International Journal of Tourism Business Research (INTOUR)
Tourism Program, Faculty of Economics and Business, University of Mataram, Indonesia
Vol. 04, No. 01, June 2025

Exploring the Application of Artificial Intelligence (AI) Tools in the Operations of Hotels in the Jos Tourism Sector in the Post-COVID-19 Period

Enesi Chukwuemeka Majebi

National Open University of Nigeria, Nigeria.
E-mail: emajebi@noun.edu.ng

Article History

Accepted: 18 December 2024
Revised: 15 March 2025
Published: 15 June 2025

Abstract

Artificial Intelligence (AI) tools have improved the operations of multiple tourism sectors, including hotel accommodation, attractions, transportation, travel agencies, and food and beverages in the post-COVID-19 period. Nonetheless, it does not seem that there is evidence of any study investigating the application of AI in the hotel sector of a developing destination's tourism industry, like Jos, Plateau State, Nigeria, in the post-COVID-19 period. This article employs a semi-structured/In-depth interview technique to explore the perspectives of hotel accommodation stakeholders, including 7 hotel managers, 3 tourism industry sector consultants, and 2 academics in the Jos Metropolitan area of Plateau State, Nigeria, on the use of AI to improve their operations in the post-COVID-19 period. Data derived were descriptively analyzed based on themes on the uses of AI to enhance hotel business efficiency. The research revealed the efficiency of AI tools in the selected Jos hotels and the hindrances to their use, including customers' personal privacy concerns, and poor patronage due to the current economic and security crisis. The article has implications for suggesting efficient measures for adopting AI technologies, including facial recognition, and mobile app/card entry for revenue generation, improving security and customer services in similar and other sectors of Nigeria's tourism industry..

Keywords: Artificial Intelligence (AI), Tourism, Hotels, Technology, Efficient service delivery, Post-COVID-19 period.

INTRODUCTION

The tourism industry is multisectoral. It comprises transportation, accommodation, food and beverage, travel agencies, and attractions in tourist-generating and destination regions. Recent literature (Adekuajo et al. 2023; Ku and Chen, 2024) suggests that these sectors leverage technological innovation, including Artificial Intelligence (AI) tools in providing efficient complementary services to a wide range of stakeholders, chief among which are customers (tourists, visitors & locals) in the tourism value chain. The accommodation sector is undoubtedly the largest subsector in the tourism industry (Pappas and Glyptou, 2023). The accommodation sector managers, especially in developing destinations recovering from crises and similar threats, including the post-COVID-19 economic crises, can adapt and deploy Artificial Intelligence (AI) to enhance efficient service delivery (Francis, 2023).

Technology innovations, including mobile booking, check-in, payment, and in-room service, are now common with diverse categories of customers, including tourists and other

people who may require such services (Francis, 2023). Undoubtedly, these innovations are transforming the traditional front desk, including other services in the accommodation sectors (e.g., hotels, motels, bed & breakfast outlets) as customers/guests get services they usually request at the front desks through technological mediums. This transformation can be described as a service innovation, which refers to devising new or improved service concepts that satisfy customers' unmet needs (Francis, 2023; Tuomi, 2021; Pappas et al. 2021; Cheng et al. 2021), using technological innovations.

Artificial Intelligence has been deployed for facial recognition and temperature checks in developed and developing destinations, accommodation facilities, and other public places without physical contact. These technological innovations were developed by hardware companies, occasioned by the COVID-19 social restrictions (Sunnihitha and Priyanka, 2022; Khanam et al., 2021; Lynch et al., 2020). Artificial intelligence digital tools facilitate high efficiency in the check-in and check-out visitors' experiences, and have aided accommodation guests' access to their rooms and other venues within the service facilities using facial recognition software. In addition to facilitating efficient service delivery, it can help to reduce the risk of crimes against guests and service providers at hotel accommodation facilities (Ambassador-Brikins et al. 2024).

