

**ARTIFICIAL INTELLIGENCE (AI) - DRIVEN SERVICE DELIVERY AND CUSTOMER
SATISFACTION OF BANKS IN RIVERS STATE**

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ABSTRACT

In recent times many Nigerian banks are deploying Artificial Intelligence (AI) technologies in their banking operations. Some are using AI chat-bots in their customer service delivery. This study therefore investigates the relationship between AI- driven service delivery and customer satisfaction of banks in Rivers state. The theoretical foundation of the study was anchored on the Technology Acceptance Model and Diffusion of Innovation Theory. The study used cross section survey technique in administering self-completing questionnaire on 210 respondents, who were customers of the seven banks that were reported to have deployed AI chat-bots in their banking operations. The data analysis that was carried out using Spearman rank order correlation indicates that the three dimensions of AI- Driven service delivery (Information Quality, System Quality and Service Quality) had significant and positive effect on Customer Satisfaction of the studied banks. The study recommends the use of AI chat-bots in customer service delivery.

KEYWORDS: *Artificial Intelligence (AI), Chat-bots, Customer satisfaction,*

INTRODUCTION

Everything in today's modern world is moving fast, hence the quest for quick service, fast food, etc. Everything must be obtained quickly. This is the case in almost all areas of business, especially in the banking sector, where customer data is essential and customer service is the primary goal, hence quick information processing is very essential. In order to enhance customer service, banks must make investments in digital technologies (Shrestha, 2020). Customers need data security, but they also need a better banking experience. It is becoming more and more difficult for bank personnel to meet every customer's need as the number of consumers rises. Working under this kind of situation is difficult and stressful as employees must respond to the identical inquiry from almost every customer (Tiwari, 2021). As a result of the changes in technology and working culture, each business must adapt to these changing technologies (Truby et al., 2020) (Shrestha, 2020). Therefore, many banks are deploying AI technologies in their banking operations to address their customers' needs. One such technology deployed is AI chat-bots.

A chat-bot is an AI-driven service agent designed to engage in "natural" conversations with customers, enabling the collection of specific information regarding their requirements (Gumus& Cark, 2021). The term "bot" in "chat-bot" is an abbreviation of "robot," indicating that chat-bots are computer programs or systems that replicate human dialogue. The advancement in chat-bot technology has been significant, to the point where customers may not recognize that they are communicating with a chat-bot rather than a human representative. Modern chat-bots are characterized by conversational interfaces that effectively imitate human interactions. They can conduct customer interviews and adaptively utilize consumer insights to provide personalized solutions (Pantano & Pizzi, 2020; Shaalan et al., 2023). Given their diverse functionalities, AI chat-bots are increasingly utilized in the realm of customer service delivery.

The application of artificial intelligence in the Nigerian banking sector enables banks to provide more efficient and effective services to their customers. According to Fola (2023), the application of AI in banking operations has a significant impact on the redesign of banking processes, especially in detecting fraudulent transactions, providing customer support, and personalizing marketing campaigns. In this regard, the adoption of AI by Nigerian banks is expected to enhance business opportunities, improve product quality, create market niche, improve customer's service, reduce operating costs and improve operating profit (Angima & Aluoch, 2023).

According to recent reports, commercial banks in Nigeria have adopted AI-powered chat-bots to improve their performance, efficiency, and customer satisfaction. The banks using AI and their AI chat-bots include First City Monument Bank with *Temi*, Zenith Bank with *Ziva*, Fidelity Bank with *Ivy*, UBA Group with *Leo*, Access Bank with *Tamada*, Heritage Bank with *Octopus* chat-bot, Keystone Bank with *Oxygen* chat-bot, etc. These chat-bots are designed to assist customers with banking tasks and provide personalized investment advice. According to a report on Tribune Online of January 9th, 2023, these seven banks are already competing in not only AI technology adoption but performance efficiency and customer satisfaction in the use of Artificial Intelligence-powered chat-bots. Therefore, this study focuses on these banks. The purpose of this study is to determine the extent to which the deployment of AI chat-bots in customer service delivery has affected the customer satisfaction of these banks.

