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Service Quality and Customer Retention of Deposit Money Banks in North-Western Nigeria

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Article Information:
Received December 28, 2025
Revised April 14, 2026
Accepted April 20, 2026

Keywords:
Customer Retention; Reliability; Responsiveness; Service Quality; Trust Technology.

Abstract

Background: In a financial climate that is becoming more and more dynamic, a bank's ability to retain customers is crucial to its sustainability and competitiveness. In the banking industry, it is commonly acknowledged that client happiness and long-term loyalty are mostly determined by service quality.
Objectives: The goal of this study is to examine how several aspects of service quality such as empathy, dependability, responsiveness, technology, and trust affect retail banking customers' retention in commercial banks in Northwestern Nigeria.
Methods: This study used a cross-sectional survey design and a quantitative methodology. A five-point Likert scale served as the primary assessment tool in a structured questionnaire used for data collection. 499 retail banking clients at specific urban branches of seven major banks provided the data. The association between customer retention and service quality aspects was evaluated, and the relative strength of each predictor was ascertained, using SmartPLS and structural equation modeling (SEM).
Result: The study's conclusions show that client retention is strongly and favorably impacted by empathy, dependability, responsiveness, technology, and trust. Reliability and responsiveness were found to be the strongest predictors among these variables, indicating that accurate service delivery and timely replies are crucial for preserving customer loyalty.
Conclusion: This study emphasizes the necessity for banks to invest in safe, effective, and user-friendly digital technology while bolstering the provision of dependable and responsive services. These results provide bank managers with useful recommendations for improving service tactics that sustain long-term client retention and competitive advantage.

A. Introduction

Customer retention is now essential to an organization's success in the technologically advanced world of today. Customer mobility has grown due to digital transformation, highlighting the necessity for successful retention strategies based on customer happiness, trust, and the provision of distinctive value. Technological developments and changes in customer behavior have altered service expectations throughout Africa, especially in the financial sector where institutions are under more pressure to uphold client connections (Mittal et al., 2023). Nigerian banks need to put a loyalty-centered strategy first in light of the country's unstable economy and digital disruption. Strengthening client retention is essential to preserving

How to Cite : Abinabo, P., Shagari, J.N., Mashi, M.S., & Yahaya, A. (2026). Service Quality and Customer Retention of Deposit Money Banks in North-Western Nigeria. *Aktual: Jurnal Pengabdian Kepada Masyarakat,* 4(2), 59-75. https://doi.org/10.58723/aktual.v4i2.568
ISSN : 2987-6052
Published by : CV Media Inti Teknologi

competitiveness and guaranteeing operational resilience when traditional income streams diminish amid governmental adjustments (Ajouz et al., 2025).
The sustained profitability and long-term viability of an organization are considerably shaped by its capacity to retain existing customers over time. According to research, companies with client retention rates between 35% and 50% make more money than those with lower rates (Segerlind et al., 2026). According to the survey, successful customer relationship management techniques help US banks maintain client retention rates of about 75%. These high retention rates are linked to long-term banking relationships, where clients keep their accounts open for a long time, demonstrating a high level of service satisfaction and institutional loyalty.

But things are very different in underdeveloped nations like Nigeria. According to a study by (Kim et al., 2024), The inability of more than 72% of banking employees to maintain ongoing relationships with customers has been shown to contribute significantly to declining profitability at a number of large financial institutions. For example, the net income performance of a number of large banks declined noticeably. Access Bank's net income dropped from $389 million to $347 million, while Guaranty Trust Bank's fell from $425 million to $378 million. In a similar vein, Zenith Bank dropped from $594 million to $500 million. These declining patterns imply that keeping customers loyal and engaged has grown in importance for businesses in the service sector. Maintaining long-term income streams, enhancing operational performance, and promoting sustainable profitability all depend heavily on consistent client retention.

According to research by (Mugova et al., 2025; Zouari & Abdelhedi, 2021), The degree to which customers develop a sense of allegiance toward a financial institution is largely determined by the level of satisfaction they derive from their interactions, which in turn is intrinsically tied to the quality of service rendered. When the services offered not only fulfill but surpass the expectations and lived experiences of customers, the ensuing satisfaction organically transforms into enduring loyalty, ultimately cultivating a disposition toward advocacy on behalf of the institution. However, within the Nigerian banking landscape, this loyalty has experienced a significant decline, largely driven by rapid digital transformation and the growing presence of agile and innovative fintech companies, which continue to redefine customer expectations in unprecedented ways (Esiagu et al., 2026; Nwachukwu et al., 2025). Traditional financial institutions are under pressure to enhance service quality through technological innovation due to the introduction of creative, user-friendly, and accessible solutions by fintech companies (Salem & Shahimi, 2025; Sharma et al., 2024).

The traditional service quality model created by (Amiri et al., 2023; Kim et al., 2025), which consists of empathy, reliability, responsiveness, tangibility, and assurance, has consistently been used in many earlier studies, despite the expanding body of scholarly inquiry into service quality and customer retention, the contemporary digital banking environment presents, where customer contacts are increasingly taking place through technical platforms compared to in-person service encounters, a sustained dependence on the SERVQUAL model offers limits, despite the fact that it has yielded useful insights into service quality evaluation. The model's usefulness in situations where customer expectations are dominated by technological efficiency and digital convenience is limited by its emphasis on the tangibility and interpersonal dimensions.