AI can be regarded as a technological innovation tool. Technological innovation, according to Tidd and Bessant (2020) can be described as the combination, integration, and interaction of different technologies that make the product or service delivery efficient. This is evident in Lau's (2020) study, which suggests that during the COVID-19 pandemic, many accommodation outlets (e.g. hotels) invested in technology to enable guests to access their rooms using digital key devices. This innovation does not require face-to-face interaction with front desk officers, except, perhaps, when there is a malfunction, and where there is no automated mechanism to guide guests.

Extant studies (Steyn and Hasnat, 2020; Mariani and Borghi, 2021; Lukanova and Ilieva, 2019) reveal that the automated device known as robot butler is popular among hotel guests and their service providers and helps to reduce face-to-face interactions with front desk officers. In addition, the device has facilitated revenue generation as it is used to deliver items, including coffee, within the lobby of a café for a fee (Francis, 2023). Also, Artificial Intelligence (AI) as a viable digital technology tool has been employed by some hotels to improve service quality during the pandemic (Yang et al. 2020; Jiang and Wen, 2020; Marković et al. 2020).

Technological Determinism Theory and AI Adoption in the Hotel Sector of Nigeria's Tourism Industry

German philosopher and economist, Karl Max is credited with the first major elaboration of a technological determinist view of socioeconomic development. He contended that technological changes primarily influence human social relations and organizational structure and that social relations and cultural practices ultimately revolve around a given society's technological and economic base (Croteau and Hoynes, 2003). The term ''technological determinism'' was coined by Thorstein Veblen, and the theory was further refined by Marshall McLuhan in 1964 (Asemah et al. 2017; Communication Theory, 2016). The theory states that media technology shapes how members of society think, feel, and act, and how society operates

as it moves from one technological stage to another (Communications Capstone, 2001). Technology defines society's nature, driving force, and history; technology can drive human interaction and create social change (Asemah et al. 2017; Communication Theory, 2016) in service industries such as tourism (Majebi, 2018). Explaining the theory from the ontological assumptions, Communication Capstone (2001) shows that individuals have little or no free will as they have to deploy the media used by society to meet their communication needs (Adelakun, 2018). Technological determinism manifests itself in various ways, starting with introducing newer technologies that introduce new ways of doing things (Communication Theory, 2016). The invention of language, the discovery of various metals (e.g., iron, bronze, copper, etc.); the introduction of double-entry book-keeping, the internet, and the emergence of general artificial intelligence are some examples of the demonstration of technological determinism offered by Singh (2023). Asemah et al. (2017) note that the theory focuses on the effects of technology on society. The deployment of artificial intelligence for efficient operations is becoming common in tourism businesses, including hotels, as it enhances efficient service delivery and customer satisfaction (Ku and Chen, 2024; Majebi, 2024; Francis, 2023; Tuomi, 2021; Cheng et al., 2021).

Study Context: Jos Plateau, Nigeria

Nigeria is an example of a destination in sub-Saharan Africa with a diverse range of tourist accommodation, including luxury, mid, and small accommodation outlets for a wide range of visitors and locals at its major cities, Abuja, Lagos, Port Harcourt, Enugu, amongst several others, including Jos, Plateau. According to the PWC's (2024) Hospitality Outlook for 2019-2023, Nigeria's overall hotel room accommodation revenue among other African destinations rose 7.4% in 2018, up from the 1.9% increase in 2019, representing a 7.2 % point improvement in the country. Also, the PWC's (2024) report shows that Nigeria has the fastest-growing market increase of 20% in 2018, compared with other African destinations such as Kenya (14.6%) and Mauritius (11.7%) for the same Year. Although Jos, Plateau, Nigeria's home of tourism in the country's North Central Zone, is undoubtedly a beneficiary of this growth, despite the variability of crisis associated with the region (Majebi, 2021). The city of Jos has the potential to attract diverse domestic and international tourists and other visitors from across the country and the globe, despite its experience of decline in tourism activities, which affected the global tourism sectors during the COVID-19 Period. This is due to the availability of basic social infrastructure, and major natural tourist attractions, including Shere Hills, Wase Rock, Riyom Rock Formation, Kurra Falls, Assop Falls, Jos Wildlife Park, Kurang Volcanic Mountain, etc. There are major hotel accommodations in Jos, including the Plateau and Hillcrest hotels for tourists and guests (Majebi, 2021). An evaluation of the extent of the application of digital innovation/technology technologies including mobile booking, check-in, payment and in-room service, digital key, facial recognition, security and Closed-Circuit Television (CCTV) in the Jos, Plateau hotel sector for efficient customer service operations and security in the post-covid period would no doubt contribute to empirical literature and practice of hotel management in the study site context and similar developing tourist destinations (Majebi, 2020; Majebi, 2021; Majebi, 2023; Majebi, 2024; Majebi & Agbebaku, 2024).

