

Adoption of Artificial Intelligence in Nigerian Hotels: A Pathway to Enhanced Customer Experience and Operational Efficiency

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ABSTRACT: The adoption of Artificial Intelligence (AI) in the hotel industry in Nigeria has experienced dramatic growth over the years in different areas, including technology. The integration of technology has totally changed customer experience and operational efficiency. The application of AI in the hotel industry comes with benefits and challenges, with emphasis on both customer experience and operational efficiency. The roles of AI in the hotel industry includes enhanced customer service, operational efficiency, personal experience, revenue management, and security and safety. Applications of AI in the hotel industry includes chatbots and virtual assistant, smart rooms and personalized experience, and automated check-ins and check-outs. The importance of customer experience impacts the hotels reputation, profitability and competitive standing, and factors influencing it includes service quality, technology and convenience, cleanliness and comfort, personalization, and security and safety. Operational key indicators are cost management, staff productivity, guest satisfaction score, automation and technology utilization, supply chain and inventory management, and energy and resource efficiency. The challenges of operational efficiency in Nigerian hotels includes high operational cost, skills gap and work challenges, limited adoption of technology, inconsistent power supply, and supply chain disruption. The factors impacting adoption of AI are cost, infrastructure and technology readiness, regulatory and data privacy concerns, technical expertise of skills gaps, customer acceptance and trust. The benefits of AI integration include competitive advantage and innovation, data driven decision making, enhanced customer service and personalization, enhanced security and safety, improved revenue management, and increased operational efficiency. A qualitative methodology approach in form of systematic review has been used. Findings and results clearly shows there are only a handful of hotels using AI powered solutions, but there is high potential for improvement in the industry.

KEYWORDS: Customer Experience, Operational Efficiency, Virtual Assistants, Facial Recognition, Service Quality, Security and Safety, Supply Chain

1.0 INTRODUCTION

The Nigerian hospitality industry has witnessed remarkable growth over the years, fueled by increasing domestic and international travel, rapid urbanization, and economic expansion. Key cities such as Lagos, Abuja, and Port Harcourt have seen a proliferation of hotels, ranging from budget-friendly lodgings to high-end luxury establishments (Majebi, 2024). This sector plays a crucial role in the nation's economy by generating employment and boosting tourism. However, Nigerian hotels continue to grapple with challenges related to service efficiency, high operational costs, and maintaining service quality, making the adoption of innovative solutions essential for sustaining competitiveness (Akintade et al, 2025)

The integration of technology has revolutionized service delivery in the hospitality sector, significantly enhancing both customer experience and operational efficiency. Many hotels in Nigeria have embraced digital innovations such as online booking platforms, mobile applications, and automated check-in/check-out systems to streamline processes (Ibrahim et al, 2024). However, the growing global adoption of Artificial Intelligence (AI) is driving a more profound transformation in the industry. AI-powered solutions, including chatbots for customer support, smart room automation, predictive analytics for demand forecasting, and facial recognition for security, are reshaping the hotel experience by making services more efficient and personalized (Adaobi et al, 2024)

With increasing competition and evolving customer expectations, the adoption of AI in Nigerian hotels is becoming increasingly relevant. AI not only enhances operational efficiency by minimizing human errors and optimizing resources but also improves

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guest experiences through personalized interactions (Kekeocha and Ejiogu, 2025). Despite its advantages, AI implementation in Nigeria remains in its early stages, hindered by challenges such as high costs, inadequate infrastructure, and a shortage of skilled professionals. This study examines the current state of AI adoption in Nigerian hotels, its impact on customer experience and operational performance, and the obstacles preventing widespread implementation (Adim and Mezeh, 2020)

2.0 LITERATURE REVIEW

2.1 Overview and Concept of AI in Nigerian Hotels

In the hospitality industry, Artificial Intelligence (AI) involves the use of computer systems to execute tasks that traditionally rely on human intelligence, such as learning, problem-solving, and decision-making (Osadare et al, 2024). The main role of AI in the hospitality industry is to systems capable of analyzing data, learning from it, and utilizing that knowledge to automate processes and improve experiences. In the hotel industry, this means leveraging algorithms to streamline operations and tailor guest interactions (Igani, 2023).

