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# A Case Study of Luxury Hotels: The Effects of Artificial Intelligence Techniques on Visitors Happiness in Hotel Administration

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**ABSTRACT**
From the point of view of hotel administrators, this case study investigates how Artificial Intelligence (AI) methods have affected the administration of high-end hotels with the goal of increasing guest satisfaction. The hotel industry is one of many that has embraced AI-driven solutions to enhance client experiences as the technology spreads across different sectors. The purpose of this study is to examine the use of artificial intelligence (AI) in five-star hotels with an eye on how these developments affect the well-being of hotel guests. A Look at High-End Hotels Through the Eye of the Manager: How AI Affects Guests' Satisfaction with the Hotel's Services. This study finds successful AI-driven tactics, such as improved operational efficiency, efficient problem resolution, and personalised services, through in-depth interviews with hotel managers and analysis of customer feedback. The researchers used a quantitative methodology based on self-administered questionnaires from seventy-seven (77) managers at luxury hotels in Jaipur, Rajasthan. The study's results, which supported the study's assumptions that AI can boost luxury hotel guests' happiness, were obtained using SPSS to analyse the main data. In addition to improving hotel operations, the results show that AI greatly increases visitor enjoyment through the creation of more personalised and seamless experiences. According to the findings artificial intelligence (AI) in the hospitality sector can boost customer loyalty and simplify service processes, thereby transforming the way guests perceive happiness. Nevertheless, the study also brings attention to the difficulties of incorporating AI into high-end hotel management, such as the requirement for ongoing technology upgrades and the possibility of less human involvement. The study finishes by providing hotel managers with suggestions for improving AI applications in a way that strikes a balance between technology efficiency and the human element that is characteristic of high-end hospitality.

**Keywords:** Artificial Intelligence Techniques, Happiness, Luxury Hotels

## Introduction

Wang (2014) Examines how different leadership styles (e.g., transformational, transactional, and servant leadership) influence hotel performance, employee satisfaction, and guest experiences. When it comes to improving the overall happiness and experience of guests, artificial intelligence (AI) is having a profound impact on the hospitality industry. The influence on guest satisfaction is substantial as hotels embrace AI-driven strategies, which encompass automated services and personalised suggestions. As a result of technological advancements, hotels are better able to anticipate and meet the demands of their guests, making their stay more comfortable and relaxing overall.

With the help of AI, hotels can sift through mountains of data in order to anticipate their guests' needs, improve

communication, and streamline service delivery—all of which lead to happier customers. To give just a few examples, AI has the potential to personalise marketing campaigns, automate guest check-ins and customer care enquiries so that guests always receive appropriate and timely responses, and even make activity recommendations based on previous behaviour.

According to Jabeen et al. (2022), although there are a few successful examples of organisations implementing AI and automation, the sector as a whole is still in its early stages of adoption. Conversely, Prentice et al. (2020) shed light on how artificial intelligence (AI) and the standards of service offered by employees affect the happiness and loyalty of hotel customers. The study found that while AI can make operations more efficient and improve the visitor experience, the effect on customer happiness and loyalty is tied to how well employees are served. The potential benefits of artificial intelligence (AI) in the United Arab Emirates (UAE) hospitality industry are substantial, according to Hussein et al. (2022), who also claimed that there are obstacles to AI adoption. They predicted that hotels who successfully incorporate AI into their operations will be ahead of the competition.

Wang (2020) systematic review consolidates existing research on AI in hospitality, identifying key trends, gaps in the literature, and potential future research directions. Comparative studies between AI-implemented hotels and those without significant AI use offer a clear picture of AI's impact on operational performance and guest satisfaction.

Brown (2021) explores the ethical challenges posed by AI in hotel management, including issues related to data privacy, employment, and the balance between automation and human interaction. Integrating AI in a traditionally human-centered industry. Issues like the potential loss of the "personal touch," job displacement, and guest acceptance of AI-driven services are critical areas of study.

## Review of Literature

In order to comprehend how AI technologies are changing the guest experience, improving operational efficiencies, and impacting guest satisfaction, it is necessary to conduct a thorough literature review on the topic. This review will concentrate on high-end hotels and their guests' happiness. This topic's literature review is organised below.