The city of Jos, Plateau, lies in the center of Nigeria, between the predominantly Muslim north and the mostly Christian south. It has a population of about 900,000 residents. It is the

administrative capital and largest city in the state. The city is located on the Jos Plateau at about 1,238 meters or 4,063 feet above sea level, with many granite hills and rock outcroppings, sometimes reaching another 300 meters in elevation. The city experiences almost the same climatic conditions as Abuja but can be colder during the dry seasons, with temperatures as low as 4.4 degrees Celsius at night. The city was established around tin mining activities during colonial times. It attracted migrants from all parts of Nigeria to work in the mines and with the colonial administration. The colonial legacy of indirect rule initially relied on northern emirate structures. Later, political power was transferred to the 'native' tribes of the Jos Plateau. Among these, the Berom was one of the largest tribes and the most vocally defended 'indigene' rights today. But Hausa migrants from the north constituted by far the most numerous group in early Jos. Today, the ownership of Jos and claims to 'indigene' status are fiercely contested between the native tribes and the Hausa (Krause, 2011), and this can cause a crisis in the city. Despite the city's ethic configuration, Jos could be a viable destination for tourism because of its many natural tourist attractions, including the Assop rock formation, Rayfield holiday resort, Jos wildlife park, Pandam game reserve, and temperate climate conditions (Awaritefe, 2007; Ijeomah et al., 2011; Majebi, 2021).

Theoretical Framework/Study Justification/Novelty

The theoretical framework adopted for this study is the technological determinism theory (see the preceding section) (Croteau and Hoynes, 2003). It is appropriate for the character of this study's research problem, the set objectives, and the questions that guided the field study. This is, given that the entire investigation is based on deploying a modern technological product (AI) including mobile booking, check-in, payment and in-room service to enhance efficient service delivery in hotel accommodation, customer satisfaction and security in the post-covid 19 period. Although other studies (Azam et al. 2020; Dafoe, 2015; De la Cruz Paragas and Lin, 2016; Ambassador-Brikins, et al. 2023; Majebi, 2024) adopted the theory for their research, this study seems to be the first to adopt the theory in the context of the deployment of AI in the hotel sector of the Jos tourism industry in Nigeria for efficient operations in the post-covid 19 period. Thus, this research sought to provide answers on the extent to which Jos Plateau's hotel sector and relevant tourism industry stakeholders employ AI tools such as mobile booking/app, unmanned check-in, payment and in-room service, and digital key to enhance efficient service delivery, customer services and safety and security in the post Covid-19 period.

RESEARCH METHOD

This research sought to provide answers on the extent to which Jos's accommodation hotel sector stakeholders employ AI tools such as mobile booking apps, unmanned check-in, payment and in-room service, and digital keys to enhance efficient service delivery, customer services and safety and security in the post-Covid-19 era. This includes identifying challenges that are being experienced in the deployment of AI technologies in hotel operations and possible recommendations for its deployment. The qualitative method was adopted to meet these research objectives and provide answers to the research questions. In line with Donnelly et al.'s (2013) study which suggests that sample selection for qualitative research is not

calculated using mathematical stipulations and probability statistics, 12 hotel organizations, 2 academics, and 3 industry consultants were selected for the field research using a snowballing technique.