However, the main role of a combination of specific roles of AI in the hospitality industry, which includes enhanced customer service, operational efficiency, personal experience, revenue management, as well as security and safety (Benjamin and Cynthia, 2025). When it comes to enhanced customer service, AI-driven chatbots and virtual assistants deliver immediate customer service, managing inquiries, bookings, and personalized suggestions, thereby minimizing wait times and maximizing guest satisfaction through 24/7 support (Hussaini and Gaji, 2024)

Considering operational efficiency, AI streamlines hotel operations by automating check-in/out, housekeeping schedules, and inventory, freeing staff to focus on complex, customer-centric tasks, thereby enhancing both service quality and productivity (Otuedon et al, 2025). When deliberating on personal experience, AI uses data analytics to personalize guest experiences by understanding their preferences, enabling tailored room settings, dining, and activity recommendations for a more enjoyable stay (Akintade et al, 2025)

In consideration of revenue management, AI-driven revenue management analyzes booking data, competitor pricing, and market trends to optimize room rates, enabling hotels to remain competitive and increase profitability through maximized occupancy (Adim and Mezeh, 2020). Considering security and safety, AI-driven surveillance and facial recognition provide real-time security enhancements by detecting anomalies and identifying potential threats, preventing unauthorized access and ensuring a safer environment (Oluwagbaemi and Adeyemo, 2023)

Implementing AI in their daily operations allows Nigerian hotels to boost efficiency, enhance guest experiences, and maintain a competitive edge in the evolving digital hospitality sector.

2.2 AI Applications in the Hotel Industry

The concept of AI in the hotels in Nigeria describes the applications of AI in the hotel industry, and the value it brings to its daily operations. The hotel industry is undergoing a transformation through AI integration, with innovations like chatbots, facial recognition, smart rooms, and automated check-ins improving efficiency, security, and overall guest satisfaction.

2.2.1 Chatbots and Virtual Assistants

AI-powered chatbots and virtual assistants are increasingly vital in hotel customer service. These systems instantly respond to guest inquiries, facilitate bookings, provide personalized recommendations, and manage complaints. Unlike human agents, chatbots operate around the clock, ensuring guests receive timely assistance at any hour. This minimizes wait times and significantly enhances the overall guest experience (Pillai and Sivathanu, 2020)

2.2.2 Facial Recognition Technology

Facial recognition technology is improving security and optimizing hotel operations. Many contemporary hotels employ AI-driven facial recognition systems to facilitate seamless check-ins, eliminating the need for physical identification documents. This innovation also strengthens security by restricting access to designated areas to authorized personnel only. Moreover, it can identify returning guests, allowing hotels to offer personalized services tailored to their preferences (Xu et al, 2021)

2.2.3 Smart Rooms and Personalized Experiences

AI is transforming guest experiences through smart room automation. Intelligent systems can regulate lighting, temperature, and entertainment settings according to individual preferences. Voice-activated assistants like Amazon Alexa or Google Assistant enable guests to adjust room features effortlessly using voice commands, enhancing comfort and convenience (Arapou and Kapiki, 2023). Additionally, by analyzing previous preferences, AI can further customize the stay by providing personalized recommendations for dining, activities, and hotel services (Das, 2023)

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2.2.4 Automated Check-Ins and Check-Outs

Conventional check-in and check-out procedures can be lengthy, frequently resulting in long wait times. AI-powered automated systems simplify this process by enabling guests to check in through mobile apps or self-service kiosks. Utilizing facial recognition, QR codes, or mobile key access, these systems minimize physical interaction, making the process quicker and more efficient (Marques, 2019).

AI adoption allows hotels to achieve significant gains in efficiency, security, and customer satisfaction, ensuring their long-term success in the dynamic hospitality industry.

