

ISSN 0974-763X

SOUTH ASIAN JOURNAL OF MANAGEMENT RESEARCH (SAJMR)

SPECIAL ISSUE

Volume 13, No. 2

April, 2023



**Chhatrapati Shahu Institute of Business
Education & Research (CSIBER)**

(An Autonomous Institute)

University Road, Kolhapur-416004, Maharashtra State, India.

SOUTH ASIAN JOURNAL OF MANGEMENT RESEARCH (SAJMR)

ISSN 0974-763X

(An International Peer Reviewed Research Journal)

Published by

CSIBER Press, Central Library Building

Chhatrapati Shahu Institute of Business Education & Research (CSIBER)

University Road, Kolhapur - 416 004, Maharashtra, India

Contact: 91-231-2535706/07 Fax: 91-231-2535708

Website : www.siberindia.edu.in Email : sajmr@siberindia.edu.in, sibersajmr@gmail.com



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South Asian Journal of Management Research (SAJMR)

Volume 13, No. 2

Special Issue

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Role of Artificial Intelligence (AI) In Hospitality Industry

Seema Jaipuria
Research Scholar,
Amity University, Rajasthan.

Prof. (Dr.) Sanjeeb Pal
Professor and Director,
Amity University, Rajasthan.

Dr. Yashwant Singh Rawal
Associate Professor,
Parul University, Gujarat.

ABSTRACT : In today's era technology has entered in almost all the segments and sectors of our life, being from watching movie to education, banking, hospitals, shopping, power houses, telephone, etc. Nowadays, technology has also changed the way we travel, the experiences and the modes of sharing those experiences. The new-age travelers are preparing their own itinerary by using technology and replacing the traditional one. Hotels are facing tough competition as all the information about the hotel, their rooms, other products and services offered along with rent and charges are just one click away from consumers. Like all other sectors, hotels are also undergoing a wide range of via platforms that are bringing travelers from different parts of the world together. They want and are ready to use technology, value-added services, conveniences and comfort to their guests which never happened in the past.

For hospitality industry, technology driven marketing, is not at all a new concept, principally determined by guest information viz. segment profile, online media involvement and inclinations. Artificial Intelligence (AI) has become the distinct advantage for conventional lodging industry in terms of upgrading hotel's reputation and income by enhancing client experience at another level. This paper examines the role of Artificial Intelligence (AI) in upgrading the Hotel service quality. It features different approaches to utilize AI in accomplishing the quality of services by overseeing guest experiences and client encounters via data analysis & integration and developing AI frameworks. Also, it emphasis on Artificial Intelligence in building up the hotel industry via cost saving, revenue generation and brand perception.

Keywords: Hospitality Industry, Artificial Intelligence, Service Quality, Guest Data.

Introduction

The rise of the internet usage has noticeably changed the way of traveling, making room reservations and other arrangements, as well as the manner the enterprises are doing business in tourism. Hotels have not left any stone unturned in today's immensely aggressive business environment, and a key weapon is technology. Technology has entered hotels too and is providing great results in term of business as well as services and satisfaction. Significant lodging players are augmenting their geological base for getting the raised demand, branding fiercely, initiating strategic partnerships. Globally lodging industry is observing a paradigm shift because of technological advancement. Service transformation by utilizing contemporary ideas and technology drove marketing is need of hour for hotel businesses. Social Platforms have given more data and more extensive decisions to the prospective hotel clients. is the way to consumer loyalty.

Artificial Intelligence (AI) is a part of computer science that enables the machines to perform the tasks usually done by humans and react like them. The term AI was coined by John McCarthy in the year 1956, who defined it as 'the science and engineering of making intelligent machines'. It took years to actually intelligent machines come into existence, perceive their environment, learn and take action. Artificial Intelligence learns from the mistakes happened in the past and seek to evolve themselves to accomplish in a better manner. This paper endeavors to survey the utilization of AI in lodging industry and to discover its effect on service quality and advancement.

Objectives And Research Methodology

The study is based on secondary data collection technique that includes review of published research papers, internet database, articles, tourism management books and magazines, AI experts' web articles that contains relevant data regarding the study.

The objectives of this study are:

- To recognize the applications of AI in Hospitality Industry.
- To analyze the role of AI in enhancing Service Quality of Hotel.
- To identify the impact of AI on development of Hotel Industry.

