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Assessment of Public Perception and Trust in AI Chatbots Utilized by Nigerian Government Agencies for Public Relations Management

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Abstract
The integration and utilization of artificial intelligence (AI) chatbots by government agencies for public relations management has gained momentum globally as a significant advancement in public engagement and service delivery. This study assessed public perception and trust in the use of AI chatbots by government agencies in Nigeria, focusing on their potential to enhance public relations management. Grounded in the premises of Technology Acceptance Model (TAM) and Trust Theory, an online survey was conducted with a sample size of 384 respondents to assess factors influencing citizens' acceptance and trust of AI-driven communication tools utilised by government agencies in Nigeria. Findings show that the underlying construct of social presence in the AI chatbots (sense of human contact, sociability, sensitivity) fosters stronger public perceptions of human-like connection in the virtual agent's attitudes. The study also found that the AI chatbot's ability to satisfactorily respond to inquiries with the mean score (M = 3.65, SD = 0.75), suggests that users generally trust the AI chatbots of government agencies to respond accurately to their inquiries. Further findings indicate that satisfaction with the efficiency and positive interaction quality of the chatbots (M = 3.28, SD = 1.08) is responsible for public acceptance and trust, though users have mixed experiences regarding the chatbot's consistent availability. The findings also suggest that the AI chatbots have significant impact on public relations management and service delivery by Nigerian government agencies. The study thus concludes that AI chatbots' relational elements and consistent availability hold the key to enhanced trust and public relations management as well as bridging the gap between public expectations and service delivery by government agencies in Nigeria. .

Keywords: AI Chatbots, Public Perception, Trust, Government Agencies, Public Relations

Introduction

Communication, once considered an exclusive preserve of human beings, has expanded beyond human interaction, with machines now actively involved not just in transmitting messages but also in creating and delivering them. Machines now serve as both mediators and communicators that actively participate in the construction of messages designed for either mass audience or for specific individual recipients (Sundar & Lee, 2022). As machines take more active roles in the communication processes of public and private organisations, artificial intelligence (AI) systems are ever-increasingly being integrated into public relations strategies. The adoption of AI in public-sector operations worldwide is transforming how governments interact with citizens, particularly in public relations management and service delivery. AI chatbots, automated programmes designed to simulate human conversations, are widely used to handle routine tasks, provide information, and engage in customer service (Cheng, Zhang, Cohen & Mou, 2022). As technological advances enable AI chatbots to perform complex tasks, their potential to facilitate real-time responses, improve service efficiency, and enhance government-citizen communication makes them valuable tools in public relations and organizational governance (Weerasinghe, Johar & Khatibi, 2022).

Globally, governments have begun to integrate AI-driven solutions as part of digital governance initiatives aimed at making public services more accessible and user-friendly. Technological advances in AI provide new tools of digital assistance which government agencies can leverage to enhance public engagement. The Nigerian government faces longstanding challenges in effective public communication, often hampered by bureaucratic delays, inefficiency, and limited accessibility to public services. Years of perceived inefficiency, misinformation, and lack of transparency, has led to public resentment and lack of trust in the Nigerian government's communication efforts. This has fueled skepticism about the credibility and effectiveness of official messages and platforms. Although the use of AI in Nigeria's government operations is still developing, it holds promise for revolutionizing public relations, enhancing service efficiency, and improving public perception (Obun-Andy & Banjo, 2021). Government agencies in Nigeria, including the Corporate Affairs Commission, Public Complaints Commission, Ministry of Communications and Digital Economy, National Information Technology Development Agency (NITDA), National Centre for Artificial Intelligence & Robotics (NCAIR), Nigerian Communications Commission (NCC), Securities and Exchange Commission (SEC), Ministry of Robotics and Artificial Intelligence, Cross River State, Federal Airports Authority of Nigeria, Federal Ministry of Aviation, and Nigeria Deposit Insurance Corporation as well as the Supreme Court of Nigeria have adopted chatbots initiatives. These applications signal a significant step towards enhancing public service delivery and public relations management, enabling quicker, round-the-clock responses to citizens' queries, reducing inefficiencies, and fostering accessibility (El Gharbaoui, El boukhari & Salmi, 2024).

Nevertheless, the success of AI chatbots in Nigerian public relations depends largely on public acceptance and trust, which have historically been compromised by issues of inefficiency, corruption, and lack of transparency (Apriliani, 2022). Trust in AI systems is pivotal for effective

citizen engagement, with reliability, transparency, and competence identified as key to user confidence in these digital tools. For AI chatbots to be successfully integrated into the public relations strategies of government agencies, the public must perceive these tools as reliable and capable of delivering accurate and useful information. According to Trust Theory, trust in technology is influenced by users' perception of the system's competence, integrity, and benevolence (Shareef, Kapoor, Mukerji, Dwivedi & Dwivedi, 2020). The Technology Acceptance Model (TAM) also provides insight into public acceptance of AI chatbots, emphasizing perceived usefulness and ease of use as determinants of user adoption (Goli, Sahu, Bag & Dhamija, 2022).