2.3 Customer Experience in the Nigerian Hotels

2.3.1 Definition of Customer Experience in Hospitality

In the hospitality industry, customer experience refers to guests' overall perception and level of satisfaction based on their interactions with a hotel or service provider. It includes every stage of their journey, from booking and check-in to in-room amenities, dining, and post-stay engagement (Kandampully et al, 2018). Delivering a positive customer experience enhances guest satisfaction, promotes repeat visits, and strengthens brand loyalty, making it a vital component of success in the hospitality sector (Godovykh and Tasci, 2020)

2.3.2 Importance of Customer Experience in Hospitality

Customer experience is a cornerstone of the hospitality industry, as it significantly affects a hotel's reputation, profitability, and competitive standing. Guests who have a positive experience are more likely to leave favorable reviews, recommend the hotel to others, and return for future stays (Kandampully et al, 2018). Subsequently, a negative experience can result in poor reviews, decreased customer retention, and financial setbacks. In today's digital landscape, online reviews and social media play a crucial role in shaping booking decisions, making exceptional customer service a top priority for hotels (Veloso and Gomez-Suarez, 2023). Additionally, delivering an outstanding customer experience enhances operational efficiency. Hotels that proactively anticipate and fulfill guest expectations through seamless services, personalized interactions, and swift issue resolution can optimize resources and improve staff productivity (Rahimian et al, 2020). Prioritizing customer satisfaction also contributes to increased revenue, as satisfied guests are more inclined to spend on premium services such as fine dining, spa treatments, and luxury room upgrades (Alnawas and Hemsley-Brown, 2019)

2.3.3 Factors Influencing Customer Experience in Hotel Industry in Nigeria

Various factors influence the overall customer experience in the hospitality industry, directly affecting guest satisfaction, loyalty, and a hotel's reputation. Key aspects include service quality, technological convenience, cleanliness, personalization, and security.

1. Service Quality

The professionalism, warmth, and attentiveness of hotel staff are essential in shaping guest experiences. Personalized service, courteous interactions, and swift issue resolution greatly enhance guest satisfaction. Well-trained employees who anticipate guest needs and deliver exceptional service contribute to a welcoming and pleasant atmosphere, encouraging repeat visits (Gawuna, 2019)

2. Technology and Convenience

The adoption of advanced digital technologies has revolutionized hotel operations, providing guests with a more seamless and efficient experience. Innovations such as mobile check-ins, AI-powered chatbots for instant assistance, smart room controls, and automated concierge services enhance convenience and minimize wait times. These solutions not only improve guest comfort but also enable hotels to streamline operations and maximize efficiency (Osadare et al, 2024)

3. Cleanliness and Comfort

Guests anticipate impeccable cleanliness and well-maintained accommodations. Pristine rooms, fresh linens, and sanitary public spaces enhance their overall experience. On the other hand, inadequate hygiene, outdated facilities, or poor maintenance can create a negative impression, deterring repeat visits and damaging a hotel's reputation (Ogbunankwor et al, 2020)

4. Personalization

Tailoring services to match guest preferences enhances their stay with a personalized touch. Customized dining choices, preferred room settings, tailored activity suggestions, and loyalty perks create a sense of value and exclusivity. By leveraging AI and data analytics, hotels can anticipate guest needs, delivering unique and memorable experiences (Gioko et al, 2021)

5. Security and Safety

Ensuring a safe and secure environment is a key priority for guests. Advanced security features, including surveillance systems, keyless room entry, biometric authentication, and health safety protocols, enhance their sense of security. Hotels that

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prioritize strong security measures provide a worry-free experience, fostering greater trust and satisfaction (Diminyi et al, 2020).

2.4 Operational Efficiency in Hotels

Operational efficiency in the hospitality industry refers to a hotel's capability to optimize resources, minimize waste, and streamline service delivery while upholding exceptional guest satisfaction. Efficient operations contribute to cost reduction, increased profitability, and an enhanced guest experience (Ndu and Ajao, 2023). In Nigeria, where the hotel sector is expanding rapidly, maintaining operational efficiency is essential for staying competitive. However, various challenges impede seamless operations.

2.4.1 Key Indicators of Operational Efficiency in Hotels

2.4.1.1 Cost Management

Successful hotels prioritize cost reduction while upholding excellent service quality. This includes strategic budgeting, efficient resource allocation, and adopting energy-efficient solutions like smart lighting and water conservation. Additionally, implementing waste reduction strategies, such as sustainable practices and streamlined inventory management, helps regulate expenses. Effective cost management boosts profitability and ensures long-term financial stability without diminishing the quality of the guest experience (Abdelmawgoud and Abd El Salam, 2022)