Review Of Literature

Many researchers such as Gabbie and O'Neill (1997), Juwaheer T. D. (2004), Lau et al. (2005), Marković S. and Raspor S. (2010), Bostanji G.M.A (2013), Antoneta and Charles (2014) have studied service quality of hotels from several outlook like dimensions of service quality, its effect on customer loyalty and satisfaction, quality gaps and other affecting factors.

The inception of AI and robotics in the world of human and economy is anticipated to have cardinal inferences for the nature, structure and work conditions, and as a result, for HRM in serving organisations to captivate and hold on the talent (Colbert et al., 2016). Ivanov and Webster (2017) carried out a financial analysis of deploying of robots, AI and service automation. AI connects intelligence to the hotel industry via AI-enhanced tourism and hospitality operations and administration systems, which has further redefined the hospitality industry (Lai and Hung, 2018). AI has reshaped the means of tourism and hoteling by changing the traditional system, as the technological advancements have enabled the customers to access authentic and precise data which allows them to personalize their demands, make bookings and acquire hospitality products and services straight via technological platforms, instead of dealing with a hotel or travels agent (OECD, 2018; Zlatanov and Popescu, 2019; Buhalis, 2020). It is more affordable and convenient to book and travel through AI, along with making services and prices more standardized, leading to create a competitive advantage in the hotel and tourism industry. It is now about how much of intelligence and data are gathered from technological platforms (Lai and Hung, 2018).

AI provides service transformation in conveying personalized services, as AI-enhanced smart services and robotics like maibots, chatbots and cobots are used to extend human intelligence along with physical proficiency (Cain et al., 2019; Zlatanov and Popescu, 2019; Belias and Varelas, 2019; Ivanov and Webster, 2019). By sleeking the services, validating the reduction of errors, refining the pace of decisions and services, recognizing demand signals, recognizing the guests by their names via facial recognition technique, forecasting guest demands, imparting real-time language translation application to interact with customers globally and delivering interactive virtual along with physical assistance (Ivanov and Webster, 2017; OECD, 2018; Cain et al., 2019; Ivanov and Webster, 2019). Prentice et al. (2019) found that providing services with AI-enhanced technologies in the hotel and tourism industry remarkably impacts employee performance, but not on their turnover, and hence implies that AI can amplify employee productiveness. Prentice et al. (2020) further illustrated that AI service quality has notably contributed to overall service quality in the hotel and tourism industry via employee service quality which calls for a better comprehension of how AI-enhanced technologies can impact service quality and guest satisfaction in the hotel and tourism industry in relation to employee outcomes like employee recruitment, detainment and quality of service.

Role Of AI In Enhancing Hotel Service Quality

The quality of services in hospitality is very important for competitive advantage in terms of guest satisfaction and expanding the word of mouth positively offline as well as online. The 5 Gaps service quality model differentiate the guest expectation with his perception. AI-enhanced techniques in hotel will positively impact the guest perceptions for 5 Service Quality dimensions in the following ways:

