



ADOPTION OF AI FOR EFFECTIVE TOURISM AND HOSPITALITY PRACTICE AND MANAGEMENT: THE PROSPECT AND CHALLENGES

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ABSTRACT

This study explores the adoption of Artificial Intelligence (AI) in tourism and hospitality practice and management, highlighting both prospects and challenges. AI enhances efficiency through automation, personalization, and real-time data analytics, transforming customer experience and service delivery. Technologies like chatbots, smart assistants, and AI-driven analytics are becoming integral to operational strategies. However, issues such as high implementation costs, data privacy concerns, and workforce disruption pose significant barriers. The research emphasizes the need for strategic planning, ethical frameworks, and staff training. By addressing these challenges, AI can sustainably enhance competitiveness and innovation in the sector. The study concluded that effective adoption demands a balance between innovation and human touch. Sustainable integration requires robust strategies, training, and policy support. The study also recommended that leadership should champion AI adoption by setting clear visions, involving stakeholders, and managing cultural shifts in the organization.

KEYWORD: Artificial Intelligence, Tourism And Hospitality Practice, Management: The Prospect, Challenges

INTRODUCTION

The integration of artificial intelligence (AI) into tourism and hospitality practices marks a transformative phase in the evolution of service delivery and management across these industries. As global markets recover from the disruptions of COVID-19, AI technologies such as chatbots, facial recognition, robotic process automation, and predictive analytics are increasingly being deployed to enhance customer experience, streamline operations, and ensure safety. These innovations offer opportunities for tailored services and real-time responsiveness, thus redefining traditional hospitality paradigms (Sharma, 2024; Kong, 2024). With tourism being a highly dynamic and consumer-centric industry, the shift toward AI is not merely technological—it is strategic and



deeply customer-oriented. The integration of artificial intelligence (AI) into tourism and hospitality practices marks a transformative phase in the evolution of service delivery and management across these industries. As global markets recover from the disruptions of COVID-19, AI technologies such as chatbots, facial recognition, robotic process automation, and predictive analytics are increasingly being deployed to enhance customer experience, streamline operations, and ensure safety. These innovations offer opportunities for tailored services and real-time responsiveness, thus redefining traditional hospitality paradigms (Sharma, 2024; Kong, 2024). With tourism being a highly dynamic and consumer-centric industry, the shift toward AI is not merely technological—it is strategic and deeply customer-oriented.

However, while AI presents numerous prospects, the adoption process is layered with complex challenges. These include ethical concerns regarding privacy and data security, workforce displacement due to automation, high implementation costs, and the digital divide among service providers (Yin et al., 2024; van de Wetering, 2024). Moreover, the success of AI integration hinges not only on technological readiness but also on managerial awareness, employee adaptability, and cultural sensitivity to automation in service contexts. The push toward AI adoption must be accompanied by frameworks that address organizational change and human-machine collaboration, especially in service-heavy sectors like tourism and hospitality.

Recent scholarly work has underscored the need for strategic alignment and change management in order to successfully navigate AI implementation. For instance, studies have found that leadership styles and employee attitudes significantly influence AI assimilation in hospitality settings (Kong, 2024). Furthermore, applications such as AI-based machine translation tools are revolutionizing communication for international travelers, though travelers' trust and perceived reliability remain areas of concern (Abashidze & Rancati, 2025). The integration process must therefore prioritize not only technological sophistication but also user-centric design, training, and continuous improvement loops.

As tourism destinations and service providers continue to embrace digital transformation, future research must bridge the gap between technological capabilities and socio-organizational feasibility. The long-term value of AI in tourism and hospitality lies not only in its efficiency but also in its capacity to support personalized, ethical, and resilient service ecosystems. By critically examining the dual facets of opportunity and limitation, stakeholders can better position themselves to harness AI's full potential while mitigating risks. (Sharma, 2024; Yin, 2024; Abashidze & Rancati, 2025).

CONCEPT OF AI

Artificial intelligence (AI) refers to computer systems capable of performing complex tasks that historically only a human could do, such as reasoning, making decisions, or solving problems. Artificial intelligence is a field of science concerned with building computers and machines that can reason, learn, and act in such a way that would normally require human intelligence or that involves data whose scale exceeds what humans can analyze. Artificial intelligence (AI) is the simulation of human intelligence processes by machines, especially computer systems (Craig, 2024).

As mentioned by Copeland (2025), artificial intelligence (AI) is the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning,



generalize, or learn from past experience. Since their development in the 1940s, digital computers have been programmed to carry out very complex tasks.

According to Glover (2025), artificial intelligence (AI) is a branch of computer science that aims to build machines capable of performing tasks that typically require human intelligence. AI enables machines to simulate human abilities, such as learning, problem-solving, decision-making, and comprehension. Common applications of AI include speech recognition, image recognition, content generation, recommendation systems, and self-driving cars. Artificial intelligence (AI) is technology that allows machines to simulate human intelligence and cognitive capabilities. AI can be used to help make decisions, solve problems, and perform tasks that are normally accomplished by humans.

CONCEPT OF TOURISM

Tourism is a social, cultural, and economic phenomenon that entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes. These people are called visitors (who may be either tourists or excursionists; residents or non-residents), and tourism has to do with their activities, some of which involve tourism expenditure.

As defined by Walton (2025), tourism is the act and process of spending time away from home in pursuit of recreation, relaxation, and pleasure while making use of the commercial provision of services. As such, tourism is a product of modern social arrangements, beginning in Tourism is the activities of a person traveling to a place outside his or her usual environment for less than a specified period of time and whose main purpose of travel is other than the exercise of an industry remunerated from within the place visited (Yadav, 2023). Tourism is traveling for pleasure or business; it is also the theory and practice of touring, the business of attracting, accommodating, and entertaining tourists, and the business of operating tours (Santhanaraj, 2022).

CONCEPT OF HOSPITALITY PRACTICE

Hospitality practice refers to the dynamic and multifaceted operations, behaviors, and principles that govern service delivery in the hospitality industry, encompassing hotels, restaurants, tourism services, and event management. It is rooted in the fundamental human value of hosting guests with warmth, generosity, and professionalism. Contemporary hospitality practice goes beyond basic service provision; it emphasizes guest experience, cultural sensitivity, emotional labor, and the co-creation of value between service providers and clients (Lugosi, 2020). This conceptual shift reflects the growing influence of social, technological, and psychological factors in shaping customer expectations and service standards.

Modern hospitality practice integrates both tangible and intangible service components. On one hand, it involves operational efficiency, safety, hygiene, and logistics, while on the other hand, it requires emotional intelligence, adaptability, and personalization to meet diverse client needs (Park & Kincaid, 2021). Hospitality professionals are expected to be emotionally present, empathetic, and culturally aware, as the hospitality experience is significantly influenced by interpersonal interactions. The COVID-19 pandemic further redefined hospitality by placing new emphasis on contactless services, digital innovation, and crisis resilience (Baum, 2020). These adaptations highlight how hospitality practice is responsive to global changes, requiring continuous learning and innovation.



Moreover, the evolving concept of hospitality embraces sustainability, inclusion, and ethical service delivery. Recent scholarship advocates for a more responsible form of hospitality that respects local cultures, promotes environmental sustainability, and ensures equitable labor practices (Jones & Hillier, 2022). Thus, hospitality practice is no longer confined to service rituals but involves strategic thinking and ethical consideration. As the industry becomes more globalized and competitive, the role of hospitality practitioners is expanding to that of experience curators and cultural mediators. In this context, hospitality practice becomes both an art and a science, essential for building memorable and meaningful guest experiences in a rapidly changing world.

CONCEPT OF HOSPITALITY MANAGEMENT

Hospitality management is the strategic and operational oversight of businesses within the hospitality industry, including hotels, resorts, restaurants, event planning, and tourism services. It involves managing human resources, finances, marketing, customer service, and sustainability initiatives to ensure optimal guest satisfaction and business performance. Central to hospitality management is the balance between service excellence and profitability, achieved through efficient resource allocation, staff training, and customer relationship management (Kim, Lee & Lee, 2020). In today's increasingly competitive and globalized marketplace, hospitality managers must also be agile, culturally competent, and technologically adept.

Recent trends in hospitality management reflect a shift towards digital transformation and data-driven decision-making. The integration of artificial intelligence, automation, and customer analytics has become essential for enhancing service delivery, predicting consumer behavior, and customizing guest experiences (Bilgihan, 2022). Furthermore, the COVID-19 pandemic significantly altered hospitality operations, requiring managers to implement health protocols, crisis communication strategies, and remote management tools (Giousmpasoglou, Marinakou & Zopiat, 2021). These developments emphasize that effective hospitality management today demands not only operational skills but also resilience, innovation, and strategic foresight.

Sustainability and ethics have also become core components of hospitality management. Managers are now expected to lead with environmental responsibility, inclusivity, and fair labor practices, aligning with global sustainability goals (Jones, Hillier & Comfort, 2021). This involves adopting green technologies, reducing waste, and fostering inclusive work environments. Additionally, customer-centric approaches, such as experience design and emotional engagement, are reshaping how services are managed and delivered. As the industry evolves, hospitality management is increasingly recognized as a multidisciplinary field that combines business acumen, human resource leadership, technological literacy, and a deep understanding of guest psychology to deliver memorable and sustainable hospitality experiences.

THE PROSPECT OF ADOPTING AI FOR EFFECTIVE TOURISM PRACTICE

Artificial Intelligence (AI) is revolutionizing the global tourism industry by enhancing service delivery, improving decision-making, and providing personalized customer experiences. The integration of AI into tourism practices presents several key prospects that are essential for modern, efficient, and sustainable tourism development. Below are the major prospects, explained with recent scholarly references.

➤ Personalized Customer Experience



AI enables tourism businesses to provide personalized services based on tourists' preferences, behaviors, and history. Machine learning algorithms analyze user data to recommend customized travel itineraries, accommodation, restaurants, and attractions. For instance, intelligent recommendation systems suggest relevant experiences to users by learning from their digital footprints (Zeng, Zhao, & Wang, 2020). Additionally, AI chatbots provide 24/7 real-time responses, reducing human error and improving communication in different languages (Tussyadiah, 2020).

➤ **Efficient Destination Management and Planning**

AI-powered predictive analytics assist governments and tourism boards in managing tourist flows, controlling congestion, and improving urban planning. AI tools forecast travel demand and optimize infrastructure usage based on weather patterns, seasonal data, and visitor trends (Li, Hu, & Huang, 2021). These technologies help reduce over-tourism and ensure equitable access to tourism resources.

➤ **Sustainability and Environmental Monitoring**

AI plays a role in promoting sustainable tourism by monitoring environmental impact, predicting pollution levels, and optimizing resource use. For example, AI can analyze traffic and crowd density data to redirect visitors to less congested areas, thereby minimizing environmental degradation (Gretzel & Collier, 2022). This supports sustainable tourism goals in line with the United Nations Sustainable Development Goals (SDGs).

➤ **Virtual Reality (VR) and Augmented Reality (AR) Integration**

AI supports immersive tourism through VR and AR technologies that allow tourists to preview destinations before traveling. These technologies improve decision-making and enhance marketing strategies by offering interactive experiences of landmarks, hotels, and cities (Gössling & Hall, 2021). Post-COVID, such innovations have gained traction for contactless and safer tourism experiences.

➤ **Enhanced Safety and Crisis Management**

AI technologies contribute to health safety through tools like facial recognition, temperature detection systems, and digital contact tracing. During crises such as the COVID-19 pandemic, AI assisted in tracking health data, enforcing social distancing, and automating sanitization (Jarratt & Xu, 2023). This improves tourists' trust and safety in travel environments.

➤ **Business Efficiency and Cost Reduction**

AI streamlines operations in hotels, airlines, and travel agencies by automating tasks like check-ins, billing, inventory management, and marketing. This reduces overhead costs and improves service delivery. AI systems help businesses to allocate resources more efficiently and respond to customer inquiries automatically (Ivanov, 2024).

THE PROSPECT OF ADOPTING AI FOR EFFECTIVE HOSPITALITY MANAGEMENT

The adoption of Artificial Intelligence (AI) in hospitality management is transforming traditional service models into data-driven, customer-centric, and highly efficient systems. The prospects of AI adoption in this sector span across guest experience enhancement, operational efficiency, workforce optimization, and strategic decision-making. The integration of AI offers



hospitality firms a competitive edge by aligning services with technological advancements and evolving consumer expectations.

➤ **Enhanced Guest Personalization and Experience**

AI enables hyper-personalized services by analyzing guests' preferences, past behavior, and real-time interactions. AI-powered systems such as chatbots and virtual assistants provide tailored recommendations and automate bookings, check-ins, and room service, thereby enhancing customer satisfaction (Tussyadiah, 2020). Smart rooms equipped with AI systems adjust lighting, temperature, and entertainment based on guest profiles (Zeng, 2020).

➤ **Operational Efficiency and Cost Reduction**

AI automates repetitive administrative tasks such as billing, room allocation, inventory control, and housekeeping schedules. This reduces human error and operating costs while optimizing time and resources (Ivanov & Webster, 2021). Predictive maintenance powered by AI also ensures that equipment and facilities are serviced before failure, thus reducing downtime.

➤ **Workforce Management and Labor Optimization**

AI tools assist in staff scheduling, performance tracking, and workload distribution. By analyzing peak periods and staffing patterns, managers can allocate personnel more effectively, improving employee satisfaction and productivity (Lu, 2020). This also reduces reliance on human labor during staff shortages or crises.

➤ **Revenue Management and Dynamic Pricing**

AI algorithms analyze market trends, booking patterns, and competitor pricing to optimize room rates and maximize revenue. Dynamic pricing models ensure that room prices reflect real-time demand, seasonality, and consumer behavior (Xiang et al., 2021). This enables hotels to respond quickly to market fluctuations.

➤ **Enhanced Decision-Making through Predictive Analytics**

AI supports data-driven decision-making by identifying trends, forecasting customer demand, and evaluating performance metrics. Hospitality managers use AI-powered dashboards to make informed decisions on staffing, marketing, and service delivery (Gretzel & Collier, 2022). AI also assists in evaluating guest feedback and online reviews for continuous improvement.

➤ **Safety, Hygiene, and Contactless Services**

Post-COVID, AI has played a crucial role in implementing contactless check-ins, digital room keys, facial recognition, and voice-controlled services. These AI-powered solutions ensure hygiene and safety while enhancing convenience (Jarratt & Xu, 2023). Such systems also support health data monitoring and reduce physical contact.

➤ **Smart Marketing and Customer Retention**

AI tools like customer relationship management (CRM) systems and sentiment analysis allow hospitality firms to understand customer needs and tailor marketing strategies. AI-driven email campaigns, loyalty programs, and social media analytics increase customer engagement and retention (Gursoy, 2020).



CHALLENGES OF ADOPTING AI FOR EFFECTIVE TOURISM PRACTICE AND MANAGEMENT

The integration of Artificial Intelligence (AI) into tourism practice and management has the potential to revolutionize service delivery, customer interaction, and data-driven decision-making. However, despite its transformative promises, the adoption of AI in tourism faces a multitude of challenges. These barriers span across technological, organizational, ethical, and human resource dimensions, limiting its effectiveness and long-term sustainability in the sector.

□ Technological Infrastructure and Digital Divide

One of the primary challenges is the disparity in technological infrastructure across different regions and tourism operators. Many destinations, particularly in developing countries, lack the robust internet connectivity, advanced hardware, and cloud computing capabilities needed for AI implementation (Gretzel, 2020). This digital divide restricts the ability of local businesses to adopt AI solutions, thereby widening the competitiveness gap between global and local tourism providers. Moreover, inconsistent data formats and low-quality data hinder the training and optimization of AI systems, making them less effective in providing accurate insights or services.

□ Data Privacy and Ethical Concerns

AI in tourism often relies on large-scale personal data collection, including traveler preferences, behaviors, and biometrics. This raises serious ethical and legal concerns regarding data privacy, consent, and surveillance (Tussyadiah, 2020). Regulations such as the General Data Protection Regulation (GDPR) in Europe pose additional hurdles for tourism businesses seeking to leverage AI, as they must ensure compliance or face legal penalties. Tourists themselves may be wary of AI technologies due to fears of data misuse, potentially reducing adoption rates and trust in AI-driven services.

Lack of Skilled Workforce and Training

Implementing AI systems requires a workforce proficient in machine learning, data analytics, and digital systems management. The tourism industry, traditionally not a tech-centric field, suffers from a lack of employees with these specialized skills (Ivanov & Webster, 2020). Small and medium-sized enterprises (SMEs), which dominate the tourism sector, often cannot afford the high costs of recruiting AI professionals or up skilling their current staff. This knowledge gap significantly slows down the pace of AI adoption and reduces the effectiveness of systems when poorly implemented or maintained.

□ High Implementation Costs and Uncertain ROI

The cost of AI adoption remains a major barrier, especially for small tourism operators. Investments are needed for system acquisition, software customization, employee training, and ongoing maintenance (Li, 2022). The return on investment (ROI) for AI in tourism can also be uncertain or delayed, especially in a volatile market affected by global issues such as the COVID-19 pandemic. As a result, many organizations remain hesitant to fully invest in AI-driven transformations, preferring to wait for proven, low-cost solutions or external support.

□ Resistance to Change and Cultural Barriers



The tourism industry often values personal interaction and traditional methods of service delivery, making some stakeholders resistant to AI-driven automation. Employees may fear job losses, and customers may prefer human interaction over machine-led services (Mariani & Wamba, 2021). Organizational culture also plays a role, as some tourism operators are reluctant to alter their operational models or invest in disruptive technologies, especially when the long-term benefits are unclear or untested in their context.

□ **Limited Standardization and Interoperability**

AI adoption in tourism is hampered by a lack of standardization across platforms, applications, and data sources. Interoperability issues make it difficult to integrate AI tools with existing systems such as reservation platforms, customer relationship management (CRM) tools, and supply chain software (Xiang, 2021). Without common standards or frameworks, tourism businesses face technical challenges that reduce efficiency and increase operational complexity when trying to scale or diversify AI applications.

HOW TO MITIGATE THE CHALLENGES OF ADOPTING AI FOR EFFECTIVE TOURISM PRACTICE AND MANAGEMENT

As the tourism industry embraces digital transformation, the integration of Artificial Intelligence (AI) has emerged as a critical enabler of smart tourism practices, including personalization, automation, and real-time decision-making. However, various challenges such as infrastructural deficits, ethical concerns, workforce limitations, and financial constraints hinder AI adoption. To realize the full potential of AI in tourism, strategic mitigation approaches must be implemented through policy, education, collaboration, and technological innovation.

□ **Strengthening Technological Infrastructure and Bridging the Digital Divide**

To address the technological gap in AI adoption, governments and tourism stakeholders must invest in digital infrastructure such as high-speed internet, cloud storage, and cyber security frameworks. Public-private partnerships (PPPs) can play a vital role in ensuring access to AI technologies for rural or underserved tourism destinations (Mariani, 2021). Governments can also provide subsidies or tax incentives to small and medium-sized tourism enterprises (SMTEs) to support the acquisition of necessary AI tools and hardware. Capacity-building initiatives, including digital hubs or innovation centers, can create inclusive access and minimize the global digital divide.

□ **Ensuring Ethical AI Practices and Strengthening Data Governance**

To mitigate concerns around data privacy, security, and ethical AI use, tourism organizations must adopt transparent data governance frameworks. Implementation of privacy-by-design models, encryption techniques, and adherence to regulations such as GDPR are critical to ensuring data protection and user trust (Tussyadiah, 2020). Creating third-party auditing mechanisms and ethical review boards will ensure AI algorithms remain accountable and unbiased. Additionally, tourism businesses must clearly communicate data usage policies to tourists and ensure informed consent at all stages.

□ **Developing AI Talent and Up skilling the Tourism Workforce**

One effective way to address the workforce and skills gap is by embedding AI-related training in tourism and hospitality curricula at tertiary institutions. On-the-job training, online certification



programs, and partnerships with tech companies can also help up skill existing employees (Ivanov & Webster, 2020). Governments and tourism boards should fund digital literacy programs to equip tourism workers with foundational knowledge of data handling, machine learning, and AI ethics. A skilled workforce enhances the sustainability of AI integration and empowers staff to engage meaningfully with technological tools.

□ **Facilitating Low-Cost AI Access through Open-Source Platforms and Innovation Grants**

To overcome the high costs and uncertain return on investment (ROI) associated with AI, policymakers and funding bodies can support innovation through grants, incubators, and AI-as-a-service (AIaaS) models. Open-source platforms such as Tensor Flow and Microsoft Azure AI offer affordable entry points for tourism businesses to experiment with AI solutions without prohibitive licensing fees (Li, 2022). Encouraging AI start-ups focused on tourism solutions can also lower implementation barriers by providing customized and cost-effective tools tailored to local markets.

□ **Promoting Cultural Change and Stakeholder Engagement**

Cultural resistance to AI adoption can be reduced by promoting digital transformation as a complement, not a replacement, to human labor. Change management programs, stakeholder workshops, and participatory innovation strategies can help build internal support and reduce fear among staff (Gretzel, 2020). Tourism operators must also involve frontline employees and customers in the design of AI systems to ensure they reflect human-centered values and expectations. Communicating success stories from early adopters can also help foster industry-wide enthusiasm for AI integration.

□ **Enhancing Standardization and Interoperability**

Finally, the development of standardized frameworks and APIs (Application Programming Interfaces) can ensure interoperability between AI applications and existing tourism management systems. Industry consortia and standards organizations can facilitate the creation of shared protocols for data formatting, communication, and AI performance benchmarks (Xiang, 2021). Governments can further encourage platform interoperability by mandating compliance standards for AI tools used in tourism, thereby fostering smoother technology integration.

Challenges of adopting AI for effective hospitality practice and management

The integration of Artificial Intelligence (AI) into the hospitality industry presents significant opportunities for enhancing customer experiences, improving operational efficiency, and enabling data-driven decision-making. However, despite its growing potential, several barriers hinder the widespread and effective adoption of AI in hospitality. These challenges are technological, organizational, ethical, and financial in nature, posing strategic and practical difficulties for both large hotel chains and small hospitality businesses.

□ **High Implementation and Maintenance Costs**

One of the foremost challenges facing hospitality firms is the substantial financial investment required for AI adoption. Advanced AI systems such as robotic concierge services, facial recognition check-ins, and predictive analytics require significant upfront costs, as well as continuous maintenance and system upgrades. Small and medium-sized enterprises (SMEs), which make up a



large portion of the hospitality sector, often lack the financial capacity to afford these technologies, creating a digital divide within the industry (Li, 2022).

□ **Lack of Skilled Workforce and AI Literacy**

A critical barrier to AI adoption in hospitality is the shortage of skilled professionals capable of managing AI systems. Many hospitality workers are not trained in data science, machine learning, or AI programming, making it difficult for firms to integrate and utilize these tools effectively. Additionally, AI-related anxiety among employees—stemming from fear of job loss or lack of technical understanding—can lead to resistance to AI technologies (Ivanov & Webster, 2020).

□ **Privacy and Ethical Concerns**

The use of AI in hospitality often involves collecting, analyzing, and storing personal customer data to improve service personalization and guest experiences. However, this raises serious ethical and privacy concerns. Facial recognition tools, smart room assistants, and AI chatbots all collect sensitive data that, if misused or breached, can lead to legal and reputational risks. Compliance with data protection regulations such as the General Data Protection Regulation (GDPR) requires sophisticated data governance systems that many hotels are yet to implement (Tussyadiah, 2020).

□ **Interoperability and Integration Issues**

Most hospitality firms already operate various legacy systems for reservations, customer relationship management (CRM), and property management. Integrating new AI technologies with these existing systems often results in compatibility issues. Poor interoperability can lead to data silos, duplication of efforts, and inconsistent guest experiences. Moreover, the lack of industry-wide standards for AI systems in hospitality exacerbates these integration challenges (Mariani & Wamba, 2021).

□ **Cultural Resistance and Change Management**

AI adoption requires a shift in workplace culture—from manual, personalized service to data-driven automation. However, hospitality is traditionally a human-centric industry, and there can be cultural resistance from both employees and customers. Employees may feel threatened by the automation of tasks they once performed, while customers may be wary of impersonal or robotic interactions. Change management strategies are often insufficient to address these cultural barriers (Gretzel, 2020).

□ **Limited Understanding of AI Value and ROI**

Many hospitality managers and decision-makers lack a clear understanding of how AI creates value or delivers return on investment (ROI). This lack of strategic vision results in poor adoption decisions, underutilization of AI capabilities, or complete inaction. Without clear key performance indicators (KPIs) or data to demonstrate ROI, AI initiatives may be abandoned prematurely (Murphy, 2022).

How to mitigate the Challenges of adopting AI for effective hospitality practice and management



The integration of artificial intelligence (AI) into hospitality practice has the potential to revolutionize guest services, streamline operations, and enhance decision-making. However, numerous challenges—including high costs, employee resistance, ethical concerns, and skill gaps—have slowed AI adoption in the sector. To achieve effective and sustainable implementation, the hospitality industry must adopt multifaceted mitigation strategies addressing technological, human, financial, and ethical dimensions.

□ **Implementing Change Management and Stakeholder Engagement Strategies**

Effective change management is vital to overcoming cultural resistance from employees and customers. Hospitality managers should use transparent communication, participatory decision-making, and incentive systems to foster a sense of ownership among stakeholders. Change agents and AI champions within organizations can also facilitate smoother transitions by advocating for AI's benefits and addressing concerns internally (Gretzel, 2020).

□ **Developing Scalable and Cost-Effective AI Solutions**

To overcome high initial implementation costs, hospitality firms should adopt scalable and modular AI solutions tailored to their size and budget. Cloud-based AI services and Software-as-a-Service (SaaS) platforms reduce infrastructure burdens and allow smaller firms to access AI tools without prohibitive capital investment. Strategic partnerships with AI vendors or academic institutions can also help reduce costs through shared resources (Murphy, 2022).

□ **Ensuring Data Privacy and Ethical Governance**

AI systems often require sensitive guest data, raising concerns over data security and privacy. To mitigate this, hospitality firms should adopt strict data protection protocols aligned with global regulations such as the General Data Protection Regulation (GDPR). Establishing transparent data use policies and obtaining informed consent from guests can enhance trust. Furthermore, setting up internal ethics committees and auditing mechanisms ensures responsible AI usage (Tussyadiah, 2020).

□ **Improving Interoperability and Infrastructure**

Integration issues between AI technologies and existing legacy systems can be addressed by adopting standardized APIs and interoperable system architectures. Firms should audit their IT ecosystems and invest in middleware solutions that allow seamless communication between platforms. Open data standards promoted by industry bodies can also accelerate interoperability across the sector (Mariani & Wamba, 2021).

□ **Demonstrating Value and Return on Investment (ROI)**

Hospitality firms should implement clear performance metrics to assess AI's impact on customer satisfaction, revenue generation, and operational efficiency. These metrics can help justify further investment and increase executive buy-in. Pilot testing and phased implementation strategies allow organizations to evaluate benefits before full-scale deployment, reducing risks and maximizing returns (Ivanov & Webster, 2020).

CONCLUSION



The adoption of Artificial Intelligence (AI) is revolutionizing tourism and hospitality, offering smarter, faster, and more personalized services. From AI-powered chatbots to predictive analytics and robotic assistants, the industry is embracing innovations to enhance customer experience and operational efficiency. AI enables real-time decision-making, streamlines bookings, and improves guest satisfaction through automation and data insights. However, alongside these prospects lie challenges such as high implementation costs, ethical concerns, and workforce displacement. Small enterprises often face technological and financial barriers. Moreover, trust in AI-driven interactions remains limited among some travelers. Effective adoption demands a balance between innovation and human touch. Sustainable integration requires robust strategies, training, and policy support.

RECOMMENDATION

- Organizations should equip their workforce with digital literacy and AI-related competencies to reduce resistance and enhance collaboration between humans and machines.
- Leadership should champion AI adoption by setting clear visions, involving stakeholders, and managing cultural shifts in the organization.
- It encourages partner with technology providers and research institutions to stay updated on AI trends, pilot innovations, and co-develop industry-specific solutions.



REFERENCE

- Abashidze, I., & Rancati, E. (2025). AI-based Machine Translations in Tourism and Hospitality: An Exploratory Study of Travelers' Perceptions and Future Challenges. Research Gate PDF
- Baum, T., Mooney, S. K. K., Robinson, R. N. S., & Solnet, D. (2020). COVID-19's impact on the hospitality workforce – New crisis or amplification of the norm? *International Journal of Contemporary Hospitality Management*, 32(9), 2813–2829. <https://doi.org/10.1108/IJCHM-04-2020-0314>
- Bilgihan, A., Barreda, A., Okumus, F., & Nusair, K. (2022). Consumer perception of smart hospitality technologies: A strategic management approach. *International Journal of Hospitality Management*, 101, 103125. <https://doi.org/10.1016/j.ijhm.2021.103125>
- Chung, N., Tyan, I., & Han, H. (2017). Enhancing the quality of hospitality services with the use of artificial intelligence: The future of personalized guest experience. *Service Industries Journal*, 37(13–14), 810–832.
- Copeland, B. J. (2025), artificial intelligence, Available at: <https://www.britannica.com/technology/artificial-intelligence>.
- Craig, L. (2024), What is AI? Artificial Intelligence explained. Available at: <https://www.techtarget.com/searchenterpriseai/definition/AI-Artificial-Intelligence>.
- Giousmpasoglou, C., Marinakou, E., & Zopiatis, A. (2021). Hospitality managers in turbulent times: The impact of COVID-19 on roles and competencies. *International Journal of Contemporary Hospitality Management*, 33(3), 1016–1033. <https://doi.org/10.1108/IJCHM-07-2020-0727>
- Glover, E. (2025). What Is Artificial Intelligence (AI)?. Available at: <https://builtin.com/artificial-intelligence>.
- Gössling, S., & Hall, C. M. (2021). Pandemics, tourism and global change: A rapid assessment of COVID-19. *Journal of Sustainable Tourism*, 29(1), 1–20. <https://doi.org/10.1080/09669582.2020.1758708>
- Gretzel, U., & Collier, A. (2022). AI and data governance in tourism: A policy perspective. *Information Technology & Tourism*, 24, 259–275. <https://doi.org/10.1007/s40558-022-00227-w>
- Gretzel, U., & Collier, A. (2022). AI and data governance in tourism: A policy perspective. *Information Technology & Tourism*, 24(3), 259–275. <https://doi.org/10.1007/s40558-022-00227-w>
- Gretzel, U., Sigala, M., Xiang, Z., & Koo, C. (2015). Smart tourism: Foundations and developments. *Electronic Markets*, 25(3), 179–188.
- Gursoy, D., Chi, C. G., Lu, L., & Nunkoo, R. (2020). Consumers acceptance of AI devices in service delivery. *International Journal of Information Management*, 49, 157–169. <https://doi.org/10.1016/j.ijinfomgt.2019.12.008>



- International Energy Agency (IEA). (2021). Policies to Reduce the Cost of Renewable Energy Deployment. <https://www.iea.org>
- Ivanov, S. (2024). AI adoption in hospitality and tourism: Drivers and inhibitors. *Journal of Tourism Futures, (ahead-of-print)*. <https://doi.org/10.1108/JTF-07-2023-0165>
- Ivanov, S., & Webster, C. (2019). Conceptual framework of the use of robots, artificial intelligence and service automation in travel, tourism and hospitality companies. *Technology in Society*, 58, 101–110.
- Ivanov, S., & Webster, C. (2021). Robots in tourism and hospitality: A research agenda for post-pandemic recovery. *Tourism Management Perspectives*, 38, 100822. <https://doi.org/10.1016/j.tmp.2021.100822>
- Ivanov, S., Webster, C., & Berezina, K. (2019). Adoption of robots and service automation by tourism and hospitality companies. *Robotics and Artificial Intelligence in Tourism*, 3(2), 45–60.
- Jarratt, D., & Xu, F. (2023). Artificial intelligence and post-COVID tourism: A human-centric perspective. *Tourism Management Perspectives*, 47, 101050. <https://doi.org/10.1016/j.tmp.2023.101050>
- Jarratt, D., & Xu, F. (2023). Artificial intelligence and post-COVID tourism: A human-centric perspective. *Tourism Management Perspectives*, 47, 101050. <https://doi.org/10.1016/j.tmp.2023.101050>
- Jones, P., & Hillier, D. (2022). Sustainability in hospitality: A framework for sustainable practice. *Journal of Sustainable Tourism*, 30(4), 567–583. <https://doi.org/10.1080/09669582.2021.1945080>
- Jones, P., Hillier, D., & Comfort, D. (2021). Sustainability in the global hotel industry: An exploratory study. *International Journal of Contemporary Hospitality Management*, 33(3), 867–882. <https://doi.org/10.1108/IJCHM-09-2020-0974>
- Kerzner, H. (2017). *Project Management: A Systems Approach to Planning, Scheduling, and Controlling*. Wiley.
- Kim, W. G., Lee, S., & Lee, H. Y. (2020). Developing a performance evaluation framework for hotel managers. *Journal of Hospitality and Tourism Management*, 45, 343–353. <https://doi.org/10.1016/j.jhtm.2020.09.002>
- Li, Y., Hu, C., & Huang, S. (2021). Smart tourism city: A systematic literature review. *Journal of Hospitality and Tourism Technology*, 12(2), 179–194. <https://doi.org/10.1108/JHTT-12-2020-0267>
- Lu, L., Cai, R., & Gursoy, D. (2019). Developing and validating a service robot integration willingness scale. *International Journal of Hospitality Management*, 80, 36–51.
- Lu, L., Cai, R., & Gursoy, D. (2020). Developing and testing a model of artificial intelligence anxiety in hospitality. *International Journal of Hospitality Management*, 91, 102616. <https://doi.org/10.1016/j.ijhm.2020.102616>



- Lugosi, P. (2020). Re-thinking hospitality through the co-production of experiences. *Tourism and Hospitality Research*, 20(3), 283–290. <https://doi.org/10.1177/1467358420901453>
- Mariani, M. M., & Baggio, R. (2021). Big data and analytics in hospitality and tourism: A systematic literature review. *International Journal of Contemporary Hospitality Management*, 33(4), 1240–1265.
- Mariani, M. M., Borghi, M., & Cappa, F. (2021). Industry 4.0 technologies and human resource management in tourism: A systematic literature review. *Journal of Tourism Management*, 89, 104405.
- Morosan, C., & DeFranco, A. (2016). It's about time: Revisiting U.S. online privacy and security regulations. *Journal of Hospitality and Tourism Technology*, 7(3), 258–280.
- Park, S., & Kincaid, C. (2021). Emotional labor and hospitality professionalism in frontline employees. *Journal of Hospitality and Tourism Management*, 48, 405–412. <https://doi.org/10.1016/j.jhtm.2021.06.007>
- Sharma, V. (2024). AI in Hospitality and Tourism Promotion: Opportunities and Challenges. In *AI-Driven Solutions in Hospitality and Tourism* (IