ONLINE CUSTOMER EXPERIENCE AND CUSTOMER LOYALTY OF UNDERGRADUATE USERS OF BANK APPS IN BAYELSA

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Abstract
This study investigates the relationship between online customer experience and customer loyalty among undergraduates who are users of bank apps in Bayelsa State, Nigeria. Anchored in Information Systems (IS) continuance theory, the study conceptualizes OCX as a multidimensional construct comprising functional experience, information experience, and aesthetic experience. A correlational, cross-sectional survey design was adopted, and data were collected from undergraduate students of a public university in Bayelsa State using an online questionnaire. From a sample of 377 respondents, 239 valid responses were analyzed using exploratory factor analysis, reliability testing, and correlation analysis. Exploratory factor analysis revealed a three-factor structure of online customer experience, differing from the initially hypothesized dimensions. Correlation analysis results indicate that functional experience, information experience, and aesthetic experience all have significant relationships with customer loyalty. Among these, information experience was found to have the strongest relationship with customer loyalty. The findings highlight the importance of app usability, quality and reliability of information, and interface aesthetics in fostering both attitudinal and behavioral loyalty.
Keywords: Online customer experience, Customer loyalty, Mobile banking

Introduction

The need for clients to physically visit brick-and-mortar service facilities has been decreased in the last 30 years due to the widespread use of various technologies by banks to assist with service delivery. The rise in smartphone use has made possible new forms of banking technology such as mobile app banking, mobile-enabled internet banking, and automated teller machines (ATMs) (Ncube and Kabanda, 2022). According to Guidom and Saadi (2023), a mobile application, sometimes known as a "app," is a collection of programmed instructions that a mobile device may employ to address an issue. A software application that may be installed on a tablet or smartphone to provide knowledge on many topics (Ngelambong *et al*., 2024). Customers'

interactions with various businesses, including banks, are being transformed by the widespread use of mobile apps (Flacandji & Vlad, 2022). The sales channel, the delivery channel, and the service channel are the three components that make up any company's distribution and marketing channel (Kotler and Keller, 2012). A new sales channel the internet and related technologies like apps have opened up a world of possibilities for businesses and their clients. Beyond that, however, these technologies have evolved into true channels for delivery and service, meaning they facilitate the provision of both primary and supplementary services to consumers (Urdea & Constantin, 2021).

For many businesses, especially those providing services, like banks, mobile applications have become an essential sales and service distribution platform. These applications have grown in importance as a way for users to get information and make minor and major transactions without physically visiting a bank. Various financial activities, such as money transfers, bill payments, data and airtime subscriptions, and more, may now be conducted using mobile applications, which have essentially become virtual banking halls. Over three million transactions totaling more than 149 trillion naira were carried out using mobile banking applications between January and June of 2024, according to the Central Bank of Nigeria (CBN). This shows that these systems are becoming more important in Nigerians' daily lives.

Achieving and sustaining a competitive edge and expanding market share in the fiercely competitive financial business requires a focus on client loyalty (Phan *et al*., 2023). The importance of this cannot be overstated, as competition in the financial sector has expanded beyond traditional rivalries between banks to include fintech companies such as Opay, Moniepoint, Kuda, etc. As a result, commercial banks are constantly seeking new customer retention strategies to prevent a decline in revenue. However, with the rise of mobile banking and the decline in foot traffic to traditional banking halls, customer experience has emerged as a critical factor in determining whether or not clients will continue to use a certain financial institution.

The literature identifies customer experience with a firm's goods as a crucial factor in determining customer loyalty. There is mounting evidence that customers' positive experiences with online systems, such as companies' websites or mobile channels, are associated with higher levels of platform loyalty and repeat business (Molinillo *et al*., 2020; Molinillo *et al*., 2022, among others). Despite the proliferation of research on the topic of the online shopping experience, two

factors have emerged as clear standouts. Despite the proliferation of mobile applications, there seems to be an overemphasis on research into the user experience of company websites. The second issue is that research on consumer behavior in relation to online merchants continues to dominate the field, perhaps at the expense of other industries that may provide useful insights. There needs to be an evaluation of the app user experience and how it affects customer loyalty to these institutions since, as said before, the number and value of financial transactions done online via applications are on the rise.

