



Application of Structural Equation Model with a Mediation Variable on Service Quality and Customer Loyalty of Commercial Banks in Ghana.

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Abstract

In the competitive banking industry, Customer loyalty is very significant in the creation and maintenance of competitive advantage in the service industry. It depends on a myriad of factors and varies from person to person as well as product to product. This paper analysed the effect of service quality on customer loyalty with satisfaction as a mediation factor of commercial banks in Ghana. The results showed that loyalty influence to a great deal the trustworthiness and corporate image of commercial banks in Ghana. Also, service quality is a relevant contributing factor to empathy, reliability and assurance of commercial banks' services. Service quality has both direct and indirect effect on customer loyalty. However, satisfaction was deemed statistically insignificant in contributing to customer loyalty. The study suggests, among other things, that managers with commercial banks in Ghana should lay emphasis on service quality and conduct periodic surveys, as often as possible, to keep them informed on the aspects that required improvement.

Keywords: Satisfaction; Tangibility; Responsiveness; Assurance

1. Introduction

Customer loyalty is very significant in the creation and maintenance of competitive advantage in the service industry (Ndubisi, 2007). There are economic advantages associated with retaining loyal customers as opposed to recruiting new ones. This realization has made industry practitioners and academics pay increasing attention to customer loyalty studies (Ndubisi, 2007). In order to remain competitive, commercial banks need to build and enhance customer relationships that deliver value beyond that provided by the core product (Zineldin, 2006). Furthermore, the longer a loyal customer stays with a firm, the more profitable it is to that firm (Kim and Cha, 2002). Thus, keeping loyal customers represents a strategy for achieving distinct and sustainable competitive advantage (Roberts et al., 2003). Loyalty in service businesses refer to the customer's commitment to do business with a particular organization, purchasing their products repeatedly and recommending others to the organization's products. Little has been studied on the simultaneous effects of service quality, satisfaction and value on customer behavioural loyalty. The service sector has produced approximately two-thirds of worldwide GNP from twenty first century (Kara et al., 2005). Within the huge service sector, the banking sector is one of the most important entities; it has been growing relatively fast in the world. Quality in service can be determined by the extent to which customers' needs and expectations can be satisfied (Banerjee, 2012). Satisfaction is a crucial concern for both customers and organizations including banks. Satisfaction is a subjective concept and therefore difficult to determine, (European Institute of Public Administration, 2008). Titko and Lace (2010) accentuated that the competitive power and survival of a bank lies in the degree of its customer satisfaction. Banks therefore pay particular attention to customer satisfaction, (Kattack and Rehman 2010). Similarly, Abdullah and Rozario (2009) posit that the level of satisfaction may be influenced by various internal and external factors.

Kumar et al. (2009) stated that high quality of service will result in high customer satisfaction and increases customer loyalty. Saif (2009) found that customer satisfaction is the outcome of service



quality. Researchers argued that service quality has influence on customer satisfaction and generates customer loyalty (Chang *et al.*, 2009). Zeithaml *et al* (2008) developed a conceptual model that correlates Service Quality, Customer Satisfaction and Customer Loyalty in one frame. According to the model, service quality is the outcome of reliability, assurance, responsiveness, empathy and tangibles. Customer satisfaction is influenced by the quality of service & product and price as well as the situational and personal factors. The relationship between customer satisfaction and service quality is debatable. Most of the researchers found that service quality is the antecedent of customer satisfaction (Naeem and Saif 2009; Balaji, 2009; Bedi, 2010; Kassim and Abdullah, 2010; Kumar *et al.*, 2010). Yee *et al.* (2010) found that service quality has a positive influence on customer satisfaction. The state of customer loyalty with service quality, particularly using customer satisfaction as a mediation factor, is not clear as there is scanty documentation of the issue. There is widespread perception that Commercial Banks in Ghana does not provide its customers with good quality of service and as a result customer are not really loyal. A lot of factors that drive customer satisfaction, based on service quality and customer loyalty in particular, need to be examined in order to reliably measure it. Against this backdrop, this article seeks to analyse customer loyalty with service quality at commercial banks in Ghana by a Structural Equation Modelling (SEM) approach.

2. Materials and Method

2.1. Sampling Strategy and Sample Size

In selecting the sample of customers, stratified random sampling technique was employed. The study sample consisted of 1,050 customers, of twenty nine (29) commercial banks, drawn from across five cities of the various regions comprising southern Ghana. Subsequently, a simple random sampling technique was used to select customers as shown in Table 1 below.

2.2. Structure of Questionnaire and Data Management

The study employed self-administered questionnaires to collect data from the respondents. In all, the questionnaire had three main parts consisting of questions related to respondents' demographic data, questions related to overall customer satisfaction and questions related to quality of service. All questions, those on demographics, relating to service quality and customer satisfaction and loyalty were in five Likert-scale form and rated as: Strongly Disagree=1, Disagree=2, Not sure=3, Agree=4 and Strongly Agree=5.

2.4. Model Specification, Estimations and Tests

2.4.1. Latent Variable Model for Structural Equation

The four steps of SEM, specification, identification, estimation, and model evaluation, are examined. The latent variable model, which is also commonly referred to as the structural or causal model, is comprised of the system of equations that describes the relationships among latent variables. From the Fig. 1 below, considering the SEM framework, latent variables are considered to either be exogenous, such as ξ_1 , as their causes lie outside the model, or endogenous, like η_1 and η_2 , as their causes lie within the model. In Figure 1, it is hypothesized that ξ_1 is a cause of both η_1 and η_2 and that η_1 is a cause of η_2 . The latent variable model for the hypothetical model in Figure 1 can be written in equation form as:

$$\eta_1 = \gamma_{11}\xi_1 + \zeta_1 \quad (1)$$

$$\eta_2 = \beta_{21}\eta_1 + \gamma_{21}\xi_2 + \zeta_2 \quad (2)$$

The random errors ζ_1 and ζ_2 are assumed to have an expected value of zero and homoskedastic variances as well as be independent (they are not autocorrelated), and uncorrelated with ξ_1 .

