes as a considerable financial burden upon health care systems. Compliance to treatment is the key link between process and outcome in medical care. Lack of regard for levels of compliance may had a major impact on conclusion drawn from clinical research especially drug trials. Patients' health belief and patient perspective should be incorporated in the doctor-patient encounter. The hospital, as it is known today has undergone various changes throughout past centuries, it is imperative for a hospital environment where healing is their concern to have optimum level of comfort and care physically, socially and symbolically. Good hospital design may lead to success of great business outcome as patients are looking for quality of care with minimum cost for their safety and environment. In this study, other health issues, age, sex, temperament, education background, type of diseases diagnosed and satisfaction with doctor were the key factors that affects Patients' 'Satisfaction. It also confirms that older patients provide more favourable perceptions of care than younger patients. Similarly, it was that found young people had the lowest levels of satisfaction .and gender affected both expectations and experiences. The female patients had slightly higher satisfaction than male patients, suggesting that this difference may be due to different determinants of satisfaction. The patients' educational levels impacted on their experiences of patient centred care, though the impact was only small. Less educated patients regarded patient centred care as less important than educated patients. Less educated patients reported receiving 'too much', and more highly educated patients 'too little', in the domains of communication, information and shared decision making. This work has been focused on the effect of compliance on outcomes related to effectiveness of management of health problems. The exercise can be repeated after modification for dynamics of some other situations. This will be true, for example, with wisdom in conformance to codes, designs, regulations and policies in relation to successful withstanding of housing projects irrespective of trauma from earthquakes and other natural disasters. Also, only one exogenous latent construct Patient Experience (PE) was used, it is feasible to generalize in to more than one exogenous latent construct. one may in that instance consider Patient Experience (PE) and relative experience. This would be necessary since when one member of the family is sick; the whole family is invariably sick.

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