For these reasons, the purpose of this research is to determine whether or not consumers' satisfaction with mobile banking applications influences their loyalty to certain financial institutions within Bayelsa State. Bayelsa State was selected as the study area due to two reasons. First, it is characterized by riverine geography and limited physical banking infrastructure which necessitates increasing reliance on non-traditional banking channels like digital banking platforms. Second, it addresses a gap in literature that has largely overlooked less urbanized regions in Nigeria.

Literature Review

Theoretical Framework

Building on Oliver's (1980) expectation-confirmation theory (ECT), Bhattacherjee (2001) first developed the information system (IS) continuance theory to explain why people keep using a certain information system. Two factors predict continuation intention: perceived usefulness (the belief that the information system is effective in carrying out its intended tasks) and satisfaction with use (the individual's confirmation that the system met prior expectations). The subjective character of expectations is argued by Mendez-Aparicio *et al*. (2020) who state that expectations serve as the basis for evaluating experiences.

Expanding on the original model's emphasis on variables after consumption, Bhattacherjee and Premkumar (2004) expanded it to include aspects before usage as well. The authors aimed to clarify that an individual's continuation intention is impacted by the confirmation or disconfirmation of pre-usage assumptions, such as perceived utility and simplicity of use, after using the system. In their 2011 expansion of the theory, Venkatesh *et al*. included three belief constructs: effort expectancy, facilitating conditions and social influence; and trust, which is a contextual factor. Since people are understandably apprehensive about security while using online

systems due to the frequency of fraud and the fact that users must communicate personal and sensitive information that is readily exploitable, Venkatesh *et al*. (2011) contend that trust is a crucial contextual component. According to their reasoning, people need to have faith in a system before they use it, and that faith becomes stronger the more they use it, which in turn influences how often they use it.

Customers are more likely to stick with a bank's app and use it often if their expectations are satisfied, but they may abandon it altogether if they aren't. According to Bhattacherjee and Premkumar (2004) and Mendez-Aparicio *et al*. (2022), customers' views and attitudes about a bank's app are shaped by their experiences, which alter over time.

Online Customer Experience (OCX)

A foundational text in the online customer experience literature is Schmitt's (1999) work on experiential marketing, which stresses the importance of both logical product and service assessments and the experiential value consumers get from their encounters with brands. There are five aspects to an experience, according to Schmitt, and they are sense, feel, think, act, and connect. These aspects clarify how customers build social identities via their encounters with businesses, as well as how they receive inputs, form emotional connections, engage intellectually, and behave behaviorally.

The term "online customer experience" (OCX) refers to the subjective reactions of consumers to their encounters with digital services and e-commerce platforms. According to Rose *et al*. (2012), this includes how people feel about the interfaces' aesthetics, how secure they feel, how easy it is to navigate, and the information they find. According to Meyer and Schwager (2007) and Stefanoglu *et al*. (2025), customers' subjective and internal reactions to any kind of contact with a business and its digital offerings constitute customer experience. Consumer experience is crucial to gaining an edge in e-commerce industries since it has a substantial impact on consumer happiness, trust, and loyalty in digital settings (Lemon & Verhoef, 2016).

Various researchers' perspectives and adaptations of earlier studies have led to various operationalizations of the online customer experience construct in the literature. Consider the four-factor operationalization by Urdea and Constantin (2021): informativeness, entertainment, social presence, and sensory experience. Website usability, economic value, personalization, security, customer services, customer awareness, and post-purchase experience were the aspects used to

operationalize the construct in the research by Aurelia and Kusumawati (2024). The research by Zhu and Hou (2021) on the subject of user experience with government service mobile apps revealed three dimensions: visceral, behavioral, and emotional. The four dimensions of online consumer experience—cognitive, emotional, sensory, and relational—were defined by Molinillo *et al*. (2022).