2.4.1.2 Staff Productivity

The effectiveness of hotel employees is influenced by factors such as service speed, staff-to-guest ratio, and multitasking abilities. Skilled and motivated staff improve operational efficiency by providing fast, high-quality service. Implementing regular training programs, performance-based incentives, and well-defined roles enhances productivity. Effective workforce management not only optimizes hotel operations but also boosts guest satisfaction, resulting in positive reviews and stronger customer loyalty (Nikolskaya et al, 2018)

2.4.1.3 Guest Satisfaction Score

Strong customer satisfaction ratings are a vital measure of effective hotel management. Metrics like online reviews, direct guest feedback, and Net Promoter Scores (NPS) offer valuable insights into service quality, staff efficiency, and overall guest experience. Positive ratings strengthen a hotel's reputation, attract new guests, and foster repeat business. Consistently enhancing service delivery and providing personalized experiences are essential for maintaining high satisfaction levels (Duric and Potočnik Topler, 2021)

2.4.1.4 Automation and Technology Utilization

Implementing digital solutions such as AI-powered chatbots, smart room controls, and automated check-in systems greatly improves operational efficiency by reducing manual workload and enhancing response times. These innovations enhance guest convenience, streamline hotel operations, and optimize resource management. By embracing automation, hotels can minimize human errors, improve service quality, and deliver a seamless experience that aligns with the growing expectations of today's travelers (Gajić et al, 2024)

2.4.1.5 Supply Chain and Inventory Management

Efficient procurement, stock control, and supplier coordination are crucial for smooth hotel operations. By optimizing inventory levels and refining supply chain processes, hotels can avoid shortages, minimize waste, and manage costs effectively. Leveraging inventory tracking systems and fostering strong supplier relationships enhances operational efficiency, ensuring essential supplies are readily available. A well-structured supply chain supports consistent service quality and elevates overall guest satisfaction (Tao et al, 2024)

2.4.1.6 Energy and Resource Efficiency

Adopting effective energy management strategies is crucial for both sustainability and cost-effective hotel operations. The use of smart lighting, water-saving initiatives, and renewable energy sources like solar power helps minimize energy consumption while ensuring guest comfort. Additionally, efficient heating, ventilation, and air conditioning (HVAC) systems optimize resource utilization. By embracing eco-friendly practices, hotels can reduce operational expenses, strengthen their commitment to environmental sustainability, attract eco-conscious guests, and enhance their overall brand reputation (Poldrugovac et al, 2016).

2.4.2 Challenges to Operational Efficiency in Nigerian Hotels

2.4.2.1 High Operational Costs

The hospitality industry contends with escalating expenses driven by rising energy prices, high maintenance costs, and volatile exchange rates. These financial pressures increase overall operational expenditures, impacting profitability and budget stability. To address these challenges, hotels must implement effective cost management strategies, including energy-efficient

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technologies, predictive maintenance, and strategic financial planning, ensuring sustainable operations and long-term business success (Ahmodu et al, 2024)

2.4.2.2 Skill Gaps and Workforce Challenges

Many hotels struggle to maintain a skilled workforce, leading to inconsistencies in service quality and operational inefficiencies. Factors such as inadequate training, high employee turnover, and a shortage of specialized talent exacerbate these issues. To address these challenges, hotels can invest in ongoing staff development, offer competitive wages, and implement career growth initiatives to improve service standards and operational effectiveness (Adeola and Ezenwafor, 2016)

2.4.2.3 Limited Adoption of Technology

While the global hospitality industry increasingly adopts advanced automation, many Nigerian hotels still depend on manual processes due to financial constraints and a lack of technical expertise. High implementation costs, inadequate infrastructure, and resistance to change further slow technological advancements. To bridge this gap, investing in cost-effective digital solutions, staff training, and government support can drive adoption, improving efficiency, service quality, and industry competitiveness (Chikezie et al, 2023)

2.4.2.4 Inconsistent Power Supply

Regular electricity disruptions pose a significant challenge for hotels, requiring them to rely on expensive backup generators to sustain operations. This drives up energy costs, hampers service efficiency, and diminishes guest comfort. To address this issue, hotels can invest in alternative energy solutions like solar power, energy-efficient technologies, and reliable backup systems to enhance operational resilience and reduce expenses (Akintade et al, 2025)

2.4.2.5 Supply Chain Disruptions

Hotels frequently face inventory shortages due to their dependence on imported goods and challenges like transportation delays and fluctuating exchange rates. These disruptions impact service consistency and the availability of essential supplies. Strengthening local supplier networks and implementing effective inventory management strategies can help minimize these risks and ensure smooth operations (Patafta and Milohnić, 2022)

2.5 Factors Impacting the Adoption of AI in the Hotel Industry

The adoption of Artificial Intelligence (AI) in the hotel industry is influenced by a complex interplay of factors, impacting its speed and scope.