Problem statement

Customer satisfaction is widely regarded as a fundamental concept and a primary objective within the field of marketing (Erevelles & Leavitt, 1992). It is essential in marketing as it serves as an indicator of consumer purchasing behavior, particularly in relation to repeat purchases, purchase intentions, brand selection, and customer switching behavior (McQuitty et al., 2000). In an effort to enhance efficiency, banks in Nigeria are increasingly implementing Artificial Intelligence technologies to automate expensive, labor-intensive, and repetitive tasks. The integration of AI technologies is proving beneficial for banks in managing operational risks, including the detection of fraud. The strategic utilization of these AI technologies can yield significant benefits for banks, ranging from improved employee and customer experiences to enhanced back-office operations (Tucci, 2020).

AI technology can be deployed in customer service delivery to enhance customer satisfaction. AI chat-bots can enhance customer service delivery in various ways. Because of their availability, chat-bots can provide round-the-clock support, ensuring that assistance is available at any time. It has the capability of offering immediate responses, addressing customer queries and issues promptly. In terms of efficiency, AI chat-bots can handle high volumes of enquiries simultaneously (Brandtzaeg and Følstad, 2017), thereby improving efficiency and reducing customer wait times. Chat-bots excel at providing answers to frequently asked questions (FAQs), retrieving relevant information, and aiding customers in finding solutions. Deploying chat-bots to handle this frees human agents to handle more complex problems. Chat-bots can also personalise interactions, offering tailored recommendations and assistance to customers (Chatterjee et al., 2019). In terms of financial savings, organizations can save money by using AI chatbots instead of a huge customer support staff. According to the 2019 chatbot report, by 2022, 90% of customer interactions would be automated using chatbots in banking customer care (Shrestha et al., 2022).

Software robots and other AI technologies have already been implemented by Nigerian banks to automate and expedite procedures. Some of them use more sophisticated platforms, including the Internet, to operate their chatbots. Through chat chats, they offered

dynamic banking services and human-like engagement through the use of AI and machine learning. The banks using AI include the First City Monument Bank that has its chatbot called *Temj*, Zenith Bank has *Ziva*, Fidelity Bank has *Ivy*, UBA Group has *Leo*, Access Bank has *Tamada*; Heritage Bank has *Octopus*, and Keystone Bank has *Oxygen*. Some of these chat-bots allow customers to perform basic banking transactions. In addition to redefining customer assistance, the application of AI in customer service is enhancing company reputation and customer loyalty.

Even though chatbots have many benefits, they can still fail. According to Adamopoulou and Moussiades (2020), their biggest flaw is their incapacity to understand users, which leads to unsatisfactory customer experiences, that may harm businesses. This problem, which arises from the chatbot's incapacity to correctly interpret different open-ended conversation styles from consumers, can be resolved with regular database updates to address the responses made within a range of chat-bot discussion situations (Brandtzaeg and Følstad, 2017). For instance, it's estimated that Project M, a Facebook's text-based virtual assistant, needed human help in over 70% of interactions. Such blunders can result in an unfavorable public opinion of chatbots, which could hurt any company's bottom line. The public's perception of chatbots may be negatively impacted by cases of such failures. Another area of concern is public acceptance of the new technology. Given the lack of trust many Nigerians have in Internet-related business as a result of internet fraud, there may likely be a challenge of technology acceptance. Given the fact that this technology has the capacity to reduce the workforce, there is a concern that many bank staff may not work fully to see the full optimization of these AI technologies and would rather work to frustrate the success of the new technology. Therefore, this study considers it pertinent to investigate the extent to which customers are satisfied with AI-driven service delivery, with a focus on the seven banks that were reported to have adopted the use of this technology in Nigeria. Recommendations were made based on the findings.