In the same vein, heeding the counsel of Donnelly et al. (2013) to qualitative researchers to describe their sample in terms of characteristics and relevance to the wider population. The selection of the organizations was based on their relevance to the research and the role they play in society as agents of the law, tourism and hospitality industry regulators, and operators of hotels, which form the subject of the study.

The selected hotel organizations were bifurcated into two categories: 6 medium and 6 large-scale hotels. 2 academics and 3 industry consultants were recruited from the study destination. Letters of introduction were delivered to the representatives of the 12 key hotels in the Jos metropolis and the 2 academics and 3 industry stakeholders, and follow-up contacts were made through telephone calls and personal visits. Appointments were secured with the hotels that exhibited interest in and support for the study, and face-to-face in-depth interviews were conducted with their representatives. Even though 12 hotel organizations were selected for the study in the location, 7 of the hotel organizations, comprising 4 medium and 3 large-scale hotels, and the 2 academics and 2 industry consultants supported and participated in the study. Representatives of these hotel organizations, academics and industry consultants served as key informants and respondents to in-depth interviews. Two interview guides served as research instruments for the two categories of respondents (i.e., hotel operators and academics/industry consultants/regulatory authorities). Audio recording of the interviews was carried out for those who found such comfortable. However, some key informants were more comfortable with documentation.

To ensure validity, a member check was carried out as suggested by Donnelly et al. (2013) and Ningi (2022); recorded interviews were played to the hearing of the key informants who were recorded while the written responses were read out to those who declined to have their responses recorded on tape. As observed by Mihas (2023), there is no single strategy agreed upon for determining themes, but researchers might create clusters of seemingly related codes and then name the conceptual glue that holds them together. Responses were transcribed and categorized into themes, based on the research objectives. Data are presented non-numerically, as narrations and direct quotations used to substantiate the thematic categories. Braun and Clarke's thematic analysis method formed the basis for the analysis and interpretation of data.

RESULT AND DISCUSSION

The findings of this study affirmed that AI tools aid efficient operations and customer service delivery in the hotels in the Jos Plateau metropolis in terms of speed when interacting with guests and general hotel operations after the implementation of AI tools such as unmanned check-in devices, facial recognition electronic tools, scanners, etc. This finding is consistent with those of other recent research (Adekuajo, et al., 2023; Francis, 2023; Ku & Chen, 2024; Majebi, 2024) on the use of AI technologies and related innovations. Nonetheless, while all 11 interviews comprising 4 medium and 3 large-scale hotel operators, 2 academics and 2 industry consultants affirmed the efficiency of AI tools (see Table 1 for a profile of interviewees), only

the large-scale hotel operators confirmed that AI deployment in their facilities has substantially reduced check-in time, improved customer satisfaction levels and reduced operational costs in within their facilities.

Table 1. Profile Of The Study Sites And Research Participants

Category	Jos Metropolis		
	Code	Position	Years of experience
Medium Scale Hotel	MSH1	Manager	4
	MSH2	Manager	2
	MSH3	Operations Manager	5
	MSH4	Manager	5
Large Scale Hotel	LSH1	General Manager	9
	LSH2	Human Resources Manager	11
	LSH3	General Manager	8

Note. A- Academics; IC- Industry Consultants; LSH-Large-Scale Hotel; MSH-Small-Scale Hotel.
Source: Authors' (Field interview, 2024).

Use of AI tools by the Jos accommodation sector (hotel) managers for efficient operations and customer services.

All 11 key research participants who were representatives of their hotels in the Jos Metropolitan area affirmed the importance of the use of artificial intelligence technologies, including mobile booking/app, check-in, payment, and in-room service, and digital key to enhance efficient service delivery and customer services in hotels, post-COVID-19. However, only the representatives from large-scale hotels in the Jos Metropolis noted that they employ all these technologies, including facial recognition devices, and mobile apps in the operations of their hotels. For example, the general manager (LSH1) of a large-scale hotel with 78 rooms in the Jos metropolis said;

"During our experience of the COVID-19 pandemic and afterwards, we leveraged deploy AI tools such as mobile booking, unmanned check-in, payment and in-room service, and digital key to get our facilities running and it helps to improve customer satisfaction, security and reduction in the overhead costs in our operations"(LSHC1, personal communication, February 2025).