A number of previous studies (Dunn, 2023; Pita et al., 2020) have employed relatively small sample sizes such as 39, 75, 81, 110, 174, 210, and 240 respondents often within constrained geographic scopes. Particularly when implemented in national or regional contexts, policies shaped by small-scale research may not sufficiently address the requirements of a larger population. There is a methodological gap that necessitates additional empirical research employing larger and more representative samples since the use of External validity is weakened by the small sample size, making it difficult to generalize the results.

Additionally, prior research (Al-kamal et al., 2025; Ayinaddis et al., 2023; Zouari & Abdelhedi, 2021) classic SERVQUAL paradigm, which emphasizes on the interpersonal and tangible aspects of service delivery. This model is less successful in portraying the realities of the contemporary digital banking environment because it places too little emphasis on the technological and trust factors. When working with financial institutions, modern consumers place a higher value on ease, trust, and technical efficiency. Notwithstanding this prevailing trend, a considerable conceptual gap persists within the existing literature, as only a limited number of studies have directly examined the relationship between technological service quality and trust dimensions in relation to customer retention outcomes.

In light of this, the SERVITECHT model an improved framework for service quality that includes Empathy, Reliability, Responsiveness, Technology, and Trust is proposed in this paper. In order to provide a more comprehensive and accurate knowledge of the factors influencing customer retention in today's banking business, this model combines more modern technology-based service features with classic aspects of service quality. While traditional factors like empathy, dependability, and responsiveness are still crucial when assessing service performance, the quick development of digital banking services has made technological prowess and customer trust equally crucial elements in determining customer loyalty and long-term bank relationships. The integration of technology and trust into the service quality framework, which has historically primarily concentrated on traditional service characteristics, is the study's uniqueness and scientific contribution. The study provides a more thorough understanding of how banking services may successfully retain clients in a highly competitive and technologically advanced environment by integrating these factors into a single analytical model. Furthermore, by concentrating on commercial banks in Nigeria's North-west, this study offers contextual insights into consumer behaviour and service standards in the local banking industry.

Furthermore, despite implementing advancements in information and communication technology and educating staff to enhance electronic banking systems, Nigerian banks still encounter ongoing difficulties in providing services (Kolawole et al., 2025). Unreliable internet connections, transaction delays, system malfunctions, and unfavorable customer service attitudes are typical service-related problems. These persistent issues damage the banks' brand and competitiveness, impair service dependability, and irritate clients (Akunwunmi & Ilesanmi, 2025). In the Nigerian banking industry, resolving these service delivery issues is essential to raising customer happiness, bolstering consumer confidence, and guaranteeing long-term client retention.

Therefore, the author has chosen the title "Service Quality and Customer Retention of Deposit Money Banks in North-western Nigeria" for this study based on the observed service challenges, the limitations of prior studies, the identified theoretical and methodological gaps, and the necessity of an integrated service quality framework that combines technological and trust dimensions in evaluating customer retention.

B. Methods

In order to generate results that are impartial, trustworthy, and able to be applied to larger contexts, this study uses a quantitative empirical methodology. The study attempts to produce precise and fact-based findings on the links between the variables under investigation by using statistical analysis and a structured research methodology. This involves the use of numerical data and comprehensive statistical analysis to systematically examine the proposed relationships. A cross-sectional descriptive survey approach could be used to simultaneously gather data from a representative sample. According to (Osman et al., 2024) guidelines, this approach effectively gathers customer opinions and experiences regarding customer retention and service excellence.

The population of interest for this study encompasses retail customers affiliated with 35 commercial banks operating within the Northwest geopolitical zone of Nigeria, a region that administratively consists of seven states: Kaduna, Katsina, Kano, Kebbi, Jigawa, Zamfara, and Sokoto. This demographic group was purposively selected based on the consideration that retail banking customers in the region represent a diverse and representative cross-section of society, whose banking experiences and perceptions of service quality are directly relevant to the key issues that form the focus of this study (Lawal et al., 2023). By choosing urban bank branches based on their economic significance and population density, this study focuses on four key states in Northwestern Nigeria: Kano, Kaduna, Katsina, and Sokoto. These cities were picked because they are important commercial and financial hubs with a high proportion of retail banking clients and active banking activity. The study is able to provide a more comprehensive picture of customer experiences and banking practices in the area by focusing on these strategically significant locations. Furthermore, this method improves the research's viability while enabling a more thorough and in-depth examination of the variables affecting client retention in the banking industry.

The top seven banks were selected based on their large retail customer base, strong assets, and stable financial condition. Guaranty Trust Bank, United Bank for Africa, Access Bank, Ecobank, Fidelity Bank, First Bank, and Zenith Bank are all acknowledged as major commercial banks with sizable clientele and substantial banking operations throughout Northwestern Nigeria (Halilu, 2024). Retail customers were

chosen as responders because they are in the best position to gauge how satisfied they are with banking services and products.

Sample Size Determination

However, due to privacy restrictions and worries over confidentiality, bank management declined to provide client data, making it impossible to ascertain the precise number of consumers. Because client numbers are not given at the branch level, attempts to acquire population estimates from annual reports and financial statements were fruitless. As a result, the researchers calculated the sample size for an unlimited population using the Krejcie and Morgan (1970) formula (Shuxuan & Jamaludin, 2025). In accordance with the suggestions of (Adam, 2020; Uakarn et al., 2021) this analysis assumes a population proportion (P) of 0.50 to indicate maximal variability, with a 95% confidence level (Z = 1.96).