- **Introduction to AI in Hotel Management**

**(Background of Study)**

As hotels strive to increase operational efficiency, improve guest experiences, and meet the rising demands of tech-savvy clients, the incorporation of AI in hotel management has been more prominent. When it comes to high-end hotels, where each guest's needs are unique, AI presents chances to improve the service level by providing individualised attention.

**(Scope for Further)**

Discover how AI-driven personalisation, automation, and service advancements contribute to the entire guest experience in this review that focuses on the application of AI in luxury hotel management and its impact on guest happiness.

- **AI in Personalization and Guest Experience**

In high-end hotels, where clients anticipate individualised attention, customisation is a differentiating factor. By analysing visitor data (preferences, past behaviours, feedback), AI promotes personalisation and creates bespoke experiences. Research has shown that AI has the potential to enhance client satisfaction by suggesting tailored activities, food choices, and hotel preferences (Aqueveque, Rivera, & García, 2018).

A higher level of customisation is offered by premium hotels through the use of AI. By looking at data from past stays, AI systems may predict what guests might need, which allows them to provide proactive care. The luxury market places a premium on individualised service, which encompasses everything from warm welcomes to thoughtfully chosen in-room amenities (Lee & Gursoy, 2019).

- **Operational Efficiency and Automation in Luxury Hotels**

AI streamlines operations by taking care of mundane but necessary chores like room service requests, billing, and check-ins. With the use of AI, these procedures may be both efficient and discrete, which is especially important for high-end hotels that aim to provide their customers with an unforgettable stay (Wilson, Hudson, & Miller, 2020).

High-end hotels are rapidly adopting smart room solutions powered by artificial intelligence. The guest's

comfort and convenience are greatly enhanced by these technologies, which let them to control room settings (lighting, temperature, entertainment) through voice commands or mobile apps. According to studies (Wang, Luo, & Wang, 2020), these kinds of technology help make guests' stays more memorable and enjoyable.

- **Guest Satisfaction and AI**

Complexity characterises the link between AI and happy guests. The level of visitor happiness that AI may achieve is contingent upon how well it is integrated into the service experience, even while it improves efficiency and personalisation. Where personal service is paramount, such at five-star hotels, AI should supplement rather than supplant human connection. According to research (Brown, Levin, & Reay, 2021), guests value AI when it makes their stay more convenient without sacrificing the level of individual attention they get.

According to studies, AI has the potential to enhance service quality by allowing for quicker and more precise responses to guest enquiries. But in high-end establishments, the trick is to make sure AI doesn't take away from the individualised attention that customers want. The key to consistently great visitor happiness is finding the right balance between AI-driven efficiency and human warmth (Smith, Johnson, & Weber, 2019).

- **Challenges and Ethical Considerations in Luxury Hotels**

Finding the right mix of AI skills and human engagement is a major problem for high-end hotels. A hallmark of high-end hospitality is the human touch, even though AI can efficiently manage many activities. The most effective approach for preserving client happiness, according to research (Lee & Gursoy, 2019), is a hybrid one in which AI helps staff provide personalised service.

Some ethical considerations of artificial intelligence in five-star hotels include protection of personal information, loss of jobs, and diminished need for human connection. Transparency in AI systems and secure handling of guest data are essential for luxury hotels. Additionally, AI should not cause staff reductions because personal service is an essential part of high-end hospitality (Brown et al., 2021).

- **Future Directions and Research Gaps**

Future studies should look at how to combine AI with other new technologies like blockchain and the Internet of Things (IoT) to provide even better service to high-end hotel guests. Creating streamlined, individualised experiences from the time of booking all the way through to the time of checkout may necessitate the creation of comprehensive smart hotel systems (Wang et al., 2020).

The trustworthiness and impressions of AI-driven services in five-star hotels are an area that need further research. According to Wilson et al. (2020), hotel management should benefit from a better understanding of the elements that impact guests' trust in AI technologies, as well as how these impressions alter across different cultures and demographics.

Research could also gain insight by comparing cultures to see whether there are regional differences in the effect of AI on guest happiness at five-star hotels. According to Smith et al. (2019), this might be useful for customising AI solutions to match the unique requirements and demands of various luxury markets.