Nevertheless, there are two main reasons why the operationalization proposed by Huang and Zhu (2024) would be used in this investigation. First, app experience is not being measured by many operationalizations, but rather by website experience. Secondly, while most of these operationalizations have been applied to e-retailing studies, we find that Huang and Zhu's (2024) work is better suited to a study of mobile app banking. Their dimensions—functional experience, information content experience, aesthetic experience, service experience, technical performance experience, information security experience, service experience, and marketing strategy—focus more on the issues related to financial services transactions than any of the other previously identified perspectives in the literature. Focusing on only four aspects—functionality, information security, information substance, and aesthetics—this research will draw its conclusions. Below, we'll take a closer look at their measurements.

Functional Experience

When people talk about their "functional experience" with an online service, they're referring to the practical parts of using that service, such as how well it helps them get things done. "Perceived ease of use" and "perceived usefulness" are the two aspects that Davis (1989) outlined as being crucial to the acceptance and maintenance of technology. The effectiveness, simplicity, and dependability of online platforms that impact cognitive assessments of the purchasing process are described by Rose *et al*. (2012) as functional experience in e-retailing. "The ability to easily navigate through an app and finish intended tasks in a hassle-free fashion" is how ease of use is defined by Ncube and Kabanda (2022, p.4). As According to Huang and Zhu (2024), functional experience may be measured by factors such as the function's utility, operational ease, and ease of learning. According to research by Cyr *et al*. (2006), the ease of use and navigation of a website greatly affects user happiness and the likelihood that they will return. According to their research, functional experience strengthens loyalty by lowering cognitive friction and encouraging repurchase behavior.

Information Content Experience

The information content experience places an emphasis on how well, where, and how extensive the information is that is offered online. According to Huang and Zhu (2024), it's all about how the user perceives the app's information content. Rose *et al*. (2012) defines content experience in the context of online buying as the informative assistance that consumers get from product descriptions, specs, and reviews while they are shopping. In addition, according to Filieri and McLeay (2014), the informational environment is improved by user-generated evaluations, which in turn increases trust and buy intents. Therefore, trust, clarity, and the establishment of a basis for lasting loyalty are all outcomes of producing high-quality content.

Information Security Experience

Customers' perceptions of the safety and trustworthiness of an online platform are directly related to their information security experience. How well the app safeguards personal information, data, and other sensitive details is what this term alludes to (Huang & Zhu, 2024). Perceived security is defined by Pavlou (2003) as the extent to which customers feel safe making an online purchase in the face of threats including fraud, identity theft, and data abuse. Consumers' propensity to partake in online transactions is influenced by their level of confidence in the honesty, generosity, and expertise of the vendors they deal with (McKnight, Choudhury, and Kacmar, 2002). Transparent regulations and readily apparent security measures (such as SSL certificates and secure payment gateways) mitigate user perceptions of danger, according to Rose *et al*. (2012), who include information security as an important experience component. These security indicators reassure clients that their digital transactions are safe, which increases their trust and loyalty.

Aesthetic Experience

The term "aesthetic experience" describes the pleasure one gets from interacting with things online in terms of their attractiveness, design, and hedonic value. Aesthetic experience indicators were listed by Huang and Zhu (2024) as factors such as interface design, color coordination, refinement, etc. Aesthetics, according to Rose *et al*. (2012), is a crucial precondition of affective experience; they point out that appealing design features may heighten emotional reactions and establish favorable connections with a website. Culturally adapted aesthetics impact trust, happiness, and loyalty in global e-commerce environments, according to Cyr, Head, and

Larios (2010). This means that aesthetics serve as a hedonic driver, enhancing pleasant experiences that encourage both continued use and promotion of the brand.

Customer Loyalty

The degree to which a customer continues to buy from and promote a brand over an extended period of time is often seen as customer loyalty (Oliver, 1999). When consumers are loyal, they are more likely to use a bank's services again, provide good feedback, and suggest the bank to others (Flacandji & Vlad, 2022). Customer loyalty is defined by Baridi and Saadi (2023) as a collection of favorable feelings for a brand that manifests itself via continued positive actions like buying from the same store. According to Vatsa, Agarwal, and Gupta (2023), before a customer's good opinion about a company's services is shown in specific behaviors, it is loyalty. Factors other than loyalty, such as inertia, might motivate apparently good behaviors towards a corporation, thus it's important to stress that loyalty is not always the behaviors themselves.

From what has been said, it is evident that loyalty in both online and offline contexts involves two parts: attitudes and behaviors (Ncube & Kabanda, 2022; Hsieh, 2022). Customers' favorable intents and wishes towards the bank, such as brand advocacy and readiness to pay more, are known as attitude loyalty (Stefanoglou *et al*., 2025). In this case, behavioural loyalty refers to the actual behaviors shown by consumers, such as making repeat purchases, positively recommending the app to others, and so on. In order for companies to thrive, customer loyalty is crucial. To maintain their relevance in the banking industry, banks must always look for methods to improve and raise consumer loyalty.

Online Customer Experience and Customer Loyalty

There has been a lot of research on the correlation between satisfied customers and repeat business. Functional, informative, security, and aesthetic are the four main experience characteristics that Rose *et al*. (2012) found to have a significant impact on customers' trust and happiness, which in turn influence their intentions to repurchase. Perceived security boosts trust and reduces perceived risk, while functional efficiency and information quality decrease ambiguity and encourage platform dependence (Pavlou, 2003; McKnight *et al*., 2002). Similarly, attractiveness elicits favorable emotions and attachments, which in turn reinforce relationships of loyalty (Lavie & Tractinsky, 2004).

Loyalty, as pointed out by Stefanoglu *et al*. (2025), is both an attitude and a pattern of behavior that persists over time and is strengthened by the accumulation of various experiences. This agrees with the opinions of Bhattacharjee and Premkumar (2004), who state that when customers have good experiences with specific information systems, their previous beliefs about those systems, which they get from marketing and friends, are reinforced, and they continue to use those systems. Newer research builds on these findings by demonstrating that confidence in information is enhanced and electronic word-of-mouth is driven by high-quality user-generated material and reviews (Filieri *et al*., 2018). Ye *et al*. (2023) found that interactive and visually engaging experiences amplified emotional involvement, leading to increased loyalty intentions, in a similar vein as study on live-streaming commerce.

Research by Molinillo *et al*. (2020) on the topic of app loyalty in Spain indicated that pleasant emotional and cognitive app experiences impact user loyalty by increasing app satisfaction and trust. Among Spanish retail app users, Molinillo *et al*. (2022) discovered that cognitive, emotional, relational, and sensory experiences all contributed positively to consumer happiness and loyalty. Flacandji and Vlad (2022) in their study in France, discovered that consumer loyalty was impacted by the retailer's app experience in two ways: directly and via the mediation of hedonic and utilitarian values.

Researchers Ncube and Kabanda (2022) in their study among young South Africans concluded that the quality of the mobile banking user experience has a substantial impact on consumer loyalty. The impact of mobile banking app usability on Indian customers' engagement and loyalty was investigated by Ramesh and Padmaja (2025). Customer loyalty was determined to be significantly impacted by factors such as simplicity of use, perceived utility, perceived security, service customisation, and transaction dependability. Researchers Vatsa *et al*. (2023) studied digital wallet users in India and discovered that customer happiness and experience had effects on customer loyalty. The research conducted by Thu *et al*. (2023) on customer loyalty and e-retailing in Vietnam found that customer happiness and customer experience significantly affect customer loyalty.

An important predictor of loyalty results is the quality of the online customer experience (OCX), according to the research. In light of the above, we initially postulated four hypotheses

reflecting the relationships between functional experience, information security experience, information content, aesthetic experience and customer loyalty to direct our investigation.