2.5.1 Cost

Deploying AI solutions, including advanced chatbots, facial recognition systems, and smart room technologies, demands a considerable initial investment. Smaller hotels, in particular, must carefully analyze the potential return on investment (ROI) by weighing hardware, software, integration, and maintenance costs against expected improvements in efficiency, revenue, and guest satisfaction. The financial risk associated with AI adoption can often act as a major barrier (Nam et al, 2021)

2.5.2 Infrastructure and Technology Readiness

AI implementation depends on a strong digital infrastructure, including stable internet connectivity, efficient data storage, and advanced processing capabilities. Many hotels, especially in developing regions, may struggle with inadequate infrastructure to support sophisticated AI applications. This challenge extends to both hardware and software. Additionally, seamless integration with existing hotel management systems is essential for effective AI adoption and smooth operations (Rasheed et al, 2023)

2.5.3 Regulatory and Data Privacy Concerns

AI algorithms rely on extensive data collection, storage, and analysis to optimize guest experiences, booking patterns, and operational processes. The accuracy and completeness of this data are crucial, as poor-quality data can result in ineffective AI-driven decisions. Additionally, data privacy and security are key concerns, requiring hotels to comply with regulations while responsibly handling guest information (Ezzaouia and Bulchand-Gidumal, 2020)

2.5.4 Technical Expertise and Skills Gap

Effective AI implementation depends on a skilled workforce capable of managing and maintaining AI systems. However, many hotels struggle to find and retain employees with the required technical expertise. Training existing staff to work with AI-driven processes is crucial for smooth adoption. Skill shortages can limit the efficient use of AI technologies, preventing hotels from maximizing their benefits (Gajić et al, 2024)

2.5.5 Customer Acceptance and Trust

Although AI provides significant advantages, its successful adoption depends on customer acceptance. Some guests may be reluctant to engage with AI-powered chatbots or may have privacy concerns regarding facial recognition technology. Hotels must implement AI solutions thoughtfully, ensuring they enhance rather than diminish the guest experience. Transparency, clear

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communication, and reassurances about data security are essential to building trust and addressing potential concerns (Srivastava et al, 2022)

2.6 Benefits of AI Integration into Hotel Industry

The benefits of integration of AI in the hotel industry in Nigeria cannot be overemphasized, these benefits address existing challenges and enhances the overall guest experience

2.6.1 Competitive Advantage and Innovation

Integrating AI technology positions Nigerian hotels as modern and innovative, appealing to tech-savvy travelers and setting them apart from competitors. This can enhance brand loyalty and expand market share, particularly as the Nigerian middle class grows and international tourism rises. Embracing AI enables Nigerian hotels to align with global industry standards and improve their competitive edge (Jamshed et al, 2024)

2.6.2 Data-Driven Decision Making

AI leverages data analytics to generate valuable insights into guest preferences and operational efficiency. This empowers hotels to make data-driven decisions on service enhancements, marketing strategies, and resource management, ultimately improving business performance and guest satisfaction (Vinnakota et al, 2022)

2.6.3 Enhanced Customer Service and Personalization

AI-driven chatbots and virtual assistants deliver round-the-clock customer support, efficiently handling inquiries, managing reservations, and offering tailored recommendations. By minimizing wait times and enhancing responsiveness, these technologies improve guest experiences and cater to individual preferences. In a hospitality industry where exceptional service is crucial, AI adoption provides a strong competitive advantage (Jogarao, 2024)

2.6.4 Enhanced Security and Safety

AI-driven surveillance systems and facial recognition technology strengthen security by monitoring real-time activities and identifying potential threats. These solutions help prevent unauthorized access, enhance safety for guests and staff, and address security challenges in high-risk areas, ensuring a more secure hotel environment (Ivanov and Webster, 2017)