Equation (1) and (2) can be rewritten in matrix notation as



$$\begin{bmatrix} \eta_1 \\ \eta_2 \end{bmatrix} = \begin{bmatrix} 0 & 0 \\ \beta_{21} & 0 \end{bmatrix} \begin{bmatrix} \eta_1 \\ \eta_2 \end{bmatrix} + \begin{bmatrix} \gamma_{11} \\ \gamma_{21} \end{bmatrix} \begin{bmatrix} \xi_1 \end{bmatrix} + \begin{bmatrix} \zeta_1 \\ \zeta_2 \end{bmatrix}$$

Which can be written more compactly as

$$\eta = B\eta + \Gamma\xi + \zeta \tag{3}$$

2.4.2. Measurement Model for Structural Equation

The measurement model links the latent variables with observed variables (the terms observed variables, indicators, measures, and manifest variables are used interchangeably). Figure 1 below posits that each latent variable has three indicators, each of which is associated with only one factor. The indicators for η_1 are y_1, y_2 and y_3 , the indicators for η_2 are y_4, y_5 and y_6 , and the indicators for ξ_1 are x_1, x_2, x_3, x_4 and x_5 .

The measurement model associated with Figure 1 is written as:

$$\begin{aligned} x_1 &= \lambda_1 \xi_1 + \delta_1 & y_1 &= \lambda_1 \eta_1 + \epsilon_1 & y_4 &= \lambda_4 \eta_4 + \epsilon_4 \\ x_2 &= \lambda_2 \xi_2 + \delta_2 & y_2 &= \lambda_2 \eta_2 + \epsilon_2 & y_5 &= \lambda_5 \eta_5 + \epsilon_5 \\ x_3 &= \lambda_3 \xi_3 + \delta_3 & y_3 &= \lambda_3 \eta_3 + \epsilon_3 & y_6 &= \lambda_6 \eta_6 + \epsilon_6 \\ x_4 &= \lambda_4 \xi_4 + \delta_4 \\ x_5 &= \lambda_5 \xi_5 + \delta_5 \end{aligned} \tag{4}$$

The Equations (4) can be written more compactly in matrix notation as:

$$x = \Lambda_x \xi + \delta \tag{5}$$

$$y = \Lambda_y \eta + \epsilon \tag{6}$$

3. Results

AMOS 22.0 was used as the analysis instrument and structural equation modelling (SEM) was employed in this study to test proposed model and hypotheses of the path coefficients. Asymptotically distribution free method was adopted for parameter estimation to justify data set used. Measurement model and structural model test were used to test fitness of the model. Figure 1 below depicts the empirical results of structural model by path analysis. The path coefficients of the latent constructs are visualized in Figure 1. The empirical results found significant positive relationship among service quality, customer satisfaction customer loyalty. It is notable that there is a direct effect of service quality on both customer satisfaction and loyalty. On the other hand, quality service has also significant direct but a statistically insignificant indirect effect on customer loyalty. The effect of Satisfaction of customers on Service charge is high for customers who strongly agree than their counterparts. Also, the effect of customer Loyalty on Corporate Image is about 86.7% smaller for customers who strongly agree as compared to their counterparts. Again, the effect of the bank’s service quality on Assurance is approximately 95% lower for those who strongly agree compared to their counterparts. However, there is a very weak negative relationship (-0.09) between the covaried error terms, 5 and 6, which is statistically significant at $p < 0.01$. It was noted the GFI = 0.963, NFI = 0.934, CFI = 0.941, and IFI = 0.941. All the incremental fit measures fulfilled the cut-off values (suggested values). Therefore, the model can be said to be a good fit model. However, the χ^2 statistic of 788.084 (df=39) is large.



Service quality aspect on assurance was not statistically significant in this study which is in contrast with Caruana et al. (2000) model. The study here asserted that satisfaction is strongly influenced by service quality dimension on responsiveness which contradicts a previous study Banergee (2012). There are overwhelming arguments that it is more expensive to win new customers than to keep existing ones (Hormozi and Giles, 2004). This is in line with this study as service quality influence's satisfaction and loyalty which therefore provides a means for the bank to retain its customers. This assertion was also confirmed by an earlier study Yeung et al., (2002). Customer loyalty, with satisfaction in mind, programmes should take into consideration that the provision of convenient, easy and fast banking services is closely associated with the customers' perceptions of how these bank services are delivered to them. These perceptual outcomes will, in turn, affect the level of bank customer loyalty ratings.

5. Conclusions

The study found that the results from the SEM showed that loyalty influence to a great deal the trustworthiness and corporate image of commercial banks in Ghana. Also, service quality is a relevant contributing factor to empathy, reliability and assurance of commercial banks' services. However, reliability and assurance, in terms of, service quality aspects are not really contributing significantly to customer satisfaction. Service quality have both direct and indirect effect on customer loyalty. However, satisfaction was deemed statistically insignificant in contributing to customer loyalty. The study suggest that, among other things, managers should operate commercial banks with emphasis on service quality.

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