384 responders is the computed minimum sample size. The sample size was increased by 200% to increase representativeness and decrease sampling bias, resulting in a total sample size of 768 people. The purpose of increasing the sample size is to enhance the statistical power of the study while significantly reducing the likelihood of a Type II error (Sadiq et al., 2025). Experts like Joseph F. Hair Jr., Barbara G. Tabachnick, and Linda S. Fidell have recommended that the sample size in quantitative research be increased by roughly 50% to 200%, depending on the level of statistical power needed and the complexity of the research model. This modification is crucial to guaranteeing more precise estimations, enhancing the analysis's dependability, and bolstering the validity and applicability of the study's conclusions (Columb & Atkinson, 2016).

This study successfully assessed 499 valid responses, despite the suggested sample size of 768. This figure guarantees sufficient representativeness and robustness of the study's conclusions because it surpasses the minimum threshold of 384 respondents.

Sampling Technique and Data Collection

To provide effective and focused data collection among retail bank clients, this study used convenience and purposive sampling approaches (Maharani et al., 2024). A systematic questionnaire with two primary components was used to collect data for this investigation. While the second segment included items meant to test the research components, the first section concentrated on gathering demographic data from respondents. Using a five-point Likert scale, which ranges from strongly disagree (1) to strongly agree (5), respondents were asked to express their opinions and degree of agreement with each item. The systematic measurement and more trustworthy quantitative analysis of the gathered data were made possible by the use of this scaling technique. The survey assessed customer retention alongside components of service excellence such as empathy, reliability, responsiveness, technology, and trust. To guarantee a high response rate and lower the possibility of erroneous answers, 700 questionnaires were sent to urban branches in four chosen states (Althinayyan & Alojail, 2024).

Instrument Validity and Reliability

Prior to the primary data analysis, extensive validity and reliability tests were performed to ensure the measurement instruments' accuracy, consistency, and suitability. These evaluations were necessary to guarantee that the questionnaire items could reliably and consistently measure the specified constructs. Additionally, the questionnaire was carefully created and modified using known measuring scales that had been used and verified in earlier scientific studies in order to increase the instrument's content validity. The research sought to improve the validity and dependability of the data gathered by using established tools from earlier investigations.

The validity of the research constructs was assessed in this study using Confirmatory Factor Analysis (CFA) within the Partial Least Squares Structural Equation Modelling (PLS-SEM) framework. The purpose of the analysis was to make sure that the measuring items appropriately reflected the underlying factors under investigation. By looking at factor loadings and the Average Variance Extracted (AVE) values for each construct, convergent validity was evaluated. According to well recognised statistical guidelines, each construct's AVE value had to be more than 0.50, which meant that the construct could account for more than half of the variance of its measurement indicators.

In order to verify that every concept in the research model was empirically unique and not unduly associated with other constructs, discriminant validity was further investigated using cross-loading analysis and the

Fornell-Larcker criterion. This process was crucial to ensuring that each variable in the model measured a distinct idea. Additionally, Cronbach's Alpha and Composite dependability (CR) coefficients were used to assess construct dependability. Values above the suggested threshold of 0.70 show that the measurement tool has strong reliability and can consistently measure the intended research constructs with a high degree of accuracy. Both indicators are widely acknowledged as trustworthy measures of internal consistency.

Data Analysis Method

Partial Least Squares Structural Equation Modelling (PLS-SEM) was the primary analytical technique used in the data analysis process, which was carried out using IBM SPSS Statistics and SmartPLS. The capacity of this method to concurrently investigate intricate interactions between latent constructs and their observable indicators inside a single statistical model led to its selection. Furthermore, PLS-SEM is seen to be very appropriate for exploratory and predictive research, especially when working with several variables and associated constructs. This allows for a more thorough and precise assessment of the suggested study framework. Moreover, PLS-SEM has demonstrated considerable suitability for predictive research models and complex multivariate structures encompassing multiple independent and dependent variables (Ciavolino et al., 2022).

The capacity of PLS-SEM to handle non-normal data distributions, support relatively large models, and produce reliable parameter estimates even with moderate sample sizes further supports its selection. This method works especially effectively for research that aims to forecast correlations between characteristics like customer retention and service quality measures.

The measurement model evaluation and the structural model assessment were the two primary phases of the data analysis process. The measurement model evaluation, which was the initial step, examined the validity and reliability of the research constructs in order to assess their suitability. Convergent validity, discriminant validity, and internal consistency reliability were all examined during this procedure to make sure the measurement indicators consistently and accurately reflected the desired constructs. The assessment of the structural model, which sought to examine and validate the proposed connections between the study's main variables empathy, dependability, responsiveness, technology, trust, and customer retention was the second step. During this phase, the study aimed to ascertain the importance, direction, and strength of the connections between these constructs within the suggested research framework.

Path coefficients, the coefficient of determination (R^2), effect size (f^2), and predictive validity (Q^2) were used to measure the magnitude and statistical significance of the relationships among variables. Hypothesis testing was conducted using the bootstrapping method with 5,000 bootstrap samples.

Model Specification (Revised & Corrected)

To examine the connection between customer retention and other aspects of service quality, a study model was created. The model was created to offer a methodical framework for examining how various aspects of service quality affect consumers' decisions to stick with banking services over time. Customer retention (CR) acted as the dependent variable in the study, while empathy (EMP), dependability (REL), responsiveness (RESP), technology (TECH), and trust (TRUST) represented the independent variable of service quality.

