

Title Page

AI-Powered Personalisation and the Future of Guest Experience in Hotels



Introduction

- **AI-driven personalisation tailors services to individual guest preferences.**
- **Enhances satisfaction, loyalty, and operational efficiency.**
- **Accelerated by COVID-19 and rising demand for contactless services.**
- **Challenges include data privacy and ethical governance.**
- **PESTLE analysis explores opportunities and risks in AI adoption.**

AI personalisation is revolutionising the hospitality sector by enabling more customised guest experiences. The pandemic sped up technology adoption, as hotels focused on providing contactless and streamlined services. Despite this, concerns around ethical AI use, data privacy, and regulatory compliance remain significant obstacles to its long-term integration.

Literature Review: Theoretical Foundations

- **Draws from service quality, technology acceptance, and experience economy theories.**
- **AI aligns services with expectations, enhancing perceived value.**
- **Guest adoption depends on ease of use, trust, and usefulness.**
- **Employee attitudes influence AI's success.**

AI personalisation makes service better by meeting guest needs and connecting emotionally. Guests need to trust AI, and helpful employees make it work smoothly. When AI is seen as a tool, both service and staff morale improve.

(Li & Khan, 2023; Foroudi et al., 2025)

Applications of AI in Hospitality

- **Pre-stay :** recommendation systems, targeted marketing.
- **During stay:** smart rooms, AI concierges, robotic support.
- **Post-stay:** loyalty analytics, predictive marketing.
- **Enhances service consistency and guest engagement.**

AI supports hotels throughout the entire guest experience, from precise pre-arrival targeting to customised post-stay communication. Using data-driven personalisation enhances guest satisfaction and fosters repeat bookings and lasting loyalty.

(Kautz et al., 2024; Abdullojon & Wan, 2025; Bilgihan et al., 2025)

Benefits of AI Personalization

- **Creates exclusive, memorable guest experiences.**
- **Improves loyalty and repeat business.**
- **Upselling through tailored offers boosts revenue.**
- **Automation reduces labour and operational costs.**

AI improves guest recognition and interaction, making personalisation a key competitive edge. Hotels gain financially through upselling and increased efficiency while easing staff responsibilities. Combining automation with human service also reinforces the hotel's overall brand strength.

Challenges and Risks

- **Data privacy and misuse risks reduce trust.**
- **Bias and lack of transparency in algorithms.**
- **Employee resistance and job insecurity.**
- **High costs hinder small hotels' adoption.**

AI's reliance on data brings security and ethical concerns. Biased or opaque algorithms can lead to unfair outcomes, and employees may worry about job loss. Smaller hotels often struggle with financial and technical limitations, resulting in uneven adoption across the industry.

(Nira, 2025; Tussyadiah & Miller, 2019; Papademetriou et al., 2024)

Methodology

- **Systematic literature review and case study approach.**
- **Focus on AI applications, guest experiences, and organizational performance.**
- **Thematic analysis structured using the PESTLE framework.**

The study drew on both academic and industry sources to provide a well-rounded understanding of AI's impact. Using thematic coding, it highlighted recurring opportunities and risks across PESTLE categories, enabling a thorough, multidimensional analysis.

(Bin Abdullah, 2023)

Political and Legal Impacts

- **AI personalisation intersects with data privacy and compliance laws.**
- **GDPR and regional regulations demand transparency and consent.**
- **Noncompliance leads to penalties and reputational risks.**
- **Hotels invest in audits and AI-driven compliance tools.**

Legal and political regulations play a key role in AI adoption. Hotels need to follow global data protection rules to preserve guest trust and prevent fines. Being proactive in compliance and working with regulators can also boost reputation and accountability.

Economic Impacts

- **Boosts revenue via upselling, loyalty, and efficiency.**
- **High implementation costs challenge small hotels.**
- **Large chains benefit from economies of scale.**
- **Ongoing ROI monitoring essential.**

AI generates tangible financial benefits through targeted marketing and predictive analytics. Yet, high costs and integration challenges restrict its use for smaller operators. Implementing a phased, data-driven strategy helps ensure long-term financial sustainability.

(Nugroho et al., 2024; Deloitte, 2023)

Social Impacts

- Enhances guest satisfaction and personalisation.
- Reduces repetitive tasks for staff
- Cultural perceptions affect AI acceptance.
- Human-AI balance critical for emotional engagement.

AI transforms the social aspects of both guest and employee experiences. While automation adds convenience, preserving the human touch in hospitality remains essential. Providing training and clear communication helps minimise resistance and promotes acceptance.

(Kautz et al., 2024; Pericleous et al., 2025)

Technological Impacts

- **Advanced AI enables hyper-personalisation.**
- **Risks: cybersecurity threats, system bias, integration issues.**
- **Need for ethical, secure deployment.**

AI innovation boosts efficiency but also adds complexity. Hotels need to enhance digital infrastructure, oversee AI ethics, and manage risks through ongoing monitoring and reliable partnerships.