Method

The study used a cross-sectional survey technique centered on correlational research design. Students enrolled as undergraduates at one institution in Bayelsa state, Nigeria, made up the bulk of the study's population. For two reasons, the study's target population was undergraduates. Firstly, the bulk of undergraduates are believed to be in the 18–35 age bracket, which is also the most likely to be enthusiastic about and likely to use mobile banking (Abayomi *et al*., 2019; Olaleye *et al*., 2022; Ncube & Kabanda, 2022). Second, undergraduates were seen as a more approachable demographic than others because the researchers are also lecturers.

According to the university register, the chosen institution had an estimated student population of 20,000. The sample size that was determined was 377 students using the chart that Krejcie and Morgan (1970) provided. The research used the snowball sampling approach. A Google Forms-based online survey was used to collect data. Students were asked to share the URL to the survey with their fellow university students, and it was also shared with them personally and on certain student WhatsApp platforms. Vatsa *et al*. (2023), Flacandji and Vlad (2022), and Molinillo *et al*. (2020) are among the prior research that have employed this strategy. Adapted scales from prior research were used to assess the study's variables. Items from the Casalo, Flavian, and Guinaliu (2008) scale were used to assess functional experience. Using a scale created by Wolfinbarger and Gilly (2002), we assessed information security experience. The Lopez, Virto, and San-Martin (2018) scale was used to quantify information content experience. The aesthetic experience was assessed using the Lopez *et al*. (2018) scale. The elements used to assess customer loyalty were taken from the scale developed by Molinillo *et al* (2020).

With an original sample size of 377, 289 answers (or 76.6% of the total) were obtained. The data screening and cleaning procedure eliminated 50 replies, mostly because of the large number of missing values. This left 239 responses, or 63.4% of the sample, for the final analysis. Data that had few missing values were imputed using the series mean method in SPSS version 26, which made the data usable. To determine how well the survey questions corresponded to the research hypotheses, exploratory factor analysis (EFA) was used. Kaiser-Meyer-Olkin (KMO) test of sampling adequacy (0.875) and Bartlett's test of sphericity ($p = 0.000$) both indicated that the

sample size was sufficient for factor analysis. The study's expected four-factor structure for online customer experience was not realized; instead, a three-factor structure was developed via principal component analysis (PCA) based on varimax rotation. According to the Parsimony principle, theories should maintain a balance between explaining phenomena and simplicity. This suggests that if by eliminating overlapping dimensions the explanatory power of the model would not be affected then it becomes necessary to reduce the construct. All factor loadings were higher than the standard of 0.4. recommended by Nunally and Bernstein (1994). The eigenvalues of each component varied between 1.106 and 7.113. In addition to revealing a three-factor structure for online customer experience, the interrelationships between the first-order and second-order constructs were also highlighted by the rotating component matrix. You can see the items' relationships with their underlying variables in Table 1 below.

Table 1: Rotated Component Matrix

	Component		
	1	2	3
I feel like my privacy is protected in this bank app.	.874		
I feel safe in my transactions with this app.	.851		
The bank app has adequate security features.	.840		
The bank app provides current and timely information.	.715		
The app provides accurate information.	.637	.411	
I feel like I can trust this app with my login details.	.597	.451	
In this bank app, the search function is useful for finding specific transactions or information.	.444		.434
The design of the app is visually pleasant.		.782	
The app provides content that is relevant to me.		.685	
The layout of the app is easy to follow		.648	
The design of the app is creative and colourful.		.642	
The app provides me with clear and helpful error messages		.516	
The bank app is easy to use, even when using it for the first time.			.839
The structure and content of this app is easy to use.			.796
It is easy to move within this app.			.769

Information experience (factor 1), aesthetic experience (factor 2), and functional experience (factor 3) were recognized as three aspects of online consumer experience based on the correlations established from table 1 above. Using the revised framework derived from the factor analysis, a reliability test was performed to further evaluate the data. Table 2 below displays the findings.

Table 2: Reliability tests

	Cronbach Alpha	Number of items
Aesthetic Experience	0.778	5
Functional Experience	0.799	3
Information Experience	0.907	8
Customer Loyalty	0.879	4

It is confirmed that the items of the scale are structured since all of them surpass Nunally's (1977) 0.7 threshold. We used basic correlation analysis to examine a new conceptual framework that was based on the factor analysis.

