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ARTIFICIAL INTELLIGENCE IN PUBLIC RELATIONS AND EFFECTS ON ACCOMMODATION ESTABLISHMENTS' MANAGEMENT PERFORMANCE

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Abstract

The study focused on the application of artificial intelligence (AI) in public relations and effect on accommodation establishments' services and management performance. This is motivated by the fact that accommodation establishments in Nigeria face several public relations challenges, including service automation, brand and reputation management, crisis communication, prompt handling of customer complaints, and competitive positioning. The specific objectives were to: evaluate the influence of AI service automation tools, sentiment analysis tool, chatbot visual assistant tool, and algorithm as public relations' tools for enhanced accommodation establishments' services and corporate performance. The Survey research design was adopted in this study. The simple random sampling technique and purposive sampling technique was used in the data collection. The data obtained for the study were analyzed with the Multiple Linear Regression with the aid of statistical package for social science (SPSS) version 21. Results obtained reveal that the application of AI automation tools, sentiment analysis, chatbot visual assistants, and algorithm as public relations tool did not significantly enhance accommodation establishments' services and management performance.

Keywords: Accommodation Establishments, Artificial Intelligence, Management Performance, Public Relations.

1.1 Introduction

In today's digital era, technology plays a crucial role in transforming the hospitality industry, particularly in accommodation establishments, by enhancing guest experiences and improving service delivery. From booking and check-in processes to addressing customer complaints and personalizing services, technological innovations have significantly reshaped how the hospitality sector operates (Santosh & Ansuman, 2020). A significant part of this transformation is driven by Artificial Intelligence (AI), a key tool that allows hotels and other hospitality businesses to deliver superior services and establish stronger connections with guests.

AI has emerged as a powerful component in marketing and public relations (PR), offering tools for automation, real-time communication, and sentiment analysis. According to Dunan and Mudjiyanto (2020), AI helps organizations analyze customer comments on social media and other platforms, using algorithms to derive meaningful insights for corporate communication and public sentiment monitoring. Similarly, Kareem and Ummu (2022) emphasize how AI has revolutionized media monitoring practices in PR, enabling businesses to track their brand perception across digital platforms. AI's core strength lies in its ability to simulate human intelligence using technologies like deep learning, genetic algorithms, and natural language processing (Hiathan, 2021).

Despite the wide recognition of PR among accommodation managers and staff, there remains a limited understanding of AI applications in PR. Public relations, guided by values such as honesty, loyalty, independence, and fairness (Poole & Mackworth, 2017), can be significantly enhanced through AI-powered tools. These tools enable businesses to measure campaign impacts, identify key influencers, and optimize media engagement. PR in this context is seen as a strategic effort to build and maintain mutual understanding between an organization and its public (Oyewunmi, 2016).

One of the most impactful AI applications in the hospitality sector is the use of chatbots. These AI-powered conversational agents can be integrated into hotel websites or mobile apps to manage customer interactions. Chatbots can assist guests with booking, modify reservations, recommend local attractions, and respond to inquiries and complaints (Al-Hyari, Al-Smadi & Weshah, 2023). They not only streamline operations but also ensure quick and effective customer service. However, despite these advancements, guest dissatisfaction remains a concern, highlighting the need for more effective complaint management systems powered by AI.

Sentiment analysis, also known as opinion mining or emotion AI, plays a vital role here. It utilizes natural language processing and computational linguistics to analyze customer feedback and emotional tone in reviews, surveys, and social media content (Jabeen, Al Zaidi & Al-Dhaheri, 2022). This tool helps businesses understand customer sentiments and adjust their services accordingly.

The integration of AI in hospitality signifies a paradigm shift, offering opportunities for enhanced customer satisfaction, operational efficiency, and revenue growth. Although AI's potential is evident—from driverless cars to customer interaction tools like chatbots—many hospitality businesses still lack structured mechanisms for implementing AI-driven PR and marketing strategies (Haithan, 2021). This study aims to explore the influence of AI in public relations and its effect on customer patronage in accommodation establishments, emphasizing the need for strategic adoption of AI technologies in the hospitality industry.

1.2 Statement of the Problem

With the growing adoption of technology in Nigeria, artificial intelligence (AI) has become increasingly relevant in the accommodation establishment sector. However, there is limited research on how AI enhances public relations activities and influences patronage in this industry. Despite AI's potential to personalize guest experiences and strengthen communication between establishments and their visitors, concerns remain about its possible depersonalizing

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effects and the erosion of trust. Accommodation establishments in Nigeria face several public relations challenges, including service automation, brand and reputation management, crisis communication, prompt handling of customer complaints, and competitive positioning. These challenges are compounded by the evolving expectations of tech-savvy customers in the hospitality landscape.