Similarly, a human resource manager (LSH2) in a hotel in the Jos metropolis said;

"To be honest, AI technological tools such as answering devices, electronic body scanners, heat wave detectors, keyless entry full body scanners have facilitated our operations following our experiences of the COVID-19 pandemic and help to reduce operational costs" (LSH2, personal communication, February 2025).

LSH1 and LSH2's statements on the use of AI were consistent with those of LSH3 regarding the use of AI to enhance customer service and hotel operations in the post-COVID-19 period.

Challenges of AI technologies to enhance efficient operations in Jos metropolitan hotels.

"Most AI tools, such as unmanned room entry/services, facial recognition devices, and CCTV, can make our services more effective and efficient as seen in other bigger hotels. But we are currently struggling to cope with the economic situation evident in declining room occupancy. We shall not hesitate to acquire and deploy these tools as soon as our situation improves, and we shall deploy these tools as soon as our revenues improve to improve our operations and reduce costs." (MSH1, personal communication, February 2025).

In the same vein, the manager (MSH1) in the Jos metropolis said:

"AI tools such as temperature detectors, electronic devices, keyless entry cards, and CCTV devices are useful following the COVID-19 experience. However, the low patronage in our hotels occasioned by limited patronage has affected our plans to implement some of these tools in our operations to enhance customer satisfaction and facilitate our services". (MSH2, personal communication, February 2025)

MSH1 and MSH2's statements are congruent with those of other interviewees (MSHC3 and MSH4) in the Jos metropolis who confirmed how pertinent the use of AI technologies is in the operations of hotels but for their inability to deploy its use due to financial constraints.

Encouraging the deployment of AI tools to enhance efficiency in the medium-scale hotel sector of the Jos tourism industry.

Interestingly, the findings of this study show that large-scale hotels in the Jos Plateau's metropolis adopted some AI tools to enhance the operations of their services compared to medium-scale hotels in the metropolis in the post-COVID-19 period. Nonetheless, findings from these hotel representatives reveal that they would deploy AI tools to enhance the efficiency of their operations when their revenues improve. This shows the relevance of the technology determinism theory, which revolves around the notion that deploying technology (e.g., AI tools) can aid human social relations and organizational efficiency (Asemah et al., 2017; Communications Capstone, 2001; Communication Theory, 2016). The findings of this research have further established the tenets of technological determinism. This is evident in the fact that technology shapes how members of society think, including managers, feel and act, and how society operates as it moves from one technological stage to another, especially following a crisis. Although the study did not reveal any changes in the managerial duties of hotels due to the deployment or intentions to deploy AI tools, it affirms the efficiency of such tools in the operations of hotels and customer service delivery. Moreover, Academics (A1 & A2) and tourism/hospitality consultants (IC1 & IC2) affirmed that Artificial Intelligence in contemporary times facilitates the operations of hotel accommodation outlets, which constitute the largest subsector of the wider tourism industry. The findings of this study are also consistent with a recent study (Majebi, 2024) on the use of AI in the tourist accommodation sector of a similar developing destination context. AI can help deliver efficient customer service when incorporated into the lodging quality service index factors (Bello and Majebi, 2018) and facilitate competitive advantage (Majebi, 2013; Majebi, 2024). It can also enhance revenue generation for the non-oil sector, including hospitality and tourism businesses of the

destination's economy with the support of relevant destinations' authorities (Ajudua et al., 2021; Ajudua et al., 2022; Majebi, 2024).