The expression for the functional connection is:
Customer Retention = F (Service quality) …….(3.8.1)

Where:
Service Quality = F (Empathy, Reliability, Responsiveness, Technology, Trust)
Therefore CR= (EMP, REL, RESP, TECH, TRUST) ……(3.8.2)

Where:
CR = Customer Retention
EMP= Empathy
REL = Reliability
RESP = Responsiveness
TECH = Technology
RUST = Trust

The aforementioned function merely asserts that empathy, dependability, responsiveness, technology, and trust all play a role in client retention. An econometric form of this function is created as:
$yi = \beta 0 + \beta 1x1 + \beta 2x2 + \beta 3x3 + \beta 4x4 + \beta 5x5 + u$……..(3.8.3)

Where:
yi = Customer Satisfaction
CR = Customer Retention
EMP = Empathy
REL = Reliability
RESP = Responsiveness
TECH = Technology
TRUST = Trust
CS = Customer Satisfaction
β_1--β_2 = Coefficient
β0 = Intercept
μt = Error of Term

Five explanatory variables are used in the study to examine client retention, and the error term (u) includes unobserved factors. The links between customer retention and service quality, namely the metrics β_1–β_2, are the main focus.

C. Results and Discussion

Descriptive analysis of respondent
As shown in Table 1, this section presents a comprehensive analysis of the respondents' demographic profiles; this analysis focuses on age, gender, length of service use, and educational level. Furthermore, a summary of descriptive statistics is provided to elucidate the distribution patterns across each of these demographic characteristics.

Table 1. Descriptive Results of Demographic Variables

Characteristics	**Frequency**	**Percentage**	**Valid Percentage**	**Cumulative Percentage**
Gender				
Male	329	65.9	65.9	65.9
Female	170	34.1	34.1	34.1
Total	**499**	**100.0**	**100.0**	**100.0**
Age	**Frequency**	**Percentage**	**Valid Percentage**	**Cumulative Percentage**
18-25	55	11.0	11.0	11.0
26-35	70	14.0	14.0	25.1
36-45	151	30.3	30.3	55.3
46-55	144	28.9	28.9	84.2
56 above	79	15.8	15.8	100.0
Total	**499**	**100.0**	**100.0**	
Qualification	**Frequency**	**Percentage**	**Valid Percentage**	**Cumulative Percentage**
PhD/DBA/Mphil	15	3.0	3.0	3.0
Msc/MBA	56	11.2	11.2	14.2
Bsc/HND	203	40.7	40.7	54.9
Diploma/NCE	184	36.9	36.9	91.8
SSCE	41	8.2	8.2	100.0
Total	**499**	**100.0**	**100.0**	
Years of Operation				
1-5	55	11.0	11.0	11.0
6-15	100	20.0	20.0	31.1
16-26	114	22.8	22.8	53.9
27-40	99	19.8	19.8	73.7

41above	131	26.3	26.3	**100.0**
Total	**499**	**100.0**	**100.0**	

Source: Author's Computation (2025) using SPSS version 27

The majority of respondents (69.9%) were men, a finding consistent with relevant social and cultural dynamics that tend to limit women in Northwest Nigeria's access to and participation in formal banking services. The largest category was made up of middle-aged groups (36–55 years old), which represented mature, financially engaged clients. Over 84% of respondents have post-secondary education, indicating high levels of education and reliable data. Strong customer loyalty was demonstrated by the fact that 69.4% of customers had been bank customers for more than 16 years and 26.8% for more than 41 years, indicating long-standing connections with their banks.

Internal Consistency Reliability

The primary metrics used to evaluate the measuring model's dependability were Cronbach's Alpha and Composite Reliability. In order to make sure that the indicators could reliably and accurately represent the underlying constructs they were designed to measure, these reliability measures were used to assess the degree of internal consistency among the assessment items. While composite reliability accounts for variations in indicator strength, Cronbach's alpha assumes equal outer loadings (Fauzi, 2022). Using both Cronbach's Alpha and Composite dependability at the same time allowed for a comprehensive assessment of construct dependability. When these two indications were used together, the measurement model's internal consistency and stability were evaluated more thoroughly. With Cronbach's Alpha values ranging from 0.959 to 0.965 and Composite Reliability values all over the acceptable threshold of 0.708, all constructions met the suggested reliability standards, as shown in Table 2. These findings show that the assessment tools showed a high degree of dependability and were appropriate for additional examination (Aghimien et al., 2025). The assessment items within each construct exhibit a high degree of internal consistency, as seen by the Cronbach's Alpha scores, which varied from 0.959 to 0.965. Furthermore, all constructions successfully met the suggested reliability standards, as confirmed by the rho_A and rho_C coefficients, which have values between 0.960 and 0.965. These results show that the measurement model has a high level of consistency and reliability, indicating that the study's indicators were suitable for precisely assessing the desired research constructs (Li & Li, 2025).

Table 2. Individual Item Reliability, Internal Consistency Reliability, Convergent Validity and Discriminant Validity

Constructs	Outer loadings	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
CR		0.965	0.965	0.970	0.781
CR1	0.866				
CR2	0.871				
CR3	0.880				
CR4	0.885				
CR5	0.886				
CR6	0.899				
CR7	0.892				
CR8	0.886				
CR9	0.890				
Empathy		0.961	0.961	0.966	0.761
Empathy1	0.858				
Empathy2	0.880				
Empathy3	0.873				
Empathy4	0.867				
Empathy5	0.873				
Empathy6	0.870				