The use of AI chatbots has become vital for public relations in government sectors around the world, where these tools aim to streamline communication, boost efficiency and cut through bureaucratic delays. However, Nigeria faces challenges with public trust in government due to longstanding issues like inefficiency and corruption, which influence citizens' engagement with public services. As Nigerian government agencies adopt AI chatbots, questions about perception of social presence, acceptance, trust, satisfaction, and impact remain critical. Assessing public perception of these AI systems is essential to understanding their effectiveness in fostering trust. It is against the backdrop that AI chatbots are an emerging phenomenon in Nigerian government agencies, and there is lack of comprehensive data on public perception, acceptance, trust, and satisfaction of AI chatbots used for public relations management. Thus, the study aims to address the gap and provide insights into how these tools are shaping government-citizen relationships and transforming public relations management in Nigerian government agencies.

To achieve broad objective of this study was to assess how Nigerian citizens perceive the integration and use of AI chatbots in managing communication and engagement between government agencies and the public as well as their trust in the AI-driven communication tools used by government agencies in services delivery, the following research questions have been formulated to guide the study:

1. What is public perception of the AI chatbots used for public relations management by Nigerian government agencies?
2. What is the level of public trust in the AI chatbots used as public relations tools by government agencies in Nigeria?
3. What are the factors influencing public acceptance and trust in the AI chatbots of Nigerian government agencies?
4. What is the impact of AI chatbots on public relations management and service delivery in government agencies?

Artificial Intelligence Chatbots

The concept of artificial intelligence (AI) which dates back to the 1950s when Alan Turing published a paper that is widely regarded as a foundational work in the field has become integrated into various aspects of daily life worldwide. The swift progress of Artificial Intelligence has induced transformative effects across numerous sectors, including public relations, enabling organizations to manage communication processes more efficiently and effectively (Jeong & Park, 2023). Although still early in the journey towards widespread adoption, the growing presence of

AI within the Nigerian public relations sector is an undeniable reality. Public and private organizations in Nigeria are progressively infusing AI into their public relations approaches (Adamu, 2024). With the advent of sophisticated AI technologies, public relations professionals can now extract valuable insights regarding stakeholder attitudes and behaviours through real-time data analysis.

AI technologies, such as machine learning and natural language processing, facilitate data analysis, trend identification, and audience sentiment prediction, enabling more informed communication strategies. A key application is the use of AI-powered chatbots, which simulate human conversation to address inquiries, disseminate information, and support customer interaction 24/7, significantly enhancing engagement across various sectors (Natale & Ballatore, 2020). AI chatbots also help public relations professionals manage media monitoring and content creation, allowing for real-time insights and response capabilities that are essential in today's fast-paced media landscape. These capabilities are invaluable in an era where public relations practitioners must navigate a constantly changing media landscape with real-time information and rapid response expectations.

AI Chatbots in Government Public Relations Management

As artificial intelligence technologies continue to make in-roads into more governmental organisations worldwide and Nigeria in particular, the intersection of public relations and AI Chatbots are shaping the future of government communication strategies and public relations management. A key advantage of AI-based chatbots in government public relations management is their ability to produce quality content that is optimized for search engines, and their capabilities in synthesizing large amounts of data from various sources within seconds, thereby offering round the clock services that enable continuous public engagement (Panda, Upadhyay & Khandelwal, 2019). This capability is particularly valuable in emergency situations, where instant information and real-time updates are crucial (Natale & Ballatore, 2020).

Research findings suggest that government chatbots can significantly enhance crisis communication by providing accurate and up-to-date information, helping to manage public perception and reduce panic (Adamu, 2024; Agba, Agba & Obeten, 2023; Mundy, 2021; Khan & Digout, 2018). In instances such as natural disasters or public health crises, government agencies struggle with the sheer volume of public inquiries, leading to delays in communication and a perception of inefficiency Chatbots can improve transparency and accessibility in such situations acting as a first point of contact that guides citizens to relevant services and resources (Adamu, 2024). Chatbots are also capable of tracking and interpreting patterns in user interactions, allowing government agencies to gauge public sentiments and opinion on various policies and initiatives (Agba, Agba & Obeten, 2023).

The integration of AI into public relations management allows government agencies to conduct real-time sentiment analysis, helping to identify emerging public concerns or potential issues before they escalate. This ability to monitor and respond to shifts in public sentiment can enhance the effectiveness of government communication strategies and improve citizen trust in government institutions. Notwithstanding, the adoption of AI chatbots in government public relations management makes it both exciting and scary, which underpins ethical concerns that demand thoughtful assessment. The ethical challenges associated with AI include factual errors,

bias, privacy issues, and transparency problems (Tziakouri, 2024). A key ethical concern centers on the risk of biased decision-making, as AI systems are trained on historical data; thus if the data contains biases, AI chatbots algorithms may unintentionally uphold and even intensify these biases. This could result in discriminatory or unjust public relations practices that affect how individuals or groups are represented and perceived. Additionally, when AI chatbots rely on flawed data, it risks reinforcing stereotypes or prejudiced messaging, potentially undermining trust between government agencies and the citizens (Mundy, 2021).