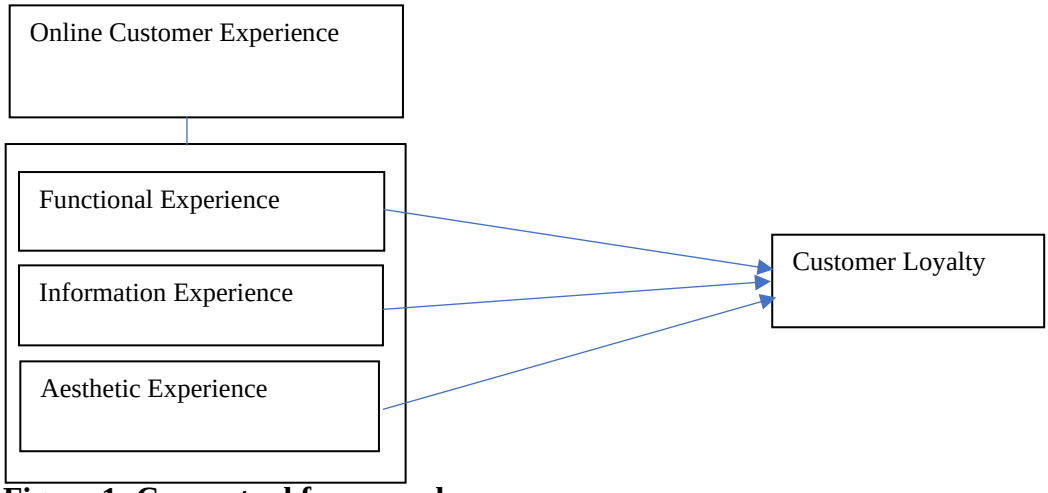

Figure 1: Conceptual framework

H_1: Functional experience has a significant relationship with customer loyalty of bank app users

H_2: Information experience has a significant relationship with customer loyalty of bank app users

H_3: Aesthetic experience has a significant relationship with customer loyalty of bank app users

The results of the correlation analysis are presented in table 3.

Table 3: Correlation Analysis

		INFORMATION EXP	AESTHETIC EXP	FUNCTIONAL EXP	CUSTOMERL OYALTY
INFORMATIONEXP	Pearson Correlation	1	.705**	.482**	.702**
	Sig. (2-tailed)		.000	.000	.000
	N	239	239	239	239
AESTHETICEXP	Pearson Correlation	.705**	1	.447**	.545**
	Sig. (2-tailed)	.000		.000	.000
	N	239	239	239	239
FUNCTIONALEXP	Pearson Correlation	.482**	.447**	1	.439**
	Sig. (2-tailed)	.000	.000		.000
	N	239	239	239	239

CUSTOMERLOYALTY	Pearson Correlation	.702**	.545**	.439**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	239	239	239	239

****. Correlation is significant at the 0.01 level (2-tailed).**

Source: SPSS 26

Table 4 reveals that functional experience has a significant relationship with customer loyalty (r=0.439, p = 0.000), aesthetic experience has a significant relationship with customer loyalty (r = 0.545, p = 0.000) and information experience has a significant relationship with customer loyalty (r = 0.702, p = 0.000). All hypotheses are therefore accepted.

Discussion

Customer loyalty is significantly related to online customer experience, which includes the practical, informational, and aesthetic aspects of the encounter, according to the research. The results corroborate those of previous research. Take Rose *et al*. (2012) as an example; they discovered that the online customer experience greatly impacts customer loyalty. A substantial impact on consumer loyalty is shown by the online customer experience (Molinillo *et al*., 2020; Molinillo *et al*., 2022). Retailer app experience influenced consumer loyalty in two ways, according to Flacandji and Vlad (2022): directly and via the mediation of hedonic and utilitarian values. According to Ramesh and Padmaja (2025), customer loyalty is greatly affected by factors such as transaction dependability, service customization, perceived utility, perceived security, and simplicity of use.

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