Many Nigerian accommodation establishments have yet to fully harness the potential of AI. For example, AI-powered chatbots that could provide immediate responses to customer inquiries—thereby enhancing satisfaction—are underutilized. Similarly, AI algorithms that could help analyze customer data, predict behavioral trends, optimize pricing strategies, and create targeted marketing campaigns have not been effectively implemented. Technology has proven to be a powerful tool for personalizing services, streamlining operations, and improving guest satisfaction, but its use in public relations in this sector remains minimal.

AI is transforming the accommodation industry and revolutionizing public relations practices through tools such as chatbots, sentiment analysis, and various AI-powered content creation and communication platforms like Midjourney, Brandwatch, Looka, Canva, Scribbl AI, Hints AI, Otter AI, and Beautiful AI. Despite this progress, many accommodation establishments lack a clear understanding of how these AI applications affect visitor experiences and perceptions. While customers increasingly demand higher service quality and better communication, many public relations and marketing professionals remain skeptical about AI's impact. As a result, its integration into publicity and strategic communication remains limited.

Moreover, the current research landscape on AI in public relations is fragmented, with few comprehensive studies addressing its impact on patronage within Nigeria's hospitality sector. There is a pressing need to investigate whether AI has effectively influenced customer engagement and increased patronage in accommodation establishments. This gap highlights the importance of the present study, which aims to examine the impact of artificial intelligence on public relations functions and its influence on customer patronage in Nigerian accommodation establishments. The findings will offer valuable insights into how AI can be better integrated into public relations strategies to drive improved service delivery, guest satisfaction, and business growth.

1.3 Objectives of the study

The specific objectives were:

i. To evaluate the influence of artificial intelligence as public relations service automation tools for enhanced patronage of accommodation establishments.
ii. To ascertain the effect of artificial intelligence sentiment analysis as public relations tool for gathering insights for enhanced patronage of accommodation establishments.
iii. To examine the effect of chatbot visual assistants as public relations tool for enhanced customer service deliveries by accommodation establishments.
iv. To determine the effect of artificial intelligence algorithm as public relation tool for enhanced corporate communication and reputation management by accommodation establishments.

1.4 Research questions

The following research questions guided the study:

i. To what extent does the application of AI automation tools in public relations enhance the patronage of accommodation establishments?
ii. To what extent does artificial intelligence sentiment analysis as public relation tool for gathering insights enhance the patronage of accommodation establishments?
iii. Does chatbot visual assistants as public relations tool enhance customer services deliveries by accommodation establishments?

iv. To what extent does artificial intelligence algorithm as public relations tool enhance corporate communication and reputation management by accommodation establishments?

1.5 Research hypotheses

The following null-hypotheses were tested in the study:

Ho_1: The application of AI automation tools in public relations does not significantly enhance the patronage of accommodation establishments.

Ho_2: Artificial intelligence sentiment analysis as public relation tool for gathering insights does not enhance the patronage of accommodation establishments.

Ho_3: Chatbot visual assistants as public relations tool does not significantly enhance customer services deliveries by accommodation establishments.

Ho_4: Artificial intelligence algorithm as public relations tool does not significantly enhance corporate communication and reputation management by accommodation establishments.

1.6 Scope of the study

This study on application of artificial intelligence in public relations and enhanced patronage of accommodation establishments with independent variables of public relations AI automate tools, public relations AI sentiment analysis, public relations AI chatbots, and public relations AI algorithm tools, with a view to determining their effects on the dependent variable, enhanced patronage of accommodation. Geographically, the study is limited to Calabar, Cross River State in Nigeria. The sampling scope include the management, staff and visitors to accommodation establishments in the area.

1.7 Literature Review and Theoretical Framework

This study is anchored on two relevant theories: Marketing Automation Theory and Technological Determinism Theory respectively.

1.7.1 Marketing Automation Theory (John D.C. 2001),

Marketing automation theory was first introduced by John D.C. in his presentation at the 5th invitational Choice Symposium UC Berkeley 2001 (Heimbach, Kostyra, & Hinz, 2015). The theory refers to the strategic use of technology to streamline and automate various business processes. It involves using software platforms and tools to automate repetitive tasks, manage customer data, track customer interactions, and deliver personalized marketing messages at scale. Marketing automation theory states that these automated platforms allows marketers to scale lead management and marketing activities such as coordinating and managing marketing campaigns, both online and offline (Poole, & Mackworth, 2017).