Trust and Impact of AI Chatbots on Public Relations Management

AI chatbots have become an integral part of public relations management across various sectors, including government agencies, to facilitate communication, handle inquiries, and improve overall engagement. Trust is a key element in public perception of AI chatbots, as it directly impacts the effectiveness of these technologies in achieving public relations objectives (Følstad & Skjuve, 2019). The Technology Acceptance Model (TAM) and Trust Theory offer valuable frameworks for understanding how users accept and trust AI systems. According to TAM, perceived ease of use and usefulness are primary factors influencing user acceptance of new technologies (Tziakouri, 2024). When users perceive AI chatbots as accessible, useful, and responsive, trust levels increase, which leads to greater engagement and satisfaction (Lu, Fan & Zhou, 2016). Additionally, Trust Theory suggests that perceived competence, fairness, and empathy are essential in building trust with automated systems (Youn & Jin, 2021). This theory emphasizes that, in the context of PR, chatbots should be designed with features that convey warmth, empathy, and reliability to meet users' expectations and enhance their trust in AI-driven public relations strategies.

Empirical studies have shown that trust in AI chatbots is significantly influenced by transparency and the perceived "human-likeness" of the chatbot interactions. In a study by Men, Zhou, and Sunny Tsai (2022), researchers found that AI chatbots in public relations settings were more effective when users felt that the chatbots demonstrated a social presence, an element linked to human traits such as empathy and understanding. This perception of social presence helps to reduce skepticism toward AI by providing users with a feeling of personalized interaction (Sundar, 2020). Similarly, Jiang and Cheng (2022) observed that the level of trust users placed in chatbots was closely related to the chatbot's ability to simulate human conversational styles, with those perceived as more personable and less robotic earning higher trust ratings. Furthermore, studies by Følstad & Brandtzaeg (2020) highlight that explainability and transparency in AI responses significantly influence public perception and trust, especially in government public relations contexts where citizens seek clear and accurate information. Therefore, transparency and the human-like design of AI chatbots play essential roles in the success of public relations initiatives, as they positively influence public perception and acceptance.

The impact of AI chatbots on public relations management is also evident in their ability to improve accessibility, efficiency, and citizen engagement. Chatbots offer 24/7 communication access, streamline processes, and handle a high volume of inquiries, reducing response times and enhancing accessibility (Araujo, 2018). In Nigeria, where government agencies face challenges like limited resources and complex bureaucratic structures, AI chatbots can assist in addressing these constraints by offering timely and consistent information to the public (Nwosu, Obalum & Ananti, 2024). Research by Zhang, Følstad, and Bjørkli (2023) shows that chatbots in government settings

are effective in delivering information, guiding citizens through procedures, and processing service requests. This study also found that citizens who experienced efficient chatbot interactions had a higher degree of trust and satisfaction, which aligns with the technology acceptance model's assertion that perceived usefulness fosters acceptance (Feine, Gnewuch, Morana & Maedche, 2019). Consequently, AI chatbots help bridge communication gaps between citizens and government agencies by enhancing efficiency, which in turn improves citizens' overall experiences and satisfaction with public services.

However, empirical research also underscores the limitations of AI chatbots in handling complex or emotionally sensitive public relations interactions. A study by Moore and Hübscher (2021) found that while chatbots are effective for routine inquiries, they struggle to replicate human empathy and emotional intelligence, which are often necessary for managing sensitive or crisis communication. This limitation can negatively impact trust, as users may feel that the chatbot lacks the personal touch needed in certain interactions (Sundar, 2020). The findings of Youn and Jin (2021) similarly suggest that the effectiveness of chatbots is limited by their ability to adapt to users' emotional needs, particularly in cases that require nuanced responses. In this regard, some researchers argue for a hybrid model where human agents and chatbots work together to balance efficiency with emotional sensitivity (Feine, Gnewuch, Morana & Maedche, 2019). Overall, while AI chatbots have a significant impact on enhancing the efficiency and reach of public relations in government agencies, trust can be maximized by balancing automated and human elements, ensuring that citizens receive both the responsiveness of AI and the empathy of human interaction when needed.

Theoretical Framework

To ensure consistency and depth in the interpretation of data, offering a foundation for developing sound arguments and drawing meaningful conclusions, this study was underpinned by *Relationship Management Theory*, propounded by James A. Ledingham and Stephen D. Bruning in 1998, and *Trust Theory* developed by Jack Gibb in 1961. Relationship management theory posits that effective organization-stakeholder relationships are grounded in common interests, shared goals, and mutual benefits, focusing on developing and sustaining long-term, supportive relationships that foster trust, cooperation, and understanding (Ledingham & Bruning, 1998; Ledingham, 2003). This theory suggests that public relations extend beyond communication to satisfying public needs and helping organizations achieve their goals (Amadi, Chigbu, & Dike, 2023). In the context of artificial intelligence, the theory becomes particularly relevant, as AI chatbots enable continuous, real-time engagement with stakeholders, making relationship-building dynamic and immediate. The theory's emphasis on relational outcomes such as trust, satisfaction, and control mutuality aligns well with the study's focus on AI chatbots in public relations, where trust and satisfaction are central. As Kwadade-Cudjoe (2024) highlights, chatbots enhance trust in government agencies by maintaining a consistent communication channel, offering real-time feedback, and adapting to public needs, thus strengthening stakeholder relations in line with relationship management principles.