Empathy7	0.881				
Empathy8	0.869				
Empathy9	0.878				
Reliability		0.963	0.963	0.968	0.770
Reliability1	0.873				
Reliability2	0.857				
Reliability3	0.887				
Reliability4	0.882				
Reliability5	0.870				
Reliability6	0.873				
Reliability7	0.874				
Reliability8	0.884				
Reliability9	0.897				
Responsiveness		0.964	0.964	0.969	0.776
Responsiveness1	0.884				
Responsiveness2	0.871				
Responsiveness3	0.880				
Responsiveness4	0.882				
Responsiveness5	0.888				
Responsiveness6	0.885				
Responsiveness7	0.880				
Responsiveness8	0.883				
Responsiveness9	0.878				
Technology		0.959	0.960	0.965	0.755
Technology1	0.870				
Technology2	0.845				
Technology3	0.870				
Technology4	0.884				
Technology5	0.890				
Technology6	0.876				
Technology7	0.865				
Technology8	0.855				
Technology9	0.867				
Trust		0.961	0.961	0.967	0.763
Trust1	0.881				
Trust2	0.880				
Trust3	0.876				
Trust4	0.852				
Trust5	0.872				
Trust6	0.874				
Trust7	0.872				
Trust8	0.883				
Trust9	0.873				

Source: Author's Computation (2025) using Smart PLS 4.0.9.9 released 2023

Figures 1 and 2 below show the PLS-SEM estimates obtained from the model specified in Equation 1; all estimates were calculated using the SmartPLS statistical software.

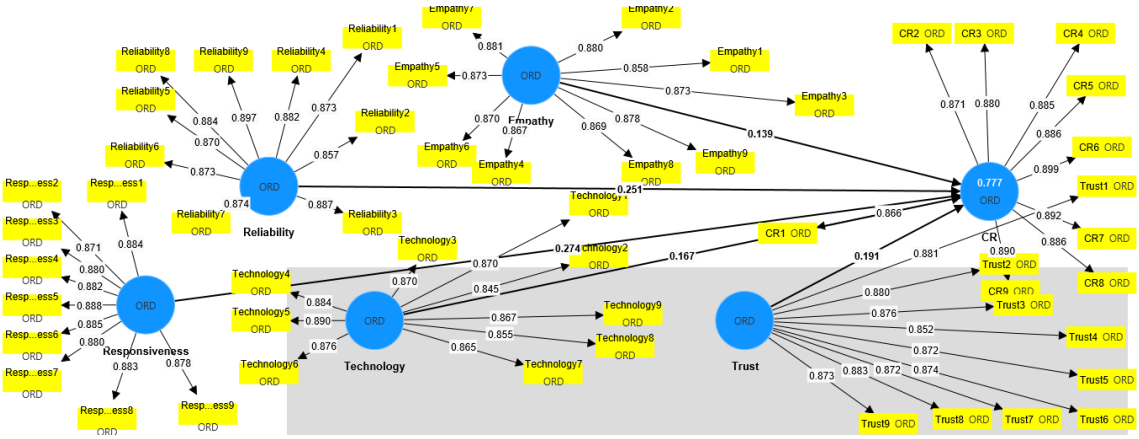

Figure 1. Model Measurement Path Diagram (External)

Convergent Validity

The degree to which several indicators linked to a certain construct consistently measure and represent the same underlying theoretical concept is known as convergent validity. To put it another way, it shows if the indicators within a construct are highly linked with each other and accurately reflect the intended variable as a whole. A high degree of convergent validity means that the measurement items are appropriate for capturing the construct in the research model and share a significant amount of shared variation (Cheung et al., 2024). One of the main metrics used to assess convergent validity is the Average Variance Extracted (AVE), which is computed from the squared values of factor loadings. AVE quantifies how well the observable variables reflect the underlying latent concept by measuring how well a construct can explain the variance of its indicators. A higher AVE score indicates that the indicators have a significant amount of common variation and that the construct has a high degree of convergent validity (Farshad & Niknami, 2024). Convergent validity is often deemed sufficient if each construct's AVE value hits or above the 0.50 level. According to Table 2's results, these structures produce AVE values between 0.755 and 0.776, meaning that they explain roughly 76.6% of the variance in each indicator.

Discriminant Validity

To ensure that each construct in the research model represents a distinct facet of the phenomenon under study and does not unduly overlap conceptually or statistically with other constructs, discriminant validity is employed. To put it another way, it guarantees that each variable in the model measures a unique notion and can be easily distinguished from the others. The Fornell-Larcker criterion and the Heterotrait-Monotrait Ratio (HTMT) were two complimentary techniques used in this study to evaluate discriminant validity. A more thorough assessment of the uniqueness and independence of the constructs contained in the study framework was made possible by the use of these techniques (Mukhtar et al., 2022). According to (Akhter et al., 2024), when an indicator shows a much greater connection with its related concept than with any other construct in the model, discriminant validity is deemed adequate. This suggests that the indicator does not significantly overlap with other constructions and is more successful in measuring the desired construct. The Fornell-Larcker criterion, which is based on this idea, stipulates that each construct's square root of the Average Variance Extracted (AVE) should be higher than the correlations between that construct and every other construct in the model. Fulfilling this condition demonstrates that there is little conceptual overlap between the constructs under investigation and offers empirical evidence that each construct reflects a unique feature of the study framework.