Marketing automation theory is relevant in the study of modern practice of public relations. Marketing automation theory assumes that segmenting and targeting specific audience groups based on their preferences, behaviors, and demographics have positive impact on an organizations profit margin (Poole & Mackworth, 2017). Marketing automation theory assumes that marketing automation can send targeted and personalized relations messages to different customer segments, ensuring that the right message reaches the right audience. Marketing automation theory establishes that organizations can enhance the customer experience by providing consistent messaging and a cohesive brand image across multiple channels, including press releases, social media, and email campaigns. Marketing automation theory assumes that marketing automation platforms capture valuable customer data, including engagement metrics,

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preferences, and interactions. By integrating public relations efforts with marketing automation, organizations can gain deeper insights into customer behavior and preferences (Faycal et al., 2022). Over time, marketing automation theory has continuously evolved, incorporating advancements in artificial intelligence (AI), machine learning (ML), and data analytics. These technologies enable marketers to leverage vast amounts of data, predict customer behavior, and deliver hyper-personalized experiences tailored to individual preferences (Montgomery & Smith, 2009).

Marketing automation theory has gained significant popularity and adoption in recent years; it is not without its criticisms. Some of the key criticisms are that marketing automation can result in a loss of personal touch and human connection. By relying heavily on automated processes, there is a risk of delivering generic or irrelevant messages to customers, which can harm brand perception and customer relationships. More so, marketing automation often relies on pre-set templates and standardized workflows, which can limit the creative expression and innovative thinking that is essential in marketing and public relations. This can result in campaigns that feel formulaic and fail to resonate with the target audience. While automation can streamline marketing processes and increase efficiency, there is a risk of over-automating tasks that require human judgment and intuition. Important decisions, such as adapting to changing market trends or addressing customer feedback, may be overlooked or improperly executed if solely reliant on automated systems.

Marketing automation theory is relevant to this study as it reveals that integrating marketing automation theory with public relations can help organizations deliver targeted messages to enhance the customer experience, gain valuable insights, streamline processes, and measure the impact of public relations initiatives. This integration can effectively support organizations in building stronger brand awareness, reputation, and relationships with their target audience.

1.7.2 Technological Determinism Theory (Marshall Mc-Luhan in 1962

The term technological determinism theory is believed to have originated from Marshall Mc-Luhan in 1962 but was further modified by Thorsten Veblem an American sociologist and social economist (Heder, 2021). Technological determinism is a theory that suggests that technology is the primary driver shaping society and human behavior (Griffin, 2000). While there are no rigid assumptions as such, there are several key ideas or principles that can be associated with technological determinism theory. Technological determinism theory assumes that technology develops independently of society and has its own internal logic and direction

According to West and Turner (2000) technological determinism theory assumes that technological progress is a natural and unstoppable force, leading to predetermined societal changes. According to this view, once a technology is invented, it will inevitably find widespread adoption and transform societies, regardless of social acceptance or resistance. More so, technological determinism theory assumption suggests that once a significant technological innovation emerges, it quickly spreads throughout society, leading to uniform effects. It emphasizes the idea that technology has the power to shape and homogenize cultures and societies. Similarly, technological determinism theory assumes that technology has a direct and powerful impact on shaping human behavior, cultural values, social structures, and economic systems. It implies that changes in technology lead to corresponding changes in society, often overshadowing other factors influencing social change. Technological determinism theory recognizes that technology possesses its own agency and influences human actions and decisions. It emphasizes that technology can have unintended consequences and reshape societal norms, power dynamics, and individual behaviors, sometimes even leading to unintended negative outcomes.

One of the key criticisms of technological determinism theory is its oversimplification of the relationship between technology and society. Critics argue that it fails to recognize the complex interplay of various social, cultural, economic, and political factors that influence the adoption and impact of technology. According to Griffin (2000), technology does not have a predetermined or autonomous influence on society; instead, it is shaped and influenced by social dynamics. Another criticism is the deterministic view of technology as the main driver of societal change. Critics argue that technological determinism theory overlooks the agency of individuals and social groups in determining how technology is developed, implemented, and used. They argue that social, economic, and political factors play significant roles in shaping technological innovation and adoption.

Technological determinism theory is relevant to this study on the grounds that the application of artificial intelligence in public relations practices will not only enhance accommodation establishments' communication relationships with their customers, but will also promote social, economic and cultural homogeneity, integration and cooperation amongst the hosts and their visitors from around the world, thereby, boosting organizational corporate performance.

1.7.3 Conceptual Framework

1.7.3.1 Artificial Intelligence and Public Relations

According to Jordan and Mohammad (2023) Artificial intelligence (AI) has greatly influenced the field of public relations (PR) by revolutionizing how public relations professionals gather insights, analyze data, enhance communication, and automate certain tasks. According to Haithan, (2021), some of the key ways artificial intelligence is used in public relations include: Media monitoring and analysis in which AI powered tools can monitor millions of news articles, blogs, social media posts, and other online contents, helping public relations professionals keep track of brand mentions and industry trends. Another is Automated reporting by AI which can automate public relations process of generating reports, saving public relation professionals time and efforts.

Added to this is Chatbots and virtual assistants which can handle routine customer inquiries, providing instant responses and freeing up public relation professionals to focus on more complex tasks. On the area of reputation management, AI algorithms can be used to monitor social media platforms, online forums, and review sites, scanning for mentions of brands or key individuals. These information come handy in the effective management of organizational reputations. Yet another area AI can boost public relations practice is in content creation, where AI tools can assist in generating content ideas, improving writing quality, and automating some contents. On the hand, Natural Language Processing (NLP) algorithms can analyze data, identify patterns, and generate data-driven content suggestions. While Predictive analytics AI can analyze historical data to predict future public relationS outcomes and trends.

However, it is important to note that while artificial intelligence offers significant benefits, human expertise and creativity remain crucial in public relations practice. Nevertheless, Artificial intelligence tools are meant to enhance and support public relation efforts, allowing professionals to focus on strategic thinking, relationship building, and crafting compelling narratives.

1.7.3.2 Public relations concept

Today's communication which has been moved to the digital level has affected public relations practices, while social media has been turned into a public relations tool and method (Pijar, 2021). Public relation is a 'relationship' business built around creativity, networking, and the ability to communicate effectively through compelling contents. Factors like accelerated business and digitization of the media have changed PR from a business relationship to a terabyte business" (Ibrahımzade, 2017). Public relations achieves its primary responsibility by

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creating multiple communication materials which may include brochures, videotapes, newsletters, and press releases.

Artificial intelligence in public relations practice is a new normal in the practice of public relations. The situation and changes in the company also encourage the current role of public relations. The industrial revolution also had an impact on the public relations profession, so that it could no longer carry out public relations activities and programmes as usual. In line with the industrial revolution, there has been an evolution in the role, function, and task of public relations, as following (Araujo, 2018). According to Roy (2020) the impact of artificial intelligence in public relations can provide a positive value. For example, in a machine learning algorithm that is equipped with valid data, public relation can manage multiple promotions through social media, also allowing engagement between brands and audiences on social media to be increased. Artificial intelligence technology can provide input on sentiment from media coverage; to then send out alerts when negative news arises, so public relation professionals can respond more quickly.

Major artificial intelligence applications, software and links used in public relations and in marketing communication, according to Marfousi (2023) include: Chat GPT, a Chat-bot tool from open artificial intelligence. Midjourney, a text-to-image tool managed through the platform discord where a customer can give it a detailed prompt, and it will give the customer something resembling what the customer asked for. Sentiments analysis also known as opinion mining or emotion artificial intelligence is the use of natural language progressing text analysis, computational linguistics and biometrics to systematically identify, extract, quantify and study affective states and subjective information. Brandwatch is a social listening artificial intelligence tool that uses the power of artificial intelligence to track, analyze and monitor not only text mentioned of a brand but also image of the organization logo and products. Cleanup picture uses the power of AI to analyse and retouch photos. It helps to remove unwanted elements from a product photo, text and so much more. Looka is another tool that uses the power of artificial intelligence to create and customize brand identity. Added to all these, Propel PRM uses the power of artificial intelligence to manage media contacts, monitor coverage and track analytics. While the Beautiful.ai application uses the effect of artificial intelligence to create beautiful and useful presentations, infographics and many more.

1.7.7.3 Concept of Accommodation Establishments

An accommodation establishment is an establishment that provides overnight lodging for holiday spenders and other travelers in room or some other types of shelter. According to Ezeani (2016), accommodation establishment refers to any facility that regularly or occasionally provides overnight accommodation to tourists that is chargeable or free. A hotel is an establishment that provides paid accommodation services. Hotels offer basic accommodation in the past but nowadays, they mostly provide rooms with modern facilities. In Nigeria, hotels are categorized in stars; one-star hotels, two-star hotels, three-star hotels, four-star hotels and five-star hotels. Many 3, 4 and 5 star hotels offer conference facilities. Globally, the basic kinds of hotels are commercial hotels for business travelers and people on short trip.

Accommodation establishments also refer to a wide range of establishments or facilities that provide temporary lodging or housing for individuals, families, or groups (Cooper, Fletcher, Fyall, Gilbert & Wanhill 2008).. These establishments are designed to offer shelter, comfort, and amenities to meet the needs of guests during their stay. Some common types of accommodation establishments; hotels, motels, resorts, bed and breakfast (B&B), guest houses, hostels, vacation rentals and so on. The numerous types of accommodation establishments include:

i. **Hotels:** Hotels are establishments that offer a range of services and amenities, including guest rooms, restaurants, bars, meeting rooms, and recreational facilities. They can vary in size and level of luxury, ranging from budget hotels to high-end luxury hotels.
ii. **Motels:** are typically located along highways or in areas that cater to travelers. They often offer convenient parking and easy access to rooms, making them popular for road trips and short stays. Motels generally provide basic amenities and services at affordable rates.
iii. **Resorts:** are typically larger establishments that offer extensive amenities and activities for guests' leisure and relaxation. They often feature recreational facilities such as swimming pools, spas, golf courses, and entertainment options. Resorts are commonly found in vacation destinations and cater to both individuals and families.
iv. **Bed and Breakfast (B&B):** B&B establishments are smaller accommodations, typically located in residential areas. They offer a more intimate and homely experience, with rooms often situated within a private home. B&Bs typically provide breakfast for guests, and some may offer additional meals or services.
v. **Guesthouses:** Guesthouses are similar to B&Bs and typically offer a few rooms within a residential property. They may provide additional services such as meals, laundry facilities, and communal areas for guests. Guesthouses can range from simple to more luxurious accommodations.
vi. **Hostels:** are budget-friendly accommodations that cater to travelers, particularly backpackers, students, and individuals looking for affordable lodging options. Hostels usually offer dormitory-style rooms with shared facilities such as bathrooms and common areas.
vii. **Vacation Rentals:** Vacation rentals include privately owned apartments, houses, or villas that are rented out to travelers on a short-term basis. Platforms like Airbnb have popularized this type of accommodation, offering a variety of options in terms of size, location, and amenities.

These are just some of the most common types of accommodation establishments, each catering to different preferences, budgets, and travel purposes of guests. It's important to consider individual needs, location, amenities, and reviews when choosing an accommodation establishment for a comfortable and enjoyable stay.

1.8 Research methodology and design

The Survey research design was adopted in this study. The study was carried out in Calabar metropolis, the capital of Cross River State, in the South-South part of Nigeria. It is dominant civil service and commercial economy with many hotels, and restaurants, etc. Calabar is known for its hospitable nature and tourist attraction, hence, it receives a high inflow of tourists and visitors. This reflects on the patronage of accommodation services. This is boosted by the highly patronized annual Calabar Christmas Carnival that lasts for 32 days and climaxes on the first (1^{st}) of January the next year.

The population of the study comprised of staff of accommodation establishments (hotels, lodges, guests houses, motels, resorts inns) in Calabar Metropolis. According to Cross River State Tourism Bureau 2019 report, it was reported that the number of accommodation establishments in Calabar Metropolis is 242 with Calabar Municipal LGA 184 and Calabar South LGA 58. The guests/visitors inflow as at January to December 2019 was 6,231 (Cross River State Tourism Bureau, 2020), while the population or number of staff of these accommodation establishments is unknown.

The simple random sampling technique and purposive sampling technique was used in the study. The researcher randomly selected 15 accommodation establishments. The bases for

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the selection of these hotels is based on the hotel classification standard, the hotel size, location, target markets, levels of services, facilities provided, number of rooms, ownership, affiliation and so on. 10 of these accommodation establishments were selected from Calabar Municipal and 5 from Calabar South. A sample size of 200 was purposively determined for the study.

The instrumentation for the data collection was copies of structured questionnaire, designed in the form of a five point likert scale. Part 'A' contained questions bordering on the respondents demographic information, while the part 'B' contained questions relating to the independents variables of the study (artificial intelligence as public relations service automation tools, artificial intelligence sentiment analysis as public relations service automation tools, chatbot visual artificial intelligence as public relations tools, artificial intelligence algorithm as public relations service automation tools), and the dependent variable (patronage of accommodation establishment).

The data obtained for the study were analyzed with the Multiple Linear Regression with the aid of statistical package for social science (SPSS) version 21. The statistical model was:

$Y = a + bx$
A = the y intercept
B = the slope of the line
Y = predicted value of y
X = the independent variable or the predictor

1.9 Data presentation and analysis

The questionnaire was distributed to two hundred respondents (200) in total, however only one hundred and ninety (197) copies were actually collected, giving a response rate of 98.5%. The demographic characteristics of the respondents reveal that 123 respondents (68.5 percent) were female, while male were 61 (31.5 percent). The respondents were 30 years or above. On the respondents' educational qualifications, 8 of the respondents (4.1 percent) were holders of FSLC, 21 of the respondents (10.7 percent) were holders of SSCE certificate, 42 of the respondents (21.3 percent) were holders of OND/NCE/ND certificate, 80 of the respondents (40.6 percent) were holders of B.Sc./HND certificate and 46 of the respondents (23.4 percent) were holders of PGD/M.Sc./Ph.D certificate. For the duration of service of the respondents 121 of them (61.4 percent) had worked in their establishments between 1-5 years, and 76 of the respondents (38.6 percent) had worked in their establishments for 6 years or above.

Table 1 presents the descriptive statistics on the responses on artificial intelligence in public relations and patronage of accommodation establishments. The report covers data obtained from 197 respondents. Constructs designed to measure artificial intelligence can be used for service automation; you use artificial intelligence to communicate with customers, the artificial intelligence deployed by your establishment respond to customers promptly and the use of artificial intelligence as public relations tool has increased visitor's patronage in your establishment. The mean of the variable was above 2.5 which indicate a positive response to the questions. The standard deviation which is below 1 show that up to 4.80 percent of the spread of the values are clustered around the mean. The variances indicate the spread of data is adequate.

Four constructs were designed as measures of sentiments analysis artificial intelligence. You have sentiment analysis software in your establishment, sentiments analysis artificial intelligence sends messages of visitors opinion of your service quality, visitors use you sentiments analysis platform to express their displeasure and sentiment analysis software is faster for receiving an resolving visitors complaints. The mean of the variable was above 2.5 which indicates a positive response to the questions. The standard deviation which is below 1 shows that up to 4.62 percent of the spread of the values are clustered around the mean. The variances indicate the spread of data is adequate.

Chatbots was measured using these constructs; you have chatbot in your establishment, sentiments analysis artificial intelligence sends messages of visitors opinion of your service quality, visitors use you sentiments analysis platform to express their displeasure and sentiment analysis software is faster for receiving an resolving visitors complaints. The mean of all the constructs were above 2.5 which indicates a positive response to the questions. The standard deviation which is below 1 show that up to 4.7 percent of the spread of the values are clustered around the mean. The variances indicate the spread of data is adequate.

Artificial intelligence algorithm as public relations service automation tool was measured by; artificial intelligence is used to gather customer transactional information, the artificial intelligence in your establishment is programmed to communicate with visitors and customers**,** you use artificial intelligence to manage your establishment's reputation, artificial intelligence as public relations tool increase the patronage value in your establishment. The mean of the variable was above 2.5 which indicate a positive response to the questions. The standard deviation which is below 1 show that up to 4.80 percent of the spread of the values are clustered around the mean. The variances indicate the spread of data is adequate.

Patronage of accommodation establishments was measured by; the use of artificial intelligence as public relations tools enhances visitors repeat visit, the use of artificial intelligence sentiment analysis as public relations tool enhances the gathering of customers insights and visitors increased spending, the use of chatbot visual assistant as public relations tool enhances customer service deliveries, artificial intelligence algorithm as public relations tool enhances corporate communication and reputation management of accommodation establishments. The mean of all the constructs were above 2.5 which indicate a positive response to the questions. The standard deviation which is below 1 show that up to 4.54 percent of the spread of the values are clustered around the mean. The variances indicate the spread of data is adequate.

Table 1
Descriptive statistics of artificial intelligence in public relations and patronage of accommodation establishment

Variables	N	Mean	Std. Deviation	Variance
AI as PR service automation tool	197	15.1	4.80	23.0
AI sentiment analysis tool	197	15.2	4.77	22.8
Chatbots visual assistant	197	15.5	4.62	23.0
AI algorithm	197	15.4	4.80	21.3
Patronage of accommodation establishments	197	15.5	4.54	20.3

Source: SPSS Output.

1.9.2 Test of hypotheses

The following research hypotheses, expressed in their null forms, were tested in the study:

Ho_1: The application of AI automation tools in public relations does not significantly enhance the patronage of accommodation establishments.

Ho_2: Artificial intelligence sentiment analysis as public relation tool for gathering insights does not enhance the patronage of accommodation establishments.

Ho_3: Chatbot visual assistants as public relations tool does not significantly enhance customer services deliveries by accommodation establishments.

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Ho_4: Artificial intelligence algorithm as public relations tool does not significantly enhance corporate communication and reputation management by accommodation establishments.

Independent variables: (AI as PR service automation tool, AI sentiments analysis as PR tool, chatbot visual assistants as PR tool, AI algorithm as PR tool). Dependent variable: (patronage of accommodation establishment "gathering of visitors insights, customer service deliveries, corporate communication/reputation management),
Test statistics: Multiple Linear Regression

Table 2
Multiple regression result of influence of artificial intelligence in public relations on patronage of accommodation establishments in Calabar

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.515[a]	.265	.250	1.11032

a. Predictors: (Constant) (AI as PR service automation tool, AI sentiments analysis as PR tool, chatbot visual assistants as PR tool, AI algorithm as PR tool)
b. Dependent Variable: Patronage of accommodation establishments
Source: SPSS output.

Table 3
Analysis of variance (ANOVA) on artificial intelligence in public relations on patronage of accommodation establishments in Calabar

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	69.688	4	17.422	43.923	.000[b]
	Residual	109.079	275	.397		
	Total	178.767	279			

a. Dependent Variable: Patronage of accommodation establishments
b. Predictors: (Constant), (AI as PR service automation tool, AI sentiments analysis as PR tool, chatbot visual assistants as PR tool, AI algorithm as PR tool)
Source: SPSS output.

Table 4
Coefficients for the influence of artificial intelligence in public relations on patronage of accommodation establishments in Calabar

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	1.914	.210		9.111	.000
	AI as PR service automation tool	.219	.098	.213	2.233	.027
	AI sentiments analysis as PR tool	.131	.160	.126	.819	.414
	Chatbot visual assistants as PR tool	-.308	.154	-.293	-2.003	.047
	AI algorithm as PR tool	.490	.145	.476	3.385	.001

a. Dependent Variable: Patronage of accommodation establishments
Source: SPSS output.

The multiple regression analysis was conducted to test the four hypotheses. The analysis of the data revealed that artificial intelligence in public relations (AI as PR service automation tool, AI sentiments analysis as PR tool, Chatbot visual assistants as PR tool, AI algorithm as PR tool) does not significantly influence visitor's patronage (gathering visitors insights, customer service deliveries, enhances corporate communication/reputation management) of accommodations establishments in Calabar. Hence, the leading factor to this outcome is as a result of the non-availability of artificial intelligence in these accommodation establishments. This connotes that holding all explanatory variables constant; there will be an increase in the patronage of accommodation establishment by 1.1103. The R value (51.5 per cent) in table 4 explains the correlation between the dependent and the independent variables. The R-squared indicates that 25.0% of the total variation of the dependent variable can be explained by the independent variables and 51.5% of the total variation is left unexplained by the independent variables. This could be attributed to other variables that have not been captured by the model. The adjusted R-square entails that 25.0% of the dependent variable is accounted for by the independent variables. The overall P-value of the model as seen in table 5 shows that there is a significant effect of the independent variables on the dependent variables as the P-value (.000) is less than .05. Furthermore, the last table indicates the individual significant effect of the independent variables on the dependent variable. The result reports that all the independent variables do not have significant influence on the dependent variable. Their probability values and t-statistics values affirms this. The results of the multiple regression analysis demand that we accept all the null hypotheses and reject the alternatives.

1.10 Discussion of findings

The result of hypothesis one (H_{O1}) revealed that artificial intelligence as public relations service automation tool did not significantly enhance the patronage of accommodation establishments in Calabar, Cross River State. From the regression result, it is seen that the use of artificial intelligence as public relations service automation tool did not significantly contribute to enhanced patronage of accommodation establishments in the area (Beta= 0.213 and $p < 0.05$). The findings contradicts the outcome of a study conducted by Bodinga et al. (2022) which used machine learning techniques to conduct a study on customer engagement analysis with hotels in Sokoto, Nigeria. The finding provides an overview of how data mining is used to create predictions in hotel services. Orange data mining software was utilized to evaluate primary data sources. Results showed that deploying artificial intelligence for carrying out public relations activities as well as in service delivery increases customers patronage of hotel services.

The result from the test of the hypothesis two (H_{O2}) reported that artificial intelligence sentiment analysis as public relations tool for gathering insights did not have significant influence on patronage of accommodation establishments in Calabar, Cross River State (Beta= 0.126 and $p < 0.05$). The findings contradicts the finding of Al-Hyari, Al-Smadi and Weshah (2023) who stated that, sentiment analysis is the process of analyzing digital text to determine if the emotional tone of the message is positive, negative, or neutral. Today, accommodation establishments have large volumes of texts and data like emails, customer support chat transcripts, social media comments, and reviews. Sentiment analysis tools can scan these texts to automatically determine the authors' attitude towards topics. Accommodation establishments use the insights from sentiment analysis to improve customer service and increase brand reputation. Sentiment analysis is an application of natural language processing (NLP) technologies that train computer software to understand texts in ways similar to humans.

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The result from the test of the hypothesis three (H_{O3}) revealed that chatbots visual assistants as public relations tool did not have significant effect to enhance customer services deliveries by accommodation establishments in Calabar, Cross River State, again due to the non-usage of this vital business tool by many of the firms. From the regression result, it is seen that chatbots visual assistants as public relations tool did not make any contribution (Beta= -0.293 and $p < 0.05$). The results further revealed that chatbots visual assistants as public relations tool did not enhance customer services deliveries by the accommodation establishments in Calabar, Cross River State. This finding contradicts that of Nguyen and Nan (2022) on the impact of AI chatbot on long-term relationships between customers and hotels. The study critically focused on artificial intelligence AI Chatbot (anonymity, convenience, and problem-solving) on quality communication and long-term relationships between customers and hotels, and employed correlation analysis and structural equation modeling (SEM) to analyze the data collected in the structured questionnaire survey in Vietnam. This divergence of this result from previous studies is, however, attributable to the fact that most of the accommodation establishments in the study area are yet to start using AI in their business operations Nguyen and Nan (2022) findings provide an enhanced understanding of how AI Chatbot influences customer experience hotels.

The result from the test of the hypothesis four (H_{O4}) reported that artificial intelligence algorithm as public relations tools for enhancing corporate communication did not have significant effect on reputation management by accommodation establishments in Calabar, Cross River State. This result could be attributed to the non-application of AI in the operations of those accommodation establishments in the study area. From the regression result, it is seen that artificial intelligence algorithm as public relations tools for enhancing corporate communication does not make any contribution (Beta= 0.476 and $p < 0.05$). The results further revealed that, artificial intelligence algorithm as public relations tools for enhancing corporate communication did not have significant effect on reputation management by accommodation establishments in Calabar, Cross River State. The findings contradict that of Elegunde and Osagie (2020) investigated the use of artificial intelligence and employee performance in the Nigerian hotel sector, which explored AI's ability to supplement work procedures. The study found out that artificial intelligence algorithm services as a very useful public relations strategy for accessing customers information and a strategy to acquire information of customers preferences for hotel services. Thus, the study concluded that artificial intelligence and algorithm machine-assisted tasks facilitated operations in Nigerian hotel industry.

1.11 Conclusion

Artificial intelligence in public relations practice is a new normal in the practice of public relations. The situation and changes in the accommodation establishments also encourage the current role of public relations to adopt artificial intelligence in carrying out the practice. Hence, artificial intelligence in public relations can provide a positive value. Despite, the positive influence of the adoption of artificial intelligence in public relations on patronage of accommodation establishments all over the world, this study carried out in Calabar on the influence of artificial intelligence in public relations on patronage of accommodation establishments in Clabar revealed that Artificial intelligence as public relations service automation tool does not significantly enhance the patronage of accommodation establishments in Calabar, Cross River State. Artificial intelligence sentiment analysis as public relations tool for gathering insights does not have significant influence on patronage of accommodation establishments in Calabar, Cross River State. Chatbots visual assistants as public relations tool does not have significant effect to enhance customer services deliveries by accommodation establishments in Calabar, Cross River State. Artificial intelligence algorithm as public relations tools for enhancing corporate communication does not have significant effect on reputation management by accommodation establishments in Calabar, Cross River State.

1.12 Recommendations

Based on the findings from the research, the following recommendations are made:

1. To boost their corporate performance, accommodation establishments should adopt the use of artificial intelligence in carrying out their public relations activities.
2. Chatbot should be deployed as a 21st century technology for enhanced interactions with visitors.
3. Accommodation establishments should procure sentiment analysis algorithm for the collection and analysis of visitors' complaints, for improved managerial and corporate performance.
4. Staff and visitors to accommodation establishments should be informed of the need and usage of artificial intelligence in enhancing their communications.

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