Jack Gibb's Trust Theory focuses on communication behaviours that either build or erode trust within relationships. Trust Theory outlines six pairs of communicative behaviours that influence the trustworthiness of interactions, classifying them into supportive and defensive

climates (Gibb, 1961; Cummings, 2017). These pairs include contrasting behaviours, such as *evaluation versus description* and *control versus problem orientation*, which contribute either to an environment that fosters trust or one that provokes defensiveness and mistrust. In today's digital interactions, these principles apply not only to human communication but also to AI-driven platforms like chatbots, where supportive communication traits such as providing clear, respectful, and user-centered responses are critical to trust-building (Söllner, Hoffmann & Leimeister, 2016; Gefen & Pavlou, 2018). The supportive principles of Gibb's theory are relevant to this study as AI chatbots demonstrating problem-solving approaches may significantly increase user satisfaction, as citizens experience a sense of respect, reliability, and understanding through government services (Youn & Jin, 2021).

Methods

The survey was adopted as research design, and an online survey using Qualtrics was designed for data collection on public perceptions of AI chatbots of government agencies in Nigeria. The methodology follows a quantitative research paradigm, suitable for assessing public perception, usage, acceptance, trust, and correlations across a large sample of participants (Creswell & Creswell, 2022). The target population of this study was the 5 million netizens estimated to be Nigeria's artificial intelligence online community, who have attained a minimum age of 18, and have interacted with the AI chatbots of government agencies in Nigeria. To ensure that only people who have interacted with the AI chatbots of government agencies in Nigeria participated in the study, a manipulation check question was provided in the questionnaire by the online participants recruiting panel Prolific and received compensation in lieu of data for their participation.

A sample size of 384 was determined at 95% confidence level, 0.05 confidence interval, and for the population size of 5 million estimated to be Nigeria's artificial intelligence online community (Paradigm Initiative, 2024). Using the Qualtrics questionnaire containing the manipulation check question, the professional survey panel recruiting company (Prolific) sent the online survey link to 384 individuals via email of users generated through the AI chatbots of government agencies in May 2024, and 268 valid responses were received within the same month. After screening the IP addresses of respondents to verify the sample source, the data was coded and analysed using SPSS 23.0.

Results

The online survey targeted 384 respondents who constituted the sample size of the study but only 268 responses were gotten. However, 74 responses were excluded because respondents filled the demographic data but did not answer any questions. This could possibly result from their non-interaction with a chatbot of any government organisation as a manipulation chatbot check question was provided to exclude such respondents. Also, 1 response was removed because the questionnaire was completed half way. Therefore, 193 responses were used in the data collection phase. To address the research questions raised, a series of Pearson correlation tests were conducted using SPSS. The results as presented and discussed below show that from the demographic perspective, the respondents ranged from 18 to 52 years old (mean age = 21.07, SD = 4.53). Gender distribution: 42.2% male, 57.8% female. Education levels: 44.4% SSCE, 11.1% diploma/NCE, 4.3% ND/HND/PGD, 25.6% bachelor's, 8.9% master's, 5.6% doctoral.

Table 1: Descriptive Statistics for Public Perception of AI Chatbots

Variable	**Items**	***M***	***SD***
Social Presence ***Cronbach's α=.92***	***Index***		
	There is a sense of personness.	2.33	1.24
	There is a sense of sociability.	2.47	1.20
	There is a sense of human contact.	2.08	1.16
	There is a sense of human warmth.	2.04	1.20
	There is a sense of human sensitivity.	2.13	1.17
	I can make sense of the attitudes of the virtual agent.	2.82	1.19
	There is a sense of human touch.	1.91	1.13
	The communication feels warm.	2.30	1.25

Research question one sought to assess public perception of the AI chatbots used as tools for public relations management by Nigerian government agencies. A Pearson's correlation was computed for the relationship between AI chatbot's social presence and perceived trust in the government agencies. Table 1 provides an analysis of the Social Presence variable, with a high internal consistency, as indicated by Cronbach's alpha (α = .92). This suggests that the items in the table effectively measure the same underlying construct of social presence. The mean (M) scores for each item fall within a range from 1.91 to 2.82. These relatively low to moderate means indicate that participants generally felt a limited sense of social presence and human-like qualities in the virtual agent.

Notwithstanding, the item "I can make sense of the attitudes of the virtual agent" has the highest mean (M = 2.82, SD = 1.19), suggesting this aspect of social presence (interpreting the virtual agent's attitudes) was slightly more perceived by users compared to other qualities. The item "There is a sense of human touch" has the lowest mean (M = 1.91, SD = 1.13), indicating that the users found the virtual agent to lack this quality the most among the listed items. Items like "There is a sense of sociability" (M = 2.47, SD = 1.20) and "There is a sense of personness" (M = 2.33, SD = 1.24) reflect moderate levels of perceived social presence, indicating that some users might feel a slight sense of connection or person-like quality in the interaction.

The standard deviation (SD) for each item is fairly consistent, ranging between 1.13 and 1.25. This suggests a moderate level of variation in responses, indicating that while some users may perceive the social presence more strongly, there is no extreme deviation in perceptions across participants. Overall, the data indicates that while the virtual agent conveys a moderate sense of sociability and personness, qualities like warmth, sensitivity, and human touch are perceived to a lesser extent. The high Cronbach's alpha reflects that these items are reliably capturing an overall sense of social presence, even though the individual scores are relatively low, suggesting room for improvement in fostering stronger perceptions of human-like connection in the virtual agents.