CONCLUSION

The study which employed the technological determinism theory to explore the use of Artificial Intelligence (AI) tools in hotel outlets in the Jos metropolis revealed the significance of deploying AI tools, including facial recognition scanners, mobile booking apps, and unmanned check-in, among other tools in enhancing the operations of hotels in the study in the post-COVID-19 period. The research established that while some large-scale hotel operators in the Jos metropolitan adopted artificial intelligence tools for their operations in the current post-COVID-19 period, those within the medium-scale hotel categories cannot currently apply AI uses due to a decline in occupancy and limited funds. Consequently, the findings of this research have implications for using artificial intelligence tools for efficient operations in hotel outlets, where they are not being used to aid efficient service delivery in the current post-COVID-19 period and for enhancing security. To facilitate this, tax rebates may be approved by the relevant authorities of the Jos metropolitan area and similar destinations for medium-scale hotels to enable them to use some of their financial resources to introduce artificial intelligence tools in their operations for enhanced customer satisfaction, improved security surveillance, and a reduction in operational costs. This can enhance efficient operations in the hotels and other services-based sectors of the Jos metropolitan tourism industry and similar destinations.

REFERENCES

Adekuajo, I. O., Fakeyede, O. G., Udeh, C. A., & Daraojimba, C. (2023). The Digital Evolution in Hospitality: A Global Review and its Potential Transformative Impact on US Tourism. *International Journal of Applied Research in Social Sciences*, 5(10), 440–462. https://doi.org/10.51594/ijarss.v5i10.633

Adelakun, L. A. (2018). Analysis of Social Media Abuse in Nigerian Politics: Is Regulation Necessary? *Media & Communication Currents*, 2(1), 18-36.

Ajudua, E. I., Majebi, E. C., & Odishika, V. A. (2021). Harnessing the Psotentials of Oil Sectors of the Nigerian Economy to Enhance Sustainable Growth. Signfikan: *Journal IImu Ekonomi*, 10(1), 51–62.

Ajudua, E. I., Majebi, E. C., Aremu-Bakare, T. A., Odishika, V. A., Nwokoro, N. A., & Fagbolu, O. D. (2022). Nexus between Tourism Sector Output and Macroeconomic Indicators in Nigeria. *JIET (Jurnal Ilmu Ekonomi Terapan),* 7(2), 36–46.

Ambassador-Brikins, H. O. C., Majebi, E. C., Lateef, A. A., & Chukwunka, C. A. C. (2024). Use of Closed-Circuit Television (CCTV) Equipment in the Hotel Sector of Nigeria's Tourism Industry. *International Journal of Intellectual Discourse*, 7(3), 123-133. https://www.ijidjournal.org/index.php/ijid/article/view/603

Ambassador-Brikins, H.O.C., Majebi, E.C., Adelakun, L. A. & Chukunka, C.A.C. (2024). Deployment of Closed-Circuit Television (CCTV) and Security Surveillance in Hotels Within South-West Nigeria. *FUWukari Journal of Social Sciences (FUWJSS)*, 3(2), 243- 256. https://fuwjss.com/wp-content/uploads/2024/10/Ambassador-Brikins-Paper-16-Vol-3-No-2.pdf

Asemah, E.S., Nwanmuo, A.N. & Nkwam-Uwaoma, A.O.A. (2017). *Theories and Models of Communication*. Jos: Jos University Press.

Azam, J. A. N., Shakirullah, S., Sadaf, N. A. Z., Owais, K. H. A. N., & Khan, A. Q. (2020). Marshal Mcluhan's Technological Determinism Theory in the Arena of Social Media. *Theoretical*

and Practical Research in the Economic Fields, 11(2), 133-137. https://doi.org/10.14505/tpref.v11.2(22).07

Bello, Y. O., & Majebi, E. C. (2018). Lodging Quality Index Approach: Exploring the Relationship between Service Quality and Customer Satisfaction in Hotel Industry. *Journal of Tourism and Heritage Studies*, 7(1), 58-78.

Cheng, B. L., Shaheen, M., Cham, T. H., Dent, M. M., & Yacob, Y. (2021). Building Sustainable Relationships: Service Innovation at the Pinnacle of Touristic Achievement. *Asian Journal of Business Research*, 11(1), 142–159. https://doi.org/10.14707/ajbr.210103

Communication Capstone. (2021). Spring theory workbook. http://www.uky.edu/~drlane/capstone/mass/determinism.htm

Communication Theory. (2016). *Technological Determinism in Mass Communication*. https://www.communicationtheory.org/technological-determinism/)

Croteau, D. and Hoynes, M. (2003). *Media Society: Industries, Images, and Audiences*. Sage Publications.