Table 3. Describing the Validity of the Fornell-Lacker Criteria for Discriminant Analysis

	CR	Empathy	Reliability	Responsiveness	Technology	Trust
CR	0.884					
Empathy	0.733	0.872				
Reliability	0.757	0.640	0.877			
Responsiveness	0.792	0.723	0.659	0.881		
Technology	0.740	0.645	0.663	0.690	0.869	
Trust	0.758	0.669	0.663	0.717	0.669	0.874

Source: Author's Computation (2025) using Smart PLS 4.0.9.9 released 2023

The measurement model's discriminant validity is amply demonstrated by Table 3. The correlations between constructs displayed in the relevant rows and columns are consistently lower than the AVE square root values, which range from 0.869 to 0.884 along the diagonal of the matrix. This result shows that every construct can explain a larger percentage of the variance in its own indicators than the variance it shares with other constructs in the model, indicating that each construct fits the conditions of the Fornell-Larcker criterion. As a result, the findings validate that the constructs have discrete dimensions within the research framework and are empirically distinct (Harsanto et al., 2024).

Discriminant Validity: Heterotrait-Monotrait Ratio (HTMT)

A more modern and reliable technique for evaluating discriminant validity in the PLS-SEM framework is the Heterotrait-Monotrait Ratio (HTMT). It serves to guarantee that every construct in the model is different from the others both theoretically and factually. To indicate sufficient discriminant validity, HTMT scores should typically stay below 0.85, or below 0.90 under less stringent conditions. This indicates adequate discriminant validity. In addition, the number 1 should not be included in the HTMT confidence interval obtained through the bootstrapping procedure, as an additional condition that reinforces the fulfillment of discriminant validity.

Table 4. Discriminant Validity: Heterotrait-Monotrait Ratio (HTMT)

	CR	Empathy	Reliability	Responsiveness	Technology	Trust
CR						
Empathy	0.761					
Reliability	0.786	0.665				
Responsiveness	0.820	0.751	0.683			
Technology	0.768	0.671	0.690	0.717		
Trust	0.787	0.696	0.689	0.744	0.696	

Source: Author's Computation (2025) using Smart PLS 4.0.9.9 released 2023

Table 4 shows that adequate discriminant validity was achieved with an HTMT value of 0.85 for the strict model and 0.90 for the more lenient model; these values remain well below the accepted threshold. Overall, these findings indicate that the constructs can be empirically distinguished from one another, suggesting that the measurement model has met all requirements for discriminant validity.

Structural (or Inner) Model

The validated and trustworthy measuring tools developed in the preceding phases of the project were then used to analyse the structural model. The purpose of this investigation was to determine the degree and importance of the connections between the aspects of service quality such as empathy, dependability, responsiveness, technology, and trust and their impact on customer retention. The purpose of this assessment was to ascertain how these elements support sustained client loyalty in the banking industry. Following the guidelines suggested by (Lamberti & La, 2025), data from 499 respondents was put through a bootstrapping process utilizing 5,000 resamples. Hypothesis testing and model evaluation relied on β coefficients, t-values, p-values, R^2, Q^2, and f^2 to gauge the model's explanatory capability and predictive relevance.

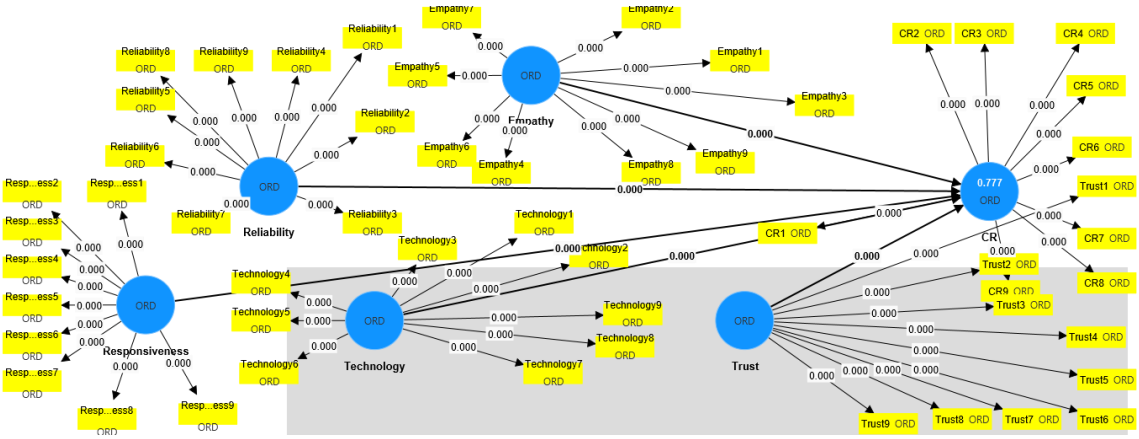

Figure 2. Path Diagram of Structural (Inner) Model

Hypothesis Testing

This section looks at the direct connection between the external aspects of service quality and customer retention as an internal construct. By displaying the path coefficients, t-values, and p-values in accordance with accepted research standards, Table 5 demonstrates the size and statistical importance of these associations. According to the analysis, the route coefficients that showed how empathy, dependability, responsiveness, technology, and trust affected customer retention failed to reach the necessary level of statistical significance under the null hypothesis. These results imply that the suggested direct links in the model were not supported by the impact of these service quality aspects on customer retention.

Table 5. Path Coefficients for Direct Effects in the Inner Model

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Remarks
Empathy -> CR	0.139	0.139	0.034	4.053	0.000	Accepted
Reliability -> CR	0.251	0.251	0.032	7.945	0.000	Accepted
Responsiveness -> CR	0.274	0.273	0.037	7.409	0.000	Accepted
Technology -> CR	0.167	0.168	0.033	5.127	0.000	Accepted
Trust -> CR	0.191	0.191	0.032	6.031	0.000	Accepted

Source: Author's Computation (2025) using Smart PLS 4.0.9.9 released 2023

In contrast to the null hypothesis (H0), the study postulated (H1) that service quality, proxy empathy, dependability, and technology trust would significantly and favorably impact customer retention. Nonetheless, Table 5's empirical findings show that **H_{01}**: Empathy significantly and favorably affects customer retention among Deposit Money Bank clients with ($\beta = 0.139$, $t = 4.053$, $p < .001$). As a result, the null hypothesis was disproved, suggesting that among deposit money bank clients in northwest Nigeria, there is a statistically significant correlation between empathy and customer retention. A rise in empathy is linked to a 0.139 increase in customer retention, according to the positive beta coefficient.