Table 2: Descriptive Statistics for Public Trust in AI Chatbots used as PR Tools

Variable	**Items**	***M***	***SD***
Trust ***Cronbach's α=.85***	***Index***		
	This AI chatbot treats people like me fairly and justly.	3.62	0.83
	The AI chatbot's important decision centers on public concerns.	3.25	0.83
	The AI chatbot can be relied on to keep its promises.	3.26	0.80
	The AI chatbot takes the opinions of people like me into account when making decisions.	3.29	0.92
	The AI chatbot service agent shows a sincere interest in helping online users in solving their problems.	3.10	1.23
	The AI chatbot has the ability to satisfactorily respond inquiries.	3.65	0.75
	I feel very confident about the skills of the AI chatbot of this agency.	3.51	0.81

The second research question sought to determine the level of public trust in the AI chatbots used as public relations tools by Nigerian government agencies to engage with the public. Result in table 2 provides an analysis of the Trust variable in relation to the AI chatbot, with a Cronbach's alpha ($\alpha = .85$) indicating good internal consistency across items, suggesting these items are reliably measuring the construct of trust. The item "The AI chatbot has the ability to satisfactorily respond to inquiries" has the highest mean score ($M = 3.65$, $SD = 0.75$), suggesting that users generally trust the chatbot's capability to respond accurately to their inquiries. This is followed closely by "This AI chatbot treats people like me fairly and justly" ($M = 3.62$, $SD = 0.83$) and "I feel very confident about the skills of the AI chatbot of this agency" ($M = 3.51$, $SD = 0.81$), indicating that users feel relatively positive about the chatbot's fairness and competence. Items such as "The AI chatbot takes the opinions of people like me into account when making decisions" ($M = 3.29$, $SD = 0.92$) and "The AI chatbot can be relied on to keep its promises" ($M = 3.26$, $SD = 0.80$) show moderate levels of perceived trust, suggesting that users may feel the chatbot is somewhat responsive to public concerns but with room for stronger assurance on its reliability and consideration of user opinions. Nevertheless, the item "The AI chatbot service agent shows a sincere interest in helping online users in solving their problems" ($M = 3.10$, $SD = 1.23$) received the lowest score among the items, suggesting that users perceive the chatbot's sincerity and personal interest in helping as relatively lower compared to other aspects of trust.

The standard deviations are mostly within a moderate range (0.75 to 1.23), with the item "The AI chatbot service agent shows a sincere interest in helping online users in solving their problems" having the highest variability ($SD = 1.23$). This suggests that perceptions regarding the chatbot's sincerity vary more widely among users, indicating mixed feelings on whether the chatbot genuinely seeks to help users. The mean scores, which mostly range between 3.10 and 3.65 on a scale of 1 to 5, indicate moderate to positive levels of trust in the AI chatbot, with particular strengths in its perceived fairness, competence, and response capability. However, there is some reservation among users regarding the chatbot's sincerity and its responsiveness to personal

opinions, showing potential areas for improvement in fostering a more personalized and empathetic user experience. The reliability of the items (Cronbach's α = .85) reflects that these dimensions are coherently measuring the overall trust in the AI chatbot, though there is room for enhancing aspects like sincerity and user-centered responsiveness.

Table 3: Descriptive Statistics for Factors Inducing Acceptance of the AI Chatbots

Variable	**Items**	***M***	***SD***
Satisfaction ***Cronbach's α=.89***	***Index***		
	I am happy with the agency's AI chatbot.	3.54	.75
	I am pleased with the relationship the AI chatbot has established with me.	3.40	.91
	I am happy in my interactions with the agency's AI chatbot.	3.47	.96
	I have faith that the AI chatbots will function as I expect them.	3.28	1.08
	I can rely on the AI chatbots to be working when I need them.	3.42	1.12
	I am pleased with the AI chatbots, they save my time	3.51	0.81

Research question three examined the factors influencing public acceptance and trust in AI chatbots used for public relations in Nigerian government agencies. Table 3 provides descriptive statistics for the Satisfaction variable, with a high Cronbach's alpha (α = .89), indicating that these items consistently measure satisfaction levels with the chatbots. The item with the highest mean score, "I am happy with the agency's AI chatbot" (M = 3.54, SD = 0.75), shows that users generally have a positive emotional response toward the chatbot. Similarly, the item "I am pleased with the AI chatbots, they save my time" (M = 3.51, SD = 0.81) highlights the importance users place on time-saving as a factor in their satisfaction. Other items such as "I am happy in my interactions with the agency's AI chatbot" (M = 3.47, SD = 0.96) and "I can rely on the AI chatbots to be working when I need them" (M = 3.42, SD = 1.12) reflect moderate satisfaction levels, with users generally finding the chatbot interactions fulfilling and reliable. However, the higher standard deviation in perceived reliability suggests that users have mixed experiences regarding the chatbot's consistent availability.

The item "I have faith that the AI chatbots will function as I expect them" (M = 3.28, SD = 1.08) has the lowest mean, suggesting that while users trust the chatbots to some extent, confidence in their performance could be strengthened. Overall, the satisfaction scores, mostly between 3.28 and 3.54, reflect a positive yet cautious acceptance of the chatbot, with users particularly valuing its efficiency and positive interaction quality. Some inconsistencies in perceived reliability, as shown by the variability in standard deviations (0.75 to 1.12), indicate areas for improvement in user trust. Overall, the moderate to high mean scores (mostly ranging from 3.28 to 3.54) indicate a positive yet cautious acceptance of the AI chatbot. Users are generally pleased, particularly with the time-saving benefits and the positive interactions, yet there is some variability in perceptions regarding the chatbot's reliability and alignment with user expectations.