2.6.5 Improved Revenue Management

AI-powered algorithms assess market trends, competitor pricing, and booking patterns to dynamically adjust room rates, ensuring optimal pricing strategies. This data-driven approach maximizes occupancy, enhances revenue management, and helps hotels stay competitive in an ever-changing market. In Nigeria's unpredictable economic landscape, leveraging AI for dynamic pricing enables hotels to respond swiftly to demand fluctuations, attract more guests, and improve overall profitability while maintaining a competitive edge (Abufawr et al, 2024)

2.6.6 Increased Operational Efficiency

AI streamlines routine operations such as check-in/check-out, housekeeping scheduling, and inventory management, reducing manual workload and improving efficiency. By automating these tasks, staff can dedicate more time to personalized guest interactions and complex service needs. This enhances resource utilization and lowers operational expenses. Given the high cost of operations in Nigeria, AI-driven automation provides a significant advantage by improving productivity and overall service quality while maintaining cost-effectiveness (Car, 2024)

3.0 METHODOLOGY

This study employed a qualitative research methodology, specifically a systematic literature review, as the primary data collection method. This approach was selected to gain a comprehensive understanding of existing knowledge within the research domain (Aspers and Corte, 2019). The systematic literature review followed a structured and rigorous process of identifying, selecting, and analyzing relevant scholarly articles. An extensive search across academic databases and research repositories initially yielded 26 articles. However, after a thorough screening process, only 14 were found to be directly relevant to the research focus, ensuring the inclusion of high-quality and pertinent data (Lame, 2019)

The data collection process adhered strictly to ethical guidelines, including proper acknowledgment of original authors, accurate representation of their findings, and strict avoidance of plagiarism. This methodology emphasized objectivity and unbiased data extraction, maintaining the integrity and reliability of the research. By following a systematic approach and upholding ethical standards, this study aimed to deliver a credible and insightful analysis of the topic.

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4.0 FINDINGS AND RESULTS

The adoption of Artificial Intelligence (AI) in Nigerian hotels is still in its nascent stage, with only a handful of premium establishments utilizing AI-powered solutions. While AI holds immense potential to revolutionize the hospitality industry, most hotels continue to rely on manual operations. Factors such as limited awareness, high implementation costs, and infrastructural constraints have slowed AI integration. However, as digital transformation progresses, there is a growing interest in leveraging AI-driven automation to enhance service efficiency and guest experiences. (Nam et al, 2021)

Globally, AI is transforming hotel operations and elevating customer experiences. Prominent AI applications include chatbots for instant customer support, facial recognition for secure check-ins, smart room automation for personalized stays, and predictive analytics for optimizing pricing and demand forecasting. Although these technologies are widely embraced in developed markets, Nigerian hotels have been slow to adopt them due to financial limitations and technical challenges (Pillai and Sivathanu, 2020)

Guest satisfaction in Nigerian hotels varies significantly, with frequent complaints about inconsistent service, prolonged wait times, and inefficient issue resolution. AI has the potential to address these concerns by enabling personalized experiences, automating customer interactions, and streamlining check-in and check-out procedures. However, the slow adoption of AI means many hotels struggle to meet evolving guest expectations (Das, 2023).

Operational efficiency is vital for enhancing profitability and service quality in the hospitality sector. AI-powered technologies, such as automated inventory management, intelligent scheduling, and energy-efficient systems, optimize resource utilization and minimize waste. While some Nigerian hotels have adopted basic digital tools, the widespread integration of AI remains constrained by infrastructure deficiencies and a shortage of skilled personnel (Abdelmawgoud and Abd El Salam, 2022)

Several challenges hinder operational efficiency in Nigerian hotels, including high energy costs, frequent power disruptions, workforce skill shortages, and inefficient supply chain processes. Dependence on costly backup power solutions and outdated manual operations further escalate expenses, reducing overall profitability (Gajić et al, 2024)

Key obstacles to AI adoption in Nigerian hotels include the high initial investment required, a lack of technical expertise, concerns about data privacy, and resistance to change. Additionally, unreliable internet connectivity and inadequate IT infrastructure pose significant barriers to seamless AI implementation (Ahmodu et al, 2024)

The integration of AI in hotels offers numerous advantages, including enhanced customer service through AI-powered chatbots, improved security via facial recognition, dynamic pricing optimization using predictive analytics, and reduced operational costs through automated energy management. As the industry continues to evolve, embracing AI can help Nigerian hotels remain competitive, elevate guest experiences, and drive sustainable profitability (Chikezie et al, 2023).