Dafoe, A. (2015). On Technological Determinism. A Typology, Scope Conditions, and A Mechanism. *Science, Technology, & Human Values*, 40(6), 1047- 1076. https://doi.org/10.1177/0162243915579

De la Cruz Paragas, F., & Lin, T. T. (2016). Organizing and Reframing Technological Determinism. *New Media & Society*, 18(8), 1528-1546. https://doi.org/10.1177/1461444814562156

Donnelly, P. F., Gabriel, Y., & Özkazanç-Pan, B. (2013) Untold Stories of the Field and Beyond Narrating the Chaos. *Qualitative Research in Organizations and Management: An International Journal*, 8(1), 4-15. https://doi.org/10.1108/17465641311327540

Francis, K. (2023). Innovations in the Accommodation Sector in Kenya, During the Covid-19 Era. *International Journal of Social Science Research*, 11(1). doi:10.5296/ijssr.v11i1.20446

Jiang, Y., & Wen, J. (2020). Effects of COVID-19 On Hotel Marketing and Management: A Perspective Article. *International Journal of Contemporary Hospitality Management*, 32(8), 2563-2573. https://doi.org/10.1108/IJCHM-03-2020-0237.

Khanam, F. T. Z., Chahl, L. A., Chahl, J. S., Al-Naji, A., Perera, A. G., Wang, D., Chahl, J. (2021). Noncontact Sensing of Contagion. *Journal of Imaging*, 7(2), 28. https://doi.org/10.3390/jimaging7020028.

Ku, E. C., & Chen, C. D. (2024). Artificial Intelligence Innovation of Tourism Businesses: From Satisfied Tourists to Continued Service Usage Intention. *International Journal of Information Management*, 76, 102757. https://doi.org/10.1016/j.ijinfomgt.2024.102757

Lau, A. (2020). New Technologies Used In COVID-19 For Business Survival: Insights from the Hotel Sector In China. *Information Technology & Tourism*, 22(4), 497–504. https://doi.org/10.1007/s40558-020-00193-z

Lukanova, G. and Ilieva, G. (2019), "Robots, Artificial Intelligence, and Service Automation in Hotels" (pp. 157-183) in Ivanov, S. and Webster, C. (Ed.) *Robots, Artificial Intelligence, and Service Automation in Travel, Tourism and Hospitality*, Emerald Publishing Limited-Leeds. https://doi.org/10.1108/978-1-78756-687-320191009

Lynch, N., Campbell, L., Purshouse, J., and Betkier, M. (2020). *Facial Recognition Technology in New Zealand: Towards a Legal and Ethical Framework*. Open Access Te Herenga Wa-ka-Victoria University of Wellington. Report. https://doi.org/10.25455/wgtn.17204078.v1

Majebi, E.C. (2013). *Strategic Management in Hospitality and Tourism*. Lagos: National Open University of Nigeria Press.

Majebi, E. C. (2018). E-business and ICT Application for Tourism; A Discuss. *Quarterly Journal of Contemporary Research*, 6(1), 147-155. <http://www.fuojournals.org/Archive/Pub12.html>.

Majebi, E. C. (2020). Crisis Communication Responses for Terrorist Attacks and Threats: Perspectives of Tourism Industry Stakeholder In Abuja, Nigeria's Federal Capital Territory. *International Journal of Hospitality, Leisure, and Tourism*, 4(1), 53-71. https://www.uniport.edu.ng/files/no_5_crisis_communication_responses_for_terrorist_attacks.pdf

Majebi, E. C. (2021). *An Investigation of Stakeholders' Strategies for External Crisis Preparedness: The Nigerian Tourism Industry Perspectives* [Ph.D. thesis, Leeds Beckett University]. https://doi.org/10.25448/lbu.20402844.v1

Majebi, E. C. (2023). *Tourists perceived risk of Abuja, Nigeria's federal capital territory* (pp 1-21) in Yazicioğlu I., Küçükergin F. N., and Şimşek E. (Eds.), Green Inspiration, Detay Yayıncılık Publication-Ankara

Majebi, E. C. (2024). Exploring the Application of Artificial Intelligence (AI) in the Operations of Tourist Accommodation (Hotel) Outlets in Abuja, Nigeria in the Post-COVID-19 Era. *Journal of Hospitality & Tourism*, 22(2), 99-110.