Table 4: Descriptive Statistics for Impact of AI Chatbots on PR Management

Variable	**Items**	***M***	***SD***
Impact ***Cronbach's α=.88***	***Index***		
	The AI chatbots provide round-the-clock support.	3.20	1.18
	AI chatbots offer immediate replies, helping users find answers to common questions without waiting.	3.47	.96
	The AI chatbots provide assistance at any time, irrespective of different time zones.	3.42	1.12
	The agencies' AI chatbots enhances user experience and reduces frustration.	3.40	.91
	The AI chatbots resolve problems quickly, reducing overall wait times for human agents.	3.28	1.08
	AI chatbots help the agencies improve services, refine user interactions, and enhance their overall support strategy.	3.54	.75

Table 4 provides data in response to research question three which set out to examine the impact of AI chatbots on public relations management and service delivery in Nigerian government agencies in terms of user experience and operational efficiency, with a Cronbach's alpha of .88 indicating high internal consistency among items measuring this variable. The item in the table with the highest mean, "AI chatbots help the agencies improve services, refine user interactions, and enhance their overall support strategy" (M = 3.54, SD = 0.75), suggests that users perceive chatbots as effective in refining and improving the agencies' service strategies. This reflects positively on the chatbot's role in enhancing service quality and public relations management. Items like "AI chatbots offer immediate replies, helping users find answers to common questions without waiting" (M = 3.47, SD = 0.96) and "The AI chatbots provide assistance at any time, irrespective of different time zones" (M = 3.42, SD = 1.12) indicate that users appreciate the chatbot's availability and responsiveness, particularly when it comes to quick and round-the-clock service. The high scores on these items highlight that immediacy and accessibility are perceived as major benefits of AI chatbots in public relations settings.

This is collaborated by items such as "The agencies' AI chatbots enhance user experience and reduce frustration" (M = 3.40, SD = 0.91) and "The AI chatbots resolve problems quickly, reducing overall wait times for human agents" (M = 3.28, SD = 1.08) show moderate satisfaction. These scores reflect that while users find chatbots useful in improving user experience and alleviating some frustrations, there is some variation in perceptions regarding problem resolution speed and efficiency. The item "The AI chatbots provide round-the-clock support" (M = 3.20, SD = 1.18) has the lowest mean and highest standard deviation, indicating that while many users find round-the-clock availability valuable, some may experience inconsistencies with this feature. The standard deviations range from 0.75 to 1.18, with the highest variability seen in "round-the-clock support" (SD = 1.18), indicating mixed user experiences regarding continuous availability. However, the moderate to high mean scores (3.20 to 3.54) suggest that users generally view AI chatbots as beneficial to public relations management, especially for improving service quality,

offering instant responses, and enhancing user satisfaction. The chatbot's responsiveness and ability to reduce waiting times for human agents are particularly valued, though there may be occasional gaps in 24/7 support and problem resolution speed, indicating areas where the chatbots could be further optimized.

Discussion

Drawing upon literature in public relations, artificial intelligence, technology acceptance model, and trust theory, the current study assessed public perception and trust in AI chatbots utilized by Nigerian government agencies for public relations management. It examines participants' perception of the social presence of the AI chatbots, perceived trust in the agencies, satisfaction with the AI chatbots, and impact on public relations management and service delivery. Recent advancements in AI technology have allowed chatbots to engage in social and human-like conversations with users (Moore & Hübscher, 2021). Few empirical studies have investigated how chatbots' social presence, conversational tones, and interaction quality might advance organizational communication objectives. The study's findings revealed that user perception of the AI chatbots within the context of social presence (Men, Zhou & Sunny Tsai, 2022), conveys a moderate sense of sociability and personness.

The findings support organizational relationship management literature by confirming the relationships between the perceived capability of chatbot communications quality aspects such as social presence (human touch, personness, sensitivity, sociability, warmth), and conversational tone (treating, respecting, open dialogue, understanding, avoiding dominating conversations as a real communication partner). From the Technology Acceptance Model perspective, the degree to which users perceive the AI chatbots as possessing human-like qualities affects their perceived ease of use and usefulness, thereby influencing their acceptance (Lu, Fan & Zhou, 2016). When users feel that the chatbot's social presence is weak, their acceptance and trust in the system may be reduced, leading to lower user satisfaction and engagement. This aligns with the premise of Trust Theory, which emphasizes the importance of perceived competence, fairness, and empathy of automated systems (Youn & Jin, 2021). In the context of public relations management, the findings suggest that the chatbots are functional, and their emotional and human-like engagement fosters public trust and acceptance.

The findings of this study offer insight to public relations managers, shedding light on the impact of AI chatbots on public perception. The results provide a framework for designing and deploying more chatbot interaction strategies that enhances users' relationships with the government agencies. AI chatbots can improve client experience by establishing a longer committed relationship. Although recent research has provided practical insights for organizations and public relations professionals on AI chatboats as means of facilitating complex tasks and improving efficiency by reducing workloads, the findings from this study which specifically dwelt on government agencies which have for long suffered trust deficit, indicates that chatbots have the potentials to foster favourable perceptions of the government agencies and enhance their image and reputations. The findings are consistent with extant literature that chatbots enable social presence which lead to client satisfaction and trust by providing high-quality interactive and customizable communication experiences, which lead to increased acceptance and trust in communication efforts (Cheng & Jiang, 2022; Jiang, Cheng, Yang & Gao, 2022). Additionally, the research results align

with recent studies, which note the success of using AI-powered social bots in business conversations. In addition, social presence in chatbot design significantly enhances public perceptions of service and internal behaviour. The findings particularly align with the context of the Technology Acceptance Model (TAM) and Trust Theory, both of which are foundational in understanding public perception and trust (Zhou, Tsai & Men, 2024; Cheng & Jiang, 2020).