H_{O2}: Customers of commercial banks were found to be positively and statistically significantly impacted by reliability ($\beta = 0.251$, $t = 7.945$, $p = 0.001$). The null hypothesis is rejected in light of these findings, suggesting that reliability is crucial for improving customer retention. The results also support the notion that consumers' willingness to stick with a bank is positively correlated with reliability. Furthermore, the positive t-value indicates a 0.251 increase in customer retention for every one-unit increase in reliability. This suggests that customers who view their banks as dependable, precise, and consistent in fulfilling service promises are more inclined to stay loyal and maintain their banking relationship.

H_{O3}: Responsiveness negatively affects customer retention at Deposit Money Banks in a significant way ($\beta = 0.274$, $t = 7.409$, $p < .001$). As a result, the null hypothesis was rejected, providing empirical evidence of a statistically significant and positive relationship between responsiveness and customer retention. According to the positive t-statistic, client retention falls by 0.274 as reliability rises. This implies that while responsiveness significantly influences customer retention, the direction of the relationship is negative; this suggests that as perceived responsiveness increases, customer retention tends to decrease. **H_{O4}:** Technology

was found to exert a positive and considerable influence on customer retention within Deposit Money Banks ($\beta = 0.167$, $t = 5.127$, $p < .001$). Consequently, the null hypothesis was rejected, establishing the presence of a positive and statistically significant association between technology and customer retention. According to the positive t-statistic, client retention rises by 0.167 as technology advances. The results showed that customer satisfaction and loyalty levels rise as banks adopt and successfully use technology to enhance service delivery. **H_{O5}:** Customer retention in Deposit Money Banks was found to be positively and significantly impacted by trust ($\beta = 0.191$, $t = 6.031$, $p < 0.001$). As a result, the null hypothesis is disproved, suggesting that trust is crucial for improving customer retention. These results offer factual proof that customers are more likely to sustain long-term relationships with their banks when there is a higher degree of customer trust. According to the positive t-statistic, client retention rises by 0.191 as trust does. This implies that clients are more inclined to stick with banks as their confidence in them increases. Long-term partnerships are fostered by trust in integrity, dependability, and financial stability.

Collinearity Assessment-Variance Inflation Factor (VIF)

The Variance Inflation Factor (VIF) in structural equation modeling (PLS-SEM) evaluates whether predictor constructs are multicollinear. It measures the degree to which a predictor's linear relationship with other predictors inflates its variance. According to (Salmer´on-G´omez et al., 2020) VIF values falling below the threshold of 3.3 are indicative of the absence of common method bias and suggest an acceptable level of collinearity among the constructs. Similarly, Kock (2015) suggests that VIF values below 5.0 are considered acceptable and do not pose significant multicollinearity concerns.

Table 6. Collinearity statistics VIF

	VIF
Empathy -> CR	2.507
Reliability -> CR	2.302
Responsiveness -> CR	2.945
Technology -> CR	2.429
Trust -> CR	2.605

Source: Author's Computation (2025) using Smart PLS 4.0.9.9 released 2023

Table 6 shows that multicollinearity is not an issue for this model; the VIF values for the variables technology, trust, empathy, reliability, and responsiveness range from 2.302 to 2.945, all of which are below the recommended threshold of 3.3.

Coefficient of Determination: R-Squared

The coefficient of determination, typically denoted as R^2, indicates the proportion of variance in the dependent variable explained by the independent variables included in the model. Hair et al. (2017) emphasize that R^2 is crucial for determining how well a model fits the observed data. R^2 values of 0.75, 0.50, and 0.25 are categorized as strong, moderate, and weak, respectively, according to the classification framework proposed by Hair et al. (2021). Conversely, Cohen (1988) shows that R^2 values of approximately 0.26, 0.13, and 0.02 correspond to large, moderate, and small effects, respectively.

Table 7. Coefficient of Determination: R-Squared

	R-square	R-square adjusted
CR	0.777	0.775

Source: Author's Computation (2025) using Smart PLS 4.0.9.9 released 2023

As shown in Table 7, an R^2 value of 0.777 and an adjusted R^2 value of 0.775 indicate that the model is 77.7% of the variance in customer retention could be explained by the model, demonstrating the good explanatory power of the suggested framework. This result implies that the predictor variables empathy, dependability, responsiveness, technology, and trust collectively play a major role in explaining and forecasting client retention. Additionally, these findings align with (Wei et al., 2025) threshold criterion for adequate predictive performance in structural equation modelling.

F-square effect size

Each exogenous construct's unique contribution to the variance explained in customer retention was assessed using the f-square (f^2) statistic. It shows the gradual shift in the explained variance brought about by adding a predictor to the model.