Majebi, E. C., & Agbebaku, H.U. (2024). People's Perceptions of Environmental Quality at Selected Recreation/Tourist Sites in Abuja, Nigeria. *Journal of Environmental and Tourism Education (JETE)*, 7(1) 209-226.

Mariani, M., & Borghi, M. (2021). Customers' Evaluation of Mechanical Artificial Intelligence in Hospitality Services: A Study Using Online Reviews Analytics. *International Journal of Contemporary Hospitality Management*, 33(11), 3956-3976. https://doi.org/10.1108/IJCHM-06-2020-0622

Marković, S., Janković, S. R., & Zubović, V. (2020). The Impacts of Robots and Artificial Intelligence on Service Quality in the Hotel Industry. Balk. J. *Emerg. Trends Soc. Sci*., 3(2), 163–170. https://doi.org/10.31410/Balkans.JETSS.2020.3.2.163-170

Mihas, P. (2023). Qualitative, Multimethod, and Mixed Methods Research. *International Encyclopaedia of Education*. 4th ed. https://www.sciencedirect.com/topics/social-sciences/thematic analysis

Ningi, A. I. (2022). Data presentation in qualitative research: The Outcomes of the Pattern of Ideas with the Raw Data, *International Journal of Qualitative Research*, 1(3), 196-200. https://doi.org/10.47540/ijqr.v1i3.448

Pappas, N., & Glyptou, K. (2021). Accommodation Decision-Making During the COVID-19 Pandemic: Complexity Insights from Greece. *International Journal of Hospitality Management*, 93, 102767. https://doi.org/10.1016/j.ijhm.2020.102767

Pappas, N., Caputo, A., Pellegrini, M. M., Marzi, G., & Michopoulou, E. (2021). The Complexity of Decision-Making Processes and Iot Adoption in Accommodation SMEs. *Journal of Business Research*, 131, 573–583. https://doi.org/10.1016/j.jbusres.2021.01.010

PWC Nigeria. (2024). *Hospitality Outlook: 2019-2023*. https://www.pwc.com/ng/en/publications/hospitality-outlook.html

Singh, K.G. (2023). *Technological Determinism Theory (5 examples, pros and cons).* https://helpfulprofessor.com/technological-determinism-theory/

Steyn, E., & Hasnat, I. (2020). Surviving the COVID-19 Pandemic: How Technology is Getting the Tourism Industry Back on Its Feet in the USA. *In Digital Transformation and Innovation in Tour-ism Events* (pp. 171–183). London, United Kingdom: Routledge. https://doi.org/10.4324/9781003271147-21

Sunnihitha, K., & Priyanka, J. S. (2022). COVID Surveillance System Using Face Mask Detection with Body Temperature and Pulse Rate. *Journal of Positive School Psychology*, 5046–5054.

Tidd, J., & Bessant, J. R. (2020). *Managing innovation: Integrating Technological, Market and Organizational Change*. New York: John Wiley & Sons.

Tuomi, A., Tussyadiah, I., & Ashton, M. (2021). COVID-19 and Instagram: Digital Service

Innovation in Top Restaurants. In *Information and Communication Technologies in Tourism* (pp. 464–475). Berlin, Germany: Springer, Cham. https://doi.org/10.1007/978-3-030-65785-7_45

Yang, L., Henthorne, T. L., & George, B. (2020). Artificial Intelligence and Robotics Technology in the Hospitality Industry: Current Applications and Future Trends. *Digital Transformation in Business and Society*, 211–228. https://doi.org/10.1007/978-3-030-08277-2_13.