The implications of the study's findings for government agencies in Nigeria are clear - enhancing the chatbot's ability to convey warmth and human sensitivity. That is, the agencies should consider designing AI chatbots that simulate more empathetic interactions that are relevant to the Nigerian cultural environment in order to increase the perceived social presence, which in turn would boost user satisfaction, acceptance and trust, enhancing the overall effectiveness of AI-driven public relations efforts. This is because the extent of citizens' trust in government determines the success or failure of AI initiatives of the agencies. Trust is a subjective disposition that is considered a key influencer of behavioural intention to accept technology; as it is inversely proportional to risk.

Conclusion

This study sheds light on the public perception and trust in AI chatbots used by Nigerian government agencies for public relations management. While users generally perceive these chatbots positively for their efficiency and operational benefits, trust in the chatbots remains moderate due to variability in social presence and reliability. Although users recognize the chatbots' competence and fairness, qualities like warmth, empathy, and a consistent human-like presence are perceived as limited, affecting overall trust and acceptance. Against the backdrop of the theoretical framework, it is the conclusion of this study that AI chatbots' relational elements and consistent availability hold the key to enhanced trust in government agencies, public relations management, and bridging the gap between public expectations and service delivery by government agencies in Nigeria.

References

Adamu, U. A. (2024). The future of public relations in Nigeria: Adopting artificial intelligence (AI). *The Daily Reality*, October 26, 2024. https://dailyrealityng.com/2024/10/26/the-future-of-public-relations-in-nigeria-adopting-artificial-intelligence-ai/#google_vignette

Agba, M.S., Agba, G. E. M. & Obeten, A. W. (2023). Artificial intelligence and public management and governance in developed and developing market economies. Journal of *Public Administration, Policy and Governance Research (JPAPGR)*, 1(2):1-14.

Amadi, G. O., Chigbu, I. E & Dike, I. D (2023).Relationship management and work team effectiveness in media establishments in Rivers State. *International Journal of Business and Economics*, 8(5), 82-102.

Apriliani, R. (2022). Gaining public trust through digital media by government public relations of Sleman Yogyakarta. *Profetik: Jurnal Komunikasi*, 15(1), 34.

Araujo, T. (2018). Living up to the chatbot hype: The influence of anthropomorphic design cues and communicative agency framing on conversational agent and company perceptions. *Computers in Human Behavior*, 85, 183–189.

Cheng, X., Zhang, X., Cohen, J. & Mou, J. (2022). Human vs. AI: Understanding the impact of anthropomorphism on consumer response to chatbots from the perspective of trust and relationship norms. *Information Processing & Management*, 59(3), 102940.

Cheng, Y., & Jiang, H. (2020). How do AI-driven chatbots impact user experience? Examining gratifications, perceived privacy risk, satisfaction, loyalty, and continued use. *Journal of Broadcasting & Electronic Media*, *64*(4), 592-614.

Cheng, Y., & Jiang, H. (2022). Chatbots in crisis communication: Understanding chatbot usage in addressing public health crises. *Journal of Public Relations Research*, 34(2), 109-123.

Cheng, Y., & Jiang, H. (2022). Customer–brand relationship in the era of artificial intelligence: understanding the role of chatbot marketing efforts. *Journal of Product & Brand Management*, 31(2), 252-264.

Creswell, J. W. & Creswell, J. D. (2022). *Research design: Qualitative, quantitative, and mixed methods approaches*, sixth edition. Sage Publications, Inc.

Cummings, M. L. (2017). *Artificial intelligence and the future of public trust*. London: Routledge.

El Gharbaoui, O., El boukhari, H. & Salmi, A. (2024). Chatbots and citizen satisfaction: Examining the role of trust in AI-chatbots as a moderating variable. *TEM Journal*, 13(3), 1825-1836.

Feine, J., Gnewuch, U., Morana, S. & Maedche, A. (2019). A taxonomy of social cues for conversational agents. *International Journal of Human-Computer Studies*, 132, 138-161.

Følstad, A., & Brandtzaeg, P. B. (2020). Users' experiences with chatbots: findings from a questionnaire study. *Quality and User Experience*, 5(1), 1-14.

Følstad, A., & Skjuve, M. (2019). Chatbots for customer service: User experience and motivation. *Journal of Customer Service Research*, 2(1), 123-135.

Gefen, D., & Pavlou, P. A. (2018). Trust in AI and digital technologies: A review of empirical literature and applications in public administration. *Journal of Public Administration Research and Theory*, 28(1), 89-108.

Gibb, J. R. (1961). Defensive communication. *Journal of Communication*, 11(3), 141–148.

Goli, M., Sahu, A. K., Bag, S. & Dhamija, P. (2022). Users' acceptance of artificial intelligence-based chatbots: An empirical study. *International Journal of Technology and Human Interaction*, 19(1):1-18.

Jeong, J. Y. & Park, N. (2023). Examining the influence of artificial intelligence on public relations: Insights from the organization-situation-public communication (OSPC) model. *Asia-pacific Journal of Convergent Research Interchange.* 9(7), 485-495.

Jiang, H., Cheng, Y., Yang, J., & Gao, S. (2022). AI-powered chatbot communication with customers: Dialogic interactions, satisfaction, engagement, and customer behavior. *Computers in Human Behavior*, 134, 107329.

Jiang, Y., & Cheng, H. (2022). Understanding the role of trust in AI-driven chatbots: An empirical study in public relations. *Journal of Public Relations*, 28(4), 235–248.

Khan, S. & Digout, J. (2018). The corporate reputation reporting framework (CRRF). *Corporate Reputation Review*, 21, 22-36.

Kwadade-Cudjoe, F. (2024). Promoting strategic relationship management amongst stakeholders for organizational success: A case of tertiary (university) students in Ghana. *Global Journal of Human Resource Management*, 12(4), 1-30.

Ledingham, J. A. (2003). Explicating relationship management as a general theory of public relations. *Journal of Public Relations Research*, 15(2), 181–198.

Ledingham, J. A., & Bruning, S. D. (1998). Relationship management in public relations: Dimensions of an organization-public relationship. *Public Relations Review*, 24(1), 55-65.

Lu, B., Fan, W., & Zhou, M. (2016). Social presence, trust, and social commerce purchase intention: An empirical research. *Computers in Human Behavior*, 56, 225–237.

Men, L. R., Zhou, A., & Sunny Tsai, W. H. (2022). Harnessing the power of chatbot social conversation for organizational listening: The impact on perceived transparency and organization-public relationships. *Journal of Public Relations Research*, 34(1-2), 20-44.

Men, L. R., Zhou, S., & Sunny Tsai, J. (2022). Social presence and trust in AI chatbots: Implications for public relations practice. *Public Relations Journal*, 20(2), 48–67.

Moore, C., & Hübscher, R. (2021). Understanding public trust in AI: Insights from the field of public relations. *Communications of the ACM*, 64(2), 42-49.

Moore, S., & Hübscher, R. (2021). *Strategic communication and AI: Public relations with intelligent user interface*. Routledge.

Mundy, D. (2021). From relationship management to change empowerment: Shifting public relations theory to prioritize publics. *Journal of Public Relations Research*, 33(6), 504-525.

Natale, S. & Ballatore, A. (2020). Imagining the thinking machine: Technological myths and the rise of artificial intelligence. *Convergence*, 26(1), 3-18.

Nwosu, C. C., Obalum, D. C. & Ananti, M. O. (2024). Artificial intelligence in public service and governance in Nigeria. *Journal of Governance and Accountability Studies*, 4(2), 109-120.

Obun-Andy, M. & Banjo, A. O. (2021). Effective communication as a tool for good governance in Nigeria. *FEPI-JOPAS*, 3(2), 40-45.

Panda, G., Upadhyay, A. K. & Khandelwal, K. (2019). Artificial intelligence: A strategic disruption in public relations. *Journal of Creative Communications*, 14(3), 196-213.

Paradigm Initiative (2024). *Stakeholders mapping of artificial intelligence actors in Nigeria*. Paradigm Initiative.

Shareef, M. A., Kapoor, K. K., Mukerji, B., Dwivedi, R., & Dwivedi, Y. K. (2020). Group behavior in social media: Antecedents of initial trust formation. *Computers in Human Behavior*, *105*, 106225.

Söllner, M., Hoffmann, A., & Leimeister, J. M. (2016). Why different trust relationships matter for information systems users. *European Journal of Information Systems*, *25*(3), 274-287.

Sundar S. S., Lee E.-J. (2022). Rethinking communication in the era of artificial intelligence. *Human Communication Research*, 48(3), 379–385.

Sundar, S. S. (2020). Rise of machine agency: A framework for studying the psychology of human–AI interaction. *Journal of Computer-Mediated Communication*, 25(1), 74-88.

Tziakouri, M. (2024). The evolving role of artificial intelligence in the practice of public relations: Future directions for public relations professionals. *PR Academy,* https://pracademy.co.uk/insights/the-evolving-role-of-artificial-intelligence-in-the-practice-of-public-relations/

Weerasinghe, T., Johar, G. & Khatibi, A. (2022). Impact of AI applications in public sector services. *Neuroquantology*, 20(14), 1251-1263.

Youn, S., & Jin, S. A. (2021). Trust in automated public relations: A review of trust theory and its implications for AI communication. *Journal of Public Relations Research*, 33(2), 122–136.

Youn, S., & Jin, S. V. (2021). In AI we trust?" The effects of parasocial interaction and technopian versus luddite ideological views on chatbot-based customer relationship management in the emerging "feeling economy. *Computers in Human Behavior*, 119, 106721.

Zhang, Y., Følstad, A., & Bjørkli, C. (2023). Effectiveness of AI chatbots in public sector communication: A case study of citizen engagement. *Government Information Quarterly*, 40(2), 203-219.

Zhou, A., Tsai, W. H. S., & Men, L. R. (2024). Optimizing AI Social Chatbots for Relational Outcomes: The Effects of Profile Design, Communication Strategies, and Message Framing. *International Journal of Business Communication*, 23294884241229223.