Table 8. Depicting the Effect size- f-square

Relationship	f-square	Size
Empathy -> CR	0.035	Small
Reliability -> CR	0.122	Small moderate
Responsiveness -> CR	0.114	Small moderate
Technology -> CR	0.052	Small
Trust -> CR	0.063	Small

Source: Author's Computation (2025) using Smart PLS 4.0.9.9 released 2023

While all five service quality attributes, as shown in Table 8 above, among the predictor variables contributing to the explanation of customer retention, reliability (0.122) and responsiveness (0.114) emerged as the most substantial individual contributors to the overall explanatory power of the model. Their individual impacts, however, are usually mild to moderate. The model's R2, however, shows that the combined contribution of these predictors is noteworthy.

Discussion of the Findings

This study examines how customer retention and service quality relate to savings banks in Northwestern Nigeria. In order to ascertain their impact on customer retention, the study carefully looks at five key aspects of service quality: empathy, dependability, responsiveness, technology, and trust. The SERVQUAL model, which was created by (Yesmin et al., 2023) as a framework for assessing customer perceptions and service performance in the banking industry, serves as the main foundation for these dimensions. The purpose of this study is to determine the extent to which banking practices help retain customers. This study also examines the strength of this relationship within the overall model, as well as which elements of service quality have the greatest impact on customer loyalty.

Empathy improves customer retention. Therefore, banks that are more attuned to customer needs such as by understanding and addressing those needs and providing services tailored to them tend to retain loyal customers who continue to use their services. Previous research on the relationship between emotional intelligence and service quality aligns with these findings: data from the banking sector (Meenaprabha et al., 2025), who found that empathy helps improve customer retention in the Telkom industry in Indonesia.

The positive association between customer retention and reliability aligns with the findings of prior scholarly investigations, which consistently demonstrate that reliability constitutes a significant determinant of customer loyalty within the banking industry. The result also supported by the SERVQUAL model (Yesmin et al., 2023) where the capacity to deliver promised services consistently and precisely is defined as reliability. Thus, in the banking, reliable service includes timely processing of transactions, accurate account management, and fulfilling customer commitments. When banks consistently meet these expectations, customers perceive lower risk and higher trust, which encourages loyalty and repeated patronage.

This result also aligns with the principles of the Service Quality (SERVQUAL) framework (Kim et al., 2024) which emphasizes reliability as a critical dimension of service quality. According to SERVQUAL, Empathy is a measure of how much a service provider gives each client personalized attention and understanding, which promotes client pleasure and loyalty.

The findings of this study revealed that responsiveness exerts a positive and statistically significant influence on customer retention among clients of Deposit Money Banks. From the perspective of Relationship Marketing Theory (Zhengmeng et al., 2024), responsiveness strengthens relational bonds

between banks and their customers. Timely and effective service delivery fosters both emotional and psychological engagement among customers, thereby strengthening their commitment to the institution and diminishing the propensity to switch to competing service providers. These findings are in consonance with the conclusions drawn by previous scholarly studies (Nguyen et al., 2024), but it aligns with (Suriansha et al., 2024), which similarly established that responsiveness exerts a significant and meaningful effect on customer retention.

This study establishes that technology plays a significant and constructive role in the retention of deposit money bank customers. Customers are consequently more predisposed to maintain their banking relationships with institutions that offer efficient, secure, and user-friendly technological solutions, including automated teller machines, internet banking platforms, and mobile banking applications. This finding is in accordance with the work of (Iqbal et al., 2021), who showed how implementing cutting-edge technologies may increase customer loyalty in the banking industry by enhancing service accessibility, convenience, and operational effectiveness. This result is also in line with (Rababa et al., 2025) discussion of the Technology Acceptance Model, which states that consumers are more likely to accept and stick with financial services when they believe the technology is practical and simple to use, which says that people's belief in how useful and easy a technology is affects their satisfaction and how they act.

Customer retention at Deposit Money Banks is positively and dramatically impacted by trust. The results support the Social Exchange Theory (Ricadonna et al., 2021), It clarifies that relationships endure when both parties see justice and mutual gain, while the current study is consistent with the finding of (Hidayat & Idrus, 2023) who claimed that trust is one of the key elements affecting customers' choice to remain loyal to their banks.

D. Conclusion

According to this study, among commercial banks in Northwest Nigeria, responsiveness has a negative but substantial relationship with client retention, whereas empathy, dependability, technology, and trust have a positive and significant impact. According to these results, clients are more inclined to stick with banks that continuously offer dependable services, implement dependable technology, and uphold trustworthy connections. client expectations regarding prompt service delivery may not always be successfully realized, as seen by the negative correlation between responsiveness and client retention. Collectively, these findings underscore the critical importance of enhancing key dimensions of service quality as a means of sustaining enduring customer relationships within the banking industry.

Based on these results, commercial banks need to improve the compassionate service they provide while incorporating dependable, technologically advanced solutions that boost productivity and customer happiness. Through prompt transaction processing, precise service delivery, and open communication methods that foster client loyalty and trust, banks must also consistently meet their service obligations. To increase service convenience and dependability, management must also make investments in cutting-edge, safe, and user-friendly digital banking platforms. In order for service delivery to meet customer expectations, responsive tactics must also be improved to guarantee that client requests and complaints are handled promptly and efficiently.

E. Acknowledgment

The authors would like to sincerely thank everyone who helped make this research a success. We would also want to thank all of the respondents who willingly took part in the survey and contributed important information that made the research process much easier.

F. Author Contribution Statement

PA was in charge of the study's conception, design, and oversight. JNS carried out data collection and helped organize and prepare the data. Formal data analysis was carried out by MSM, who also helped establish the technique and interpret the findings. AY was in charge of the language editing, manuscript drafting, and literature review. The text was reviewed and revised by all authors, who also gave their approval for publishing.

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