- **Tangibility:** Tangibility is associated with the facilities provided physically, sophisticated tools and equipment and employee appearance. AI enabled valet using smart phones can restore the traditional check-in check-out further eradicating the standby at receptions. By deploying facial recognition technique to understand guest arrival, valet can assign the room having guest preferences and can download room key to his smart phone. Many hotels are nowadays using robots for assisting guests regarding check-in check-out like Henn Na Hotel at Tokyo.
- **Reliability:** Reliability is associated with punctuality, the willingness to unravel problems, the kind of services provided and the accuracy of maintaining records. Guests should have the trust that the AI enabled robots can be used for room-services assuring the prompt delivery. Hotels deploying robots on the floor for providing room services have an advantage of allowing hotel staffs to cater other needs of the guests. It has been struggleful to provide good services via traditional wireless networks in large resorts, but now AI-enabled wireless networks provide consistent and reliable services along with troubleshooting the problems. The feature of predicting potential maintenance problems allows workflow to be smooth thus increasing the dependability of this service.
- **Responsiveness:** It relates to speedy delivery of services thus minimizing the waiting time. The chat bots that are based on the Natural Language Processing (NLP) technique can understand the hotel guests' stress coming from different countries, which allows quick delivery of service. Artificial Intelligence algorithms can forecast expected duration of delivery of services. Guests can easily get prompt and precise answers to their queries.
- **Assurance:** It reveals the reliability, courtesy of hotel employee, guest security and aids to employee for outstanding services from hotel patrons. AI can scrutinize the pattern of footfall of hotels and other data to further make decisions related to the staff demand. It will end in prompt delivery of service and optimum human resource utilization. Well prepared and informed employee will always be available stress-free during peak hours and peak seasons. AI-enhanced closed-circuit television (CCTV) are frequently reinforced with evolving object and face recognition. Surveillance camera feeds observed by AI would distinguish the expected dangers and advise the experts for prompt action.
- **Empathy:** This dimension deals with the customization of services, solitary attention and guest convenience. For customized advertising and offers, AI empowered online ads network and social media feeds based on user statistics are now being used, as an illustration video suggestion on you-tube, online lodging promotions as for guest's travel reservations or close by things advertisements with reference to his hotel reservation. In addition to, AI also enables hotels to customize the reward program. The AI voice assistants are beneficial for senior citizens, special attention guests to make reservation queries, to discuss appropriate amenities, to instruct room service, prices, offers and promotions and even for the guests on the go. For example, there are virtual butlers like 'Rose' of Cosmopolitan Hotel and 'Edward' of Edwardian Hotels in Las Vegas.

Role of AI In Development Of Hotel Industry

- **Minimizing Cost-** According to the National Grid, the equipments related to energy consumes around 10% of total hotel revenue. Guest's presence as well as preferences can be detected intelligently and accordingly the equipments can be activated or deactivated thus reducing energy and increasing guest's comfort. The supply chain management systems when enabled with AI can make sure the procurement of materials of right quality and quantity, for rational prices at the right time also ensuring the efficient performance of services.
- **Increasing Revenue-** Customized offerings with solicitous touches like a guest's preferred pillows, mattresses, toiletries, newspaper, television, room views and bathroom settings help keeping guest repetition. Special provisions by following preferences and desires and designing personalized service experience like lavish linen, luxury automobile will contribute additional income. AI also suggests dynamic pricing of the hotel by analyzing patterns of various events taking place and also their impact. AI is used by Airbnb to suggest the pricing strategies to its hosts. Also, it allows to style marketing strategies during such events to maximize occupancy level. AI-enhanced booking engines and hotel websites can escalate the rate of conversion by alternating exhibit options. When a guest searches for a room and a room rate on booking engine then AI recognizes that when the room rates are displayed in descending order then the guests neglect or avoid making reservation but when the room rates are displayed in ascending order the room reservation is higher. Therefore, the system understands that which is the best suitable technique of exhibiting the room rates and informs the hotel employees about the same or accordingly exhibits the room rates by itself.
- **Maximizing ROI (Return on Investment)-** In order to provide high quality of service, the hotels prefer channelizing their resources to get the best return. AI-enabled systems notifies and reminds the hotel employees about the upgrades, and if any replacement or repair work is required for any equipment or property. It analyzes the online reviews, feedback from the guests, occupancy report, etc. to help the hotel make correct strategic decisions so as to achieve maximum returns.
- **Reputation Management-** Artificial Intelligence can scrutinize all the online images, videos, reviews, blogs from the social platforms and hotel websites and can present the real image of the hotel thus guiding the hotel staffs to respond to the negative reviews and take correct decisions on improvement path.

Limitation

This study shows an outline of utilization of Artificial Intelligence in the Hotel Industry; nonetheless, it requires an empirical evaluation of effect of Artificial Intelligence applications on Service Quality of hotel, guest acceptance of AI frameworks, employee awareness, the effect of AI on the financial matters of the hospitality sector and the previously mentioned impacts of AI on the work environment and the replacement of humans.

Conclusion

Artificial intelligence is now changing the conventional prospect of hotel and tourism services with the ability to sleek the processes, providing valuable insights along with optimizing guest's experiences. AI is bringing the new way of responsive, reliable, guest-centric and innovative hospitality to gain better quality of services and overall development of hotel industry. With innovation in a consistent condition of transition and continually opening new chances to improve consumer loyalty and gear up internal efficiency, hotels can stay one step up on rivalry by leveraging their technology.

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