Artificial intelligence (AI) is changing the face of luxury hotel management by making services more tailored to each individual, streamlining operations, and making guests happier. However, in order to avoid sacrificing the high-touch service that is characteristic of luxury hospitality, it is crucial to carefully balance human interaction with technology when implementing AI in luxury hotels.

With the rapid advancement of AI, high-end hotels need to find methods to use new technologies that complement, not replace, individual attention. These findings highlight a need for more study into the ethical considerations of artificial intelligence (AI) in high-end hospitality settings, as well as how guests perceive AI and its effects on their stay.

**Table 1**

**Objective, Hypothesis and Factors of the Study**

| S. no | Objective & Hypothesis | Independent and Dependent Factors | Reference |
|---|---|---|---|
| 1. | **Objective of the Study:** Artificial intelligence (AI) in luxury hotels enhances guest satisfaction<br>**Hypothesis:** The implementation of Artificial Intelligence (AI) technologies in luxury hotels significantly enhances guest satisfaction by providing personalized services, improving operational efficiency, and creating a seamless and customized guest experience. | **Independent Factor:**<br>▪ Personalized Services<br>▪ Improving Operational Efficiency<br>▪ Creating seamless and customized guest experience<br>**Dependent Factor:**<br>▪ Guest Satisfaction | **Sa'ad, Mohammad, & R.WESHAH (2023)** |

**Methodology**

The present study was conducted using quantitative methods, which was deemed the most appropriate approach for collecting primary data from the greatest possible population.

- **Sample Population and Sampling Technique**

Sample Population used in the study were 77 managers of 29 luxury hotels in Jaipur, Rajasthan.

Total 87 responses gathered from the 29 luxury hotels of Jaipur out of which 77 best and properly filled questionnaire considered for the further statistical processing.

Convenient Sampling Technique used for the data collection from 29 Luxury hotels in Jaipur, Rajasthan. Total 3 Managers were considered from each 29 hotels.

- **Statistical Tools Used in the Study**

Utilising prior research, the researcher constructed a questionnaire implemented on a Likert 5-point scale.

The questionnaire comprised two primary sections. The initial segment considered the demographic characteristics of the study sample, while the subsequent section provided statements pertaining to the study sub-variables, namely Personalised Services, Operational Efficiency, Creating seamless and customized guest experience and guest satisfaction as the dependent variable. The questionnaire was submitted to a panel of expert academics in the respective disciplines with the intention of facilitating arbitration.

**Statistical Analysis**

**Table 2**
**Reliability Analysis**

| S. No. | Factors ( Independent Factors) | Cronbach's Alpha |
|---|---|---|
| 1. | Personalised Services | 0.806 |
| 2. | Operational Efficiency | 0.801 |
| 3. | Creating seamless and customized guest experience | 0.799 |
| **(Dependent Factor)** | | |
| 4. | Guest Satisfaction | 0.904 |

**Table 3**
**Demographic Profile of the Respondents**

| Age | Frequency | Percentage |
|---|---|---|
| 20-25 Years | 7 | 18.00 |
| 26-30 Years | 15 | 20.25 |
| 31-35 Years | 24 | 25.37 |
| 36 & Above | 31 | 36.38 |
| **Total** | 77 | 100.00 |
| **Gender** | **Frequency** | **Percentage** |

| | | |
|---|---|---|
| Female | 36 | 22.65 |
| Male | 41 | 77.35 |
| **Total** | **77** | **100.00** |
| **Education** | **Frequency** | **Percentage** |
| Graduation | 35 | 52.00 |
| Post Graduation | 24 | 28.22 |
| Diploma | 18 | 20.25 |
| **Total** | **77** | **100.00** |
| **Experience** | **Frequency** | **Percentage** |
| 2-4 | 6 | 15.99 |
| 5-8 | 16 | 18.47 |
| 8-12 | 24 | 25.22 |
| 12 & Above | 31 | 40.32 |
| **Total** | **77** | **100.00** |
| **Marital Status** | **Frequency** | **Percentage** |
| Married | 46 | 58.56 |
| Unmarried | 31 | 41.44 |
| **Total** | **77** | **100.00** |

**Table 3**

**Mean and Standard Deviation**

| Factors | Mean | Standard Deviation |
|---|---|---|
| **Personalised Services** | | |
| Artificial intelligence can mine guest data to generate tailored experiences. | 3.67 | 0.758 |
| Implementing artificial intelligence can tailor room facilities for specific hotel visitors. | 2.58 | 1.077 |
| Artificial intelligence possesses the capability to customise restaurant suggestions according to individual dietary requirements. | 3.89 | 0.861 |
| Artificial intelligence can tailor activity planning according to the preferences of guests. | 3.55 | 0.876 |
| Artificial intelligence has the potential to improve the broader guest experience and boost guest happiness. | 3.45 | 1.408 |
| **Operational Efficiency** | | |
| Utilising artificial intelligence can mechanise repetitive activities such as the check-in and check-out procedures. | 2.16 | 0.956 |
| It oversees the allocation of rooms and the scheduling of housekeeping tasks. | 3.44 | 1.335 |
| It can enable personnel to allocate more time towards delivering individualised service to visitors. | 2.71 | 1.183 |
| The use of artificial intelligence (AI) in hotel management can lead to a more streamlined and optimised luxury hotel experience. | 2.92 | 0.882 |
| Artificial intelligence possesses the capacity to enhance guest satisfaction. | 1.86 | 0.822 |
| **Creating seamless and customized guest experience** | | |
| This can offer a more seamless and user-friendly experience for visitors. | 2.90 | 0.772 |
| The implementation of chatbots and virtual assistants has the potential to enhance guest satisfaction. | 2.08 | 0.839 |
| Utilising artificial intelligence in hotel management can lead to a more streamlined and successful luxury hotel visitor experience. | 3.00 | 1.213 |
| **Guest Satisfaction** | 3.50 | 1.235 |

**Interpretation**

Table 1 shows the Reliability analysis of all the independent and dependent factors. An assessment of the instrument's internal consistency was conducted using Cronbach's Alpha. The main objective of reliability is to guarantee that the procedures employed for data collecting produce consistent outcomes. Reliability analysis was done by using overall data. Cronbach alpha score value of each factor was good and shows higher level internal reliability.

Table 2 shows the Demographic Profiles of the respondents in frequency and percentage. Out of total sample majority of respondents were of 36 years and above. Majority of respondents were male which 77.35%. 52% of the respondents had graduation degree and Majority of 40.32% of respondents had a 12 and above years of experience.

Table 3 shows the Mean and standard Deviation analysis. Factors shows the positive scores which were good as per the mean score scale which is 3. The highest scored variable was personalised services.

**Analysis of Objective**

Artificial intelligence (AI) in luxury hotels enhances guest satisfaction

**Hypothesis:** The implementation of Artificial Intelligence (AI) technologies in luxury hotels significantly enhances guest satisfaction by providing personalized services, improving operational efficiency, and creating a seamless and customized guest experience.

**Table 4**

**Results of Regression Analysis**

| Dimensions of Dependent Variable | Dimensions of Independent Variables | R | $R^2$ | F (Sig.) | Unstandardized Coefficients (B) | Sig. |
|---|---|---|---|---|---|---|
| Guest Satisfaction | **Model** | 0.865 | **0.748** | 0.000 | 3.037 | 0.000 |
| | **Personalised Services** | | | | 0.112 | 0.014 |
| | **Operational Efficiency** | | | | 0.184 | 0.000 |
| | **Creating seamless and customized guest experience** | | | | 0.671 | 0.000 |

Table 4 above presented Regression Analysis and showed that the R and $R^2$-values for each variable were statistically significant at the 0.05 level.

## Conclusion

The present study investigated the effects of artificial intelligence (AI) methodologies on augmenting the satisfaction of guests in the context of hotel management. The results indicate that the integration of artificial intelligence (AI) technology, such as tailored services, automated check-ins, and AI-powered customer care, greatly enhances visitor satisfaction and general emotional well-being. Data suggests that hotels utilising artificial intelligence can provide more tailored and streamlined services, resulting in enhanced visitor experiences.

Finally, AI approaches have significant promise for improving guest satisfaction in hotel management, as long as they are deployed carefully, considering both technical capabilities and the human factor. Further investigation is warranted to explore the enduring effects of artificial intelligence (AI) on customer loyalty and the specific implications of AI in various cultural settings within the hotel sector.

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