Conceptual Framework

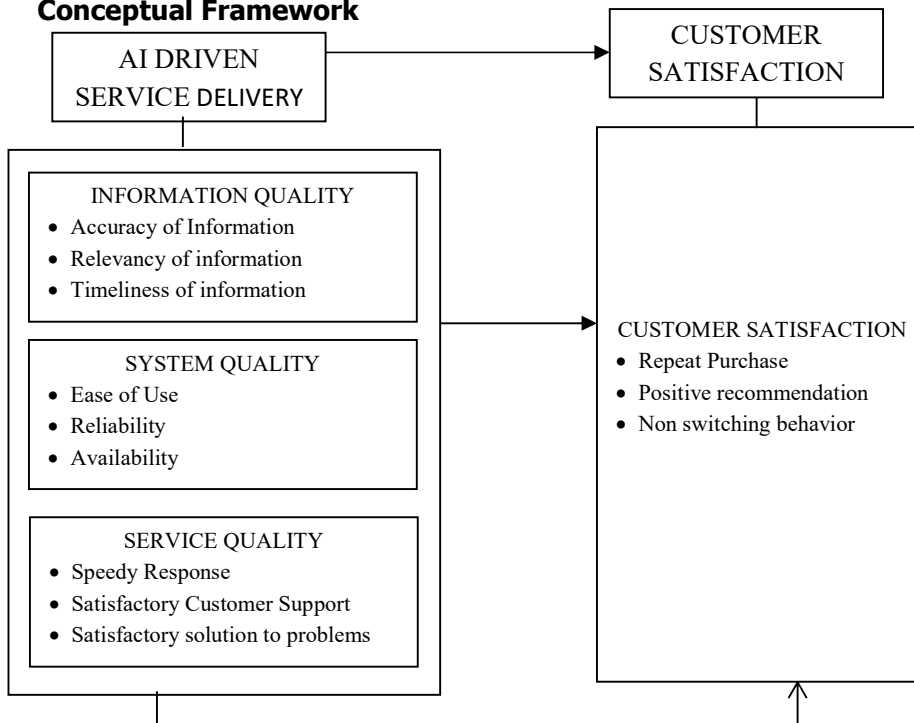


Fig 1.0 Conceptual Framework of Artificial Intelligence - Driven Customer Service Delivery and User satisfaction.

Source: Adapted from the Information Systems Success Model (DeLone and McLean, 2003)

Research Hypotheses

The following Hypotheses were tested in this study.

- H₀₁: There is no significant relationship between Information Quality of AI-Driven Service Delivery and Customer satisfaction of selected banks.
- H₀₂: There is no significant relationship between System Quality of AI-Driven Service Delivery and Customer satisfaction of selected
- H₀₃: Service Quality of AI Driven Service delivery has no significant effect on Customer Satisfaction of selected banks

THEORETICAL REVIEW

Technology Acceptance Model (TAM).

The theoretical foundation of this research is based on the Technology Acceptance Model (TAM). Developed by Davis (1989), TAM, an information systems theory assumes that when users perceive that a type of technology is useful and easy to use, they will be willing to use it. Individual attitudes and views around the adoption of technology are the main focus of this theory. According to the model, when people are shown new technology, a variety of factors affect their choice regarding when, how, and whether to use it. Among the noteworthy elements are the following:

Perceived usefulness (PU): This refers to the 'degree to which a person believes that using a particular system would enhance his or her job performance' (Davis, 1989). Thus, users "perception of usefulness" of a technology determines whether it will be used.

Perceived ease-of-use (PEOU): This refers to the "degree to which a person believes that using a particular system would be free from effort" (Davis 1989). Thus when the technology is perceived to be user friendly, the tendency to use it is higher, unlike in a situation where it is difficult to use or when the interface is complicated. This theory helps us explain how customers of DMBs will accept the use of new innovative products like AI chat-bots, as this will determine their level of customer satisfaction.