5.0 DISCUSSION

The study's findings underscore both the potential benefits and the challenges associated with AI adoption in Nigerian hotels. While AI presents an opportunity to revolutionize the hospitality industry by enhancing customer experience and optimizing operations, its implementation remains relatively low. This discussion looks into key insights from the research and their broader implications for the industry's future.

The adoption of AI in Nigerian hotels is still in its early stages, largely due to high initial investment costs, limited technical expertise, and inadequate infrastructure. In contrast to developed markets where AI-driven tools like chatbots, facial recognition, and smart room automation are commonplace, many Nigerian hotels struggle with financial and logistical obstacles that hinder widespread adoption. However, with the ongoing push for digital transformation, there is increasing recognition of AI's potential to improve service delivery, enhance resource management, and boost customer satisfaction (Godovykh and Tasci, 2020)

One of the primary challenges Nigerian hotels faces is maintaining consistent customer satisfaction. Many guests express concerns over inconsistent service quality, prolonged wait times, and inefficient problem resolution. AI-powered solutions, such as automated check-in processes, personalized guest interactions, and predictive analytics, have the potential to address these issues. By integrating AI-driven tools, hotels can enhance responsiveness, improve service efficiency, and align with evolving customer expectations (Duric and Potočnik Topler, 2021)

Another key issue is operational efficiency. Nigerian hotels contend with high energy costs, frequent power disruptions, and inefficient supply chain management, all of which contribute to increased operational expenses and reduced profitability. AI-based technologies, including smart energy management systems, predictive maintenance, and automated inventory control, can help mitigate these inefficiencies by optimizing resource utilization and minimizing waste. However, the lack of skilled personnel and reluctance to invest in AI-driven solutions continue to slow progress (Akintade et al, 2025)

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Despite these barriers, the advantages of AI integration are clear. AI can strengthen security through facial recognition, refine pricing strategies via predictive analytics, and reduce costs through automation. Hotels that embrace AI will not only gain a competitive edge but also position themselves as forward-thinking and customer-focused establishments (Abufawr et al, 2024). To accelerate AI adoption, stakeholders must address key obstacles by investing in digital infrastructure, providing AI training programs for hotel staff, and exploring cost-effective AI solutions. With the right approach, Nigerian hotels can harness AI to enhance guest experiences, streamline operations, and drive long-term growth.

6.0 CONCLUSION

The integration of Artificial Intelligence (AI) in Nigerian hotels offers a significant opportunity to enhance customer experience and operational efficiency. However, findings reveal that AI adoption is still in its early stages, with only a handful of upscale hotels utilizing AI-driven technologies. Several challenges, including high implementation costs, limited technical expertise, and inadequate infrastructure, continue to impede widespread adoption. Despite these hurdles, there is increasing awareness of AI's potential to optimize service delivery, streamline operations, and boost profitability.

Globally, AI-powered solutions such as chatbots for real-time customer support, facial recognition for seamless check-ins, and smart room automation have transformed the hospitality industry. Nigerian hotels, if able to overcome financial and technical constraints, stand to benefit immensely from AI adoption. Implementing AI-driven strategies can address key inefficiencies such as inconsistent service quality, high energy costs, and supply chain disruptions, ultimately improving operational performance and guest satisfaction.

To accelerate AI integration, industry stakeholders must focus on investing in digital infrastructure, equipping hotel staff with AI training, and identifying affordable AI solutions tailored to the Nigerian market. Additionally, fostering partnerships between the private sector, government, and technology providers can facilitate AI adoption and drive industry innovation.

In conclusion, while AI adoption in Nigerian hotels presents notable challenges, its long-term advantages far outweigh the drawbacks. Embracing AI can enhance service efficiency, elevate guest experiences, and strengthen the competitive position of Nigerian hotels in the evolving global hospitality landscape. A well-planned approach to AI implementation will ensure sustainable growth and long-term success.

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