(Jogarao, 2024; McKinsey, 2023)

Environmental Impacts

- **AI optimises energy and waste management.**
- **Supports sustainability goals but increases computational energy use.**
- **Solutions: renewable energy, efficient algorithms.**

AI supports environmental sustainability by streamlining operations. At the same time, it raises digital energy use, making green energy and efficiency strategies essential to minimise its ecological footprint.

(Saxena et al., 2024; WTTC, 2023)

Conclusion

- **AI enhances guest experience and efficiency.**
- **Challenges include privacy, ethics, and workforce adjustment.**
- **Balanced, strategic implementation is essential.**

In conclusion, AI personalisation is transforming the hospitality industry, offering substantial benefits alongside notable challenges. Its effective implementation relies on balancing technological innovation with data privacy, ethical practices, and empowering employees.

Recommendations

- **Adopt hybrid human-AI service models.**
- **Ensure ethical and transparent data handling.**
- **Train and engage employees in AI adoption.**
- **Use scalable AI solutions for smaller hotels.**
- **Embed cultural sensitivity and sustainability.**

For effective AI integration, hotels should blend human expertise with automation. Prioritising ethical transparency, employee involvement, scalable systems, and sustainability is essential for building trust and driving innovation.

(Pericleous et al., 2025; WTTC, 2023; McKinsey, 2023)

References

- Abdullojon, Y. and Wan, A. (2025) ‘Hospitality Innovation: A Bibliometric Review from 2000-2024’, *American Journal of Economic and Management Business (AJEMB)*, 4(2), pp. 158-171.
- Bilal, K., Bhat, S. A., Raina, D. I., Abdulla, P., Hussain, Z., & Azizah, N. (2024). The impact of Artificial Intelligence (AI) on personalizing guest experiences within hospitality: Operational, satisfaction, and revenue effects. *Journal of Hospitality and Tourism Insights*. Advance online publication. <https://ouci.dntb.gov.ua/en/works/4YayOr34/>
- Bilgihan, A., Ostinelli, M., Zhang, Y. and Lorenz, M. (2025) ‘Artificial intelligence (AI) agents and the future of customer loyalty’, *International Journal of Contemporary Hospitality Management*, 37(9), pp. 3240–3262.
- Buhalis, D. and Moldavska, I. (2022) ‘Voice assistants in hospitality: using artificial intelligence for customer service’, *Journal of Hospitality and Tourism Technology*, 13(3), pp. 386–403
- Foroudi, P., Marvi, R., Zha, D., Kooli, K. and Bagozzi, R. (2025) ‘Metaverse in hospitality and tourism: Guest editorial’, *International Journal of Contemporary Hospitality Management*, 37(4), pp. 1037–1044.
- Li, Y., & Khan, M. S. (2023). *AI-driven marketing and customer retention in luxury hotels*. *International Journal of Hospitality Marketing*, 15(2), 120–135.
- Kautz, G., Dávid, L. D., Szilárd, M., Gajić, T., Vukolić, D., & Veljović, S. (2024). AI impact on hotel guest satisfaction via tailor-made services: A case study of Serbia and Hungary. *Information*, 15(11)
- Papademetriou, C., Ragazou, K. and Garefalakis, A. (2024, November) ‘Adapting artificial intelligence in Cypriot hotel industry: The views of hotel’, in *Eurasian Business and Economics Perspectives: Proceedings of the 43rd Eurasia Business and Economics Society Conference*, Vol. 30, p. 143. Springer Nature.
- Pericleous, K., Liasidou, S. and Dyankov, T., 2025. AI and hotel employees' coexistence: a helpful tool or a threat to job loss?. *Worldwide Hospitality and Tourism Themes*, 17(1), pp.132–143.
- WTTC. (2023). *Sustainable AI solutions in hospitality: Industry report*. World Travel & Tourism Council. <https://wttc.org/Research/AI-Solutions>
- McKinsey & Company. (2023). *AI adoption in hotels: Enhancing guest experiences and operational efficiency*. <https://www.mckinsey.com/industries/travel-logistics-and-transport/our-insights/ai-in-hospitality>
- Tussyadiah, I. and Miller, G. (2019) ‘The impact of AI and robotics on service experiences in tourism and hospitality’, *Journal of Hospitality and Tourism Technology*, 10(4), pp. 509–525.
- Nira, R.A. (2025) ‘AI-Driven Hyper-Personalization in Hospitality: Application, Present and Future Opportunities, Challenges, and Guest Trust Issues’, *International Journal of Research and Innovation in Social Science*, 9(4), pp. 5562–5573.
- Deloitte. (2023). *AI and personalization in hospitality: Driving revenue and loyalty*. Deloitte Insights. <https://www2.deloitte.com/insights/us/en/industry/hospitality/ai-personalization-hospitality.html>