Diffusion of Innovation Theory

Roger's (1995) Diffusion of Innovation (DOI) theory is a popular model used in information system research to explain user adoption of new technologies. Rogers defined diffusion as the process by which an innovation is communicated through certain channels over time among the member of a social society'(Rogers, 1 995).Innovation is an idea or object that is perceived to be new (Rogers, 1995). According to DOI theory, the rate of diffusion is affected by an innovation's relative advantage, complexity, compatibility, trialability and observability. Rogers (1995) defines relative advantage as the perceived improvement of the new innovation compared to existing alternatives; Compatibility as the extent to which the innovation is consistent with existing values and practices; Triability as the ability to experiment with the innovation before committing; Observability as the degree to which the results of the innovation are visible to others. The diffusion theory is relevant because it explains the reason why banks adopt technological innovations like AI chat-bot.

CONCEPTUAL REVIEW

Artificial Intelligence

The term 'Artificial Intelligence' was coined in the year 1956 by John McCarthy – one of founders of the AI discipline. The term was coined during a conference held at Dartmouth College and AI has now evolved to become a dedicated industry and a field of research. However, it has recently gained traction owing to continuous developments and newly discovered purposes and functions.

Some scholars have defined Artificial Intelligence from various perspectives. Kaplan and Haenlein (2019) state that artificial intelligence represents "a system's ability to interpret external data correctly, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaptation". Artificial Intelligence (AI) according to Copeland (2022), is the capacity of a computer system or computer-driven robot to carry out functions often performed by people with high intelligence. It is commonly used to create artificial intelligence (AI) systems that possess human-like cognitive abilities, including the capacity for reasoning, providing meaningful findings, interpretation, and experience-based learning.

According to Rust (2020), AI aims to emulate capabilities which were once unique to humans through the use of computerized machinery. AI operates through a continuous learning process using genetic algorithms, deep learning, and natural language processing technologies (Kumar et al., 2019).

This brings us to AI chat-bots. A chat-bot is a service agent powered by Artificial Intelligence (AI) that has the ability to have "natural" conversations with customers in order to gather specific details about their needs (Gumuş& Cark, 2021). The word "bot" in "chat-bot" is short for "robot", which suggests that chat-bots are computer programs or systems that simulate human conversation with others. Conversational chat-bots are software applications that employ natural language processing to simulate human conversations (Pillai&Sivathanu, 2020)

AI- Driven Customer Service Delivery

AI based Chat-bots are used in customer service delivery owing to their various capabilities. Chat bots have the ability to respond to queries, provide purchase advice and suggestions, place orders, provide shipping updates, assist with refund requests, and handle customer complaints efficiently and simultaneously (Brandtzaeg and Følstad, 2017). Chat bots are, therefore, an alternative to telephone calls, reading online information and FAQs, awaiting responses via email, and waiting in line to speak to a live service agent (Nuruzzaman and Hussain, 2018).

From a customer relationship management perspective, chat-bots can also learn customers' history and habits and gather the appropriate insights, which may be used to effectively target customers (Chatterjee ,et al., 2019). These features have the potential to positively impact user satisfaction and customer retention since the chat-bot will be able to offer recommendations based on user preferences. One of the many advantages of chat-bots is that this self-service technology is available 24 hours a day, without any interruption. Thus, chat-bots not only reduce costs by eliminating the need to hire personnel during the day and pay them an additional rate for working after-work hours, but they will also be available to cater to individuals from around the globe that require their services.

Dimensions of AI Driven Customer service Delivery

The conceptual framework of this study is based on the updated IS Success model by DeLone and McLean (2003), from which the three dimensions of the independent variable - information quality, system quality, and service quality-were adapted. These are discussed below:

Service Quality

Service quality in the context of AI chat-bots refers to the level of excellence in providing assistance and meeting user expectations. Hence AI chat-bot service quality is a major determinant of its success as an information system (DeLone&McLean, 2003) when compared to the user's expectations of the service. The service quality dimension is based

on the SERVQUAL model (Parasuraman, Zeithaml and Berry, 1991) and therefore includes assurance, empathy, and responsiveness measures. Assurance represents the system's ability to solve a user's query and effectively communicate the solution with them. The chat-bot should be able to provide correct and relevant information. Empathy represents the system's ability to understand the user's query. In this regard, an AI chat-bot should be able to comprehend user input, including understanding context, language, nuances, and user intent. The responsiveness measure delineates the prompt provision of services to the user by the system (Trivedi, 2019). Thus, a high-quality AI chat-bot should be responsive by providing prompt and accurate responses to customer queries and requests. It is believed that service quality addresses the post-purchase stage of the customer journey because the measures are indicative of the customer's satisfaction level following their transaction with the AI chat-bot.

Information Quality

This dimension measures the quality of information provided by an AI chat-bot. It is expected that the responses should be useful, relevant, and easy to understand by the user who requested the information (Gorla, Somers & Wong, 2010). Users rely on chat-bots for accurate information; hence, their responses should be factually corrected to engender trust and credibility. Relevance of responses means that users receive answers tailored to their specific needs in order to enhance overall user experience. AI chat-bot responses should be clear and communicated in a clear, concise manner to improve user comprehension and reduce the likelihood of misunderstanding. Typical measurement items for this dimension include accuracy, relevancy, and timeliness (Urbach and Müller, 2012).

System Quality

The system quality dimension of the model measures the technical performance of the Chat-bot by focusing on its usability aspects and performance characteristics (McLean & DeLone, 1992). It constitutes the chat-bot's quality of information processing; thus, the chat-bot should have the capacity to generate relevant and meaningful responses. The chat-bot should be able to understand the user input accurately and hence should have advanced language processing capabilities. An excellent chat-bot should possess an intuitive design that facilitates easy and efficient interaction. Overall, the concept of system quality for an AI chat-bot involves the ability to accurately understand user input, generate relevant responses, operate reliably, and provide a user-friendly interface for seamless interaction. The measurement items of system quality relevant to chat bots include availability, reliability, and ease of use (Urbach and Müller, 2012).

Customer Satisfaction

Consumer satisfaction according to Kotler & Keller (2016) represents a person's feelings of pleasure or disappointment that results from comparing a product or service's perceived performance (or outcome) to expectations. In this regard, Husein-Umar (2013) in Prasetya (2021) defines customer satisfaction as the level of consumer feelings after comparing what is received and what is expected. After consumption, a consumer can experience one of three levels of general satisfaction, namely if the performance is below expectations, a consumer will feel disappointed but if the performance is in accordance with expectations, he will feel satisfied and if the performance exceeds his expectations, he will feel very satisfied (Prasetya, 2021).

According to Woodruff (1997), many firms use customer satisfaction as a source of competitive advantage, as it determines whether there will be a repeat purchase (Kotler et al., 1996). In this regard, customer satisfaction is seen as the major reason behind all the

efforts aimed at enhancing product and service quality. In addition, when customers are satisfied with a product, they tend to refer to others to try the source of satisfaction (Ramani& Kumar (2008). Most times, satisfied customers are less receptive to competitors' offerings (Lassar, et al. 2000) and tend to exhibit non-switching behaviour.

EMPERICAL REVIEW

Some studies have been conducted in this field, linking AI-embedded service delivery and user satisfaction. Aziz et al. (2021) conducted a study in Pakistan that examined the impact of an AI-based chat-bot on customer satisfaction. The analysis carried out on questionnaire data obtained from 140 respondents indicated that reliability, understandability, and accuracy are the major elements of AI chat-bot that can create positive impact on customer satisfaction. A related study by Alboqami (2023) in the Saudi Arabian retail industry examined factors affecting consumer intentions to adopt chat-bots. Based on an online survey conducted on 903 customers, the structural equation modelling analysis indicated that perceived intelligence, Perceived Ease of use, and perceived usefulness have a significant positive effect on consumers' intentions to adopt chat-bots. Arezoo (2021) adopted a qualitative interpretivist approach to investigate the role of intelligent virtual assistants as frontline employees. The study conducted 31 semi-structured interviews with users of Siri, Alexa, and Google Assistant around the world, and supplemented it with YouTube content analysis. The research outcome indicates that when customers engage with Intelligent Assistants, Anthropomorphic features such as voice recognition and mannerism affect the type of gratification (e.g. utilitarian, hedonic, and social) that users experience. A similar study by Annika (2022) in Malta examined the impact of Artificial Intelligent (AI) chat-bots on customer journey within a customer service context. The conceptual framework of this study was based on DeLone and McLean's (2003) Information Systems Success Model. Data obtained from an online survey of 203 respondents were analysed using structural equation modelling, and the result shows that information quality and system quality of chat-bots, as information systems, positively impact user satisfaction and motivate consumers to use chat-bots for future customer service needs.

In Nigeria, some studies have been conducted in this area. Ukpong (2022) examined how AI technologies can be integrated into the operations of Nigerian commercial banks in AkwaIbom. Based on a survey conducted on 143 respondents, the study outcome indicates that AI can be applied in bank operations such as credit risk management and personalized customer relationship management. In a similar study by Elegunde and Osagie (2020), the study examined how AI complements work processes and how it eases employee operations in banks in Nigeria. Questionnaire data obtained from 127 staff members of six selected banks in Lagos State were analyzed, and the findings revealed that Artificial Intelligence complements the work process in Nigerian banks and that machine-aided tasks ease operations in banks. A recent study by Salemcity et al. (2023) investigated the effect of AI on employee costs and other operating costs in the banking sector, using ten-year financial records of banks. The panel data regression analysis shows that the adoption of AI has negative effects on employee cost and a positive effect on operating expenses of DMBs in Nigeria.

Gap in Literature

A closer look at the empirical studies shows that most of the studies on AI-driven customer delivery have been carried out in other countries. Few studies have been conducted in Nigeria. The few studies that were carried out in Nigeria were not correlation studies and were not carried out using the exact variables and methodology proposed in this study. A

few of the studies that were carried out did not focus on banks in Rivers state. This represents a research gap which this study aims to fill in this research.

METHODOLOGY

This study adopted a cross-sectional survey research design. The population of the study consists of seven banks that were reported to have adopted AI technology in banking operations.

According to a report on Tribune Online of January 9th, 2023, the following banks have deployed AI chat-bots namely, First City Monument Bank(*Temi*), Zenith Bank(*Ziva*); Fidelity Bank(*Ivy*); UBA Group (*Leo*), Access Bank(*Tamada*), Heritage Bank(*Octopus*), and Keystone Bank(*Oxygen*). Since the population of customers of these banks is non-finite, the study used the Cochran formula to determine the sample size. Guided by Amadi (2021), the study started by carrying out a preliminary survey; enquiring if respondents have used any of the chat-bots of these selected banks. Out of the 20 copies of the questionnaires that were administered, 9 persons answered in the affirmative. This probability was substituted in the Cochran formula for infinite population stated below:

$$n_{\infty} = \frac{(Z_{\alpha/2})^2 pq}{e^2} \quad \dots \text{Equation 3.0}$$

Where

p= Probability of a positive response.

q = Probability of negative response.

e = Tolerable error (0.05).

$Z_{\alpha/2} = 1.96$ from the critical table Z of 0.05 under infinity ∞ .

e = 0.05, the significant level.

n = Sample size.

Substituting

p= 0.45; q= 1-p =0.55 in Equation 3.0 above, we have

$$n = \frac{(1.96)^2 \times 0.45 \times 0.55}{(0.05)^2}$$

$$n = 380 \text{ respondents}$$

The sample size (n) for the study was **380** customers

Therefore, the questionnaire was administered to 380 customers of these seven banks. Fifty five (55) copies of the questionnaire were shared to customers at the respective zonal headquarters of the banks. The scale used in the questionnaire was adapted from DeLone and McLean (2003). Of the 380 questionnaires distributed, 218 copies of them were returned. Of this number, eight were discarded due to incomplete information. Only 210 copies of the questionnaire were found to be useful and were therefore used in data analysis. The questionnaire used for the study variables was tested for reliability before they were used. The result of the reliability test is shown on Table 1 below.

Data Analysis

The result of the internal reliability test is as shown below:

Table 1 :Reliability statistics

S/No	Items	Cronbach Alpha Value
1	AI Chat-bot System Quality	0.823

2	AI Chat-bot Information Quality	0.810
3	AI Chat-bot Service Quality	0.790
4	Customer Satisfaction	0.788

Source: Computation results by the Author

Descriptive Statistics

Table 2. Summary of descriptive statistics

Particulars	Frequency	Percentage	Cumulative
GENDER			
Male	113	53.8	53.8
Female	97	46.2	100
AGE			
15-30	95	45.2	45.2
31-40	60	28.6	73.8
41-50	35	16.7	90.5
Above 50	20	9.7	100
EDUCATION			
FSLC/WASC	47	22.4	22.4
NCE /HND/BSC/B.ED	98	46.7	69.0
MBA/MSC	50	23.8	92.9
PH.D	15	7.1	100
OCCUPATION			
PUBLIC SERVANT	30	14.3	14.3
STUDENTS	45	21.4	35.7
EMPLOYED(PRIVATE)	53	25.2	61.0
SELF EMPLOYED	58	27.6	88.6
UNEMPLOYED	24	11.4	100

Source: Extracts of computations results by the Author

Inferential Statistics

Inferential statistics were conducted to determine the relationship between the dimensions of AI-Driven Service Delivery and the measures of Customer Satisfaction. This was carried out using Spearman rank-order correlation. The results are shown in Table 3.

Hypothesis One

This hypothesis was used to investigate the effect of Information Quality of AI chat-bots on customer satisfaction. The result of the Spearman rank order correlation analysis shown on Table 3 below shows that a significant positive correlation exists between Information Quality and Customer satisfaction, as shown by this result: **(rho = 0.444, at p 0.00 < 0.05)**. This result indicates that an increase in Information Quality will significantly result in an increase in customer satisfaction. Null hypothesis One (H_{01}) was therefore rejected. The study concludes that increasing the information quality of a chat-bot enhances customer satisfaction.

TABLE 3: Correlations between Chat-bot Information Quality and Customer satisfaction

			INFO_QUAL	CUST_SATIS
Spearman's rho	INFO_QUAL	Correlation Coefficient	1.000	.444**
		Sig. (2-tailed)	.	.000
		N	210	210
	CUST_SATIS	Correlation Coefficient	.444**	1.000
		Sig. (2-tailed)	.000	.
		N	210	210

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

Hypothesis Two:

This hypothesis was used to investigate the effect of System Quality of a Chat-bot on Customer satisfaction, and the result of the Spearman Rank Order Correlation analysis shown on Table 4 below shows that a significant positive correlation exists between Service Quality and Customer satisfaction, as shown in this result: (**rho = 0.462, at p 0.00 < 0.05**). Null hypothesis Two could not be supported, and was therefore rejected. The study concludes that increasing the system quality of chat-bots positively impacts Customer Satisfaction.

TABLE 4: Correlations between Chat-bot System Quality and Customer satisfaction

			SYSTEM_QUAL	CUST_SATIS
Spearman's rho	SYSTEM_QUAL	Correlation Coefficient	1.000	.462**
		Sig. (2-tailed)	.	.000
		N	210	210
	CUST_SATIS	Correlation Coefficient	.462**	1.000
		Sig. (2-tailed)	.000	.
		N	210	210

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

Hypothesis Three:

This hypothesis was used to investigate the effect of Service Quality on Customer satisfaction, and the result of the Spearman Rank Order Correlation analysis shown in Table 5 below shows that a significant positive correlation exists between Service Quality and Customer satisfaction, as shown in this result: (**rho = 0.387, at p 0.00 < 0.05**). Null hypothesis Three could not be supported, and was therefore rejected. The study concludes that increasing the service quality of chat-bots positively impacts Customer Satisfaction.

TABLE 5: Correlations between Chat-bot Service Quality and Customer satisfaction

			SERV_QUAL	CUST_SATIS
Spearman's rho	SERV_QUAL	Correlation Coefficient	1.000	.387**
		Sig. (2-tailed)	.	.000
		N	210	210
	CUST_SATIS	Correlation Coefficient	.387**	1.000
		Sig. (2-tailed)	.000	.
		N	210	210

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

Discussion of Findings

The outcome of this study indicates that the dimensions of AI – Driven service delivery used in the study have a positive effect on customer satisfaction of the selected banks in the state of river. Specifically, the study established that the quality of chat-bot information significantly impacts customer satisfaction. Thus, accurate, timely, and helpful responses enhance customer experience, thereby fostering satisfaction and trust in the use of chat-bots. Conversely, when a chat-bot's information quality is inaccurate or unclear, the user may be frustrated and dissatisfied.

The study also established that AI chat-bot system quality directly influences customer satisfaction. This means that a well-designed and efficient AI chat-bot system enhances the user experience when it provides quick and accurate responses. Thus, factors such as usability, responsiveness, and the system's ability to understand and address customer queries contribute to overall customer satisfaction. A poorly designed system can lead to frustration and dissatisfaction among users.

Finally, the study also found a positive and significant relationship between AI chat-bot service quality and customer satisfaction. Thus, when AI chat-bot services are responsive, personalised, and effectively address customer needs, customer satisfaction is enhanced. This means that AI chat-bot requires clear communication, quick issue resolution, and a user-friendly interface in order to enhance service quality that fosters positive customer experience. Conversely a poor service quality such as slow response times, unhelpful interactions can lead to customer dissatisfaction.

The conclusions reached above seem to conform with those of earlier studies. This research outcome is in agreement with the findings of Syaeful (2019), who determined the effect of AI chat-bot service quality on customer satisfaction and customer loyalty. The analysis of data obtained from 386 users of Telkomsel's Intelligent Artificial services indicated that AI chat-bot service quality measured using physical evidence, reliability, responsiveness, and assurance as variables had a positive impact on customer satisfaction and loyalty. The conclusions reached above are in conformity with those reached by Annika (2022) in Malta. The research outcome shows that information quality and system quality of chat-bots, as information systems, positively impact user satisfaction and motivate consumers to use chat-bots for future customer service needs. A similar conclusion was reached by Aziz et al. (2021), who concluded that reliability, understandability, and accuracy are the major elements of an AI chat-bot that can create a positive impact on customer satisfaction.

CONCLUSION AND RECOMMENDATIONS

Based on the results of the many analyses carried out, the study concludes that AI-driven customer service delivery has a significant influence on the customer satisfaction of selected banks in the river state. The study established that the quality of chat-bot information significantly impacts customer satisfaction. It also found a positive relationship between chat-bot system quality and customer satisfaction. The chat-bot service quality was confirmed to directly influence customer satisfaction of the studied selected banks.

Based on the findings made above, the study gives the following recommendation:

1. AI technologies should be incorporated in customer service delivery.
2. Ensure that the AI chat-bot is well-trained and thoroughly tested before deployment.
3. To enhance customer satisfaction in the use of chat-bots, banks should create a user-friendly interface for the chat-bot that is intuitive and easy to navigate. Ensure that customers can easily find and access the chat-bot on banks website or app. Provide clear instructions on how to interact with the chat-bot and offer assistance options if needed.
4. Banks should continuously monitor and analyse the chat-bot's performance metrics, such as response time, accuracy, and customer satisfaction ratings. Identify any patterns or issues that may arise and proactively address them. Regularly evaluate the chat-bot's performance against set goals and benchmarks.
5. Banks should clearly communicate to their customers that they are interacting with an AI chat-bot and manage their expectations accordingly. Transparency about the chat-bot's capabilities and limitations helps customers understand the purpose of the chat-bot and reduces frustration if the chat-bot cannot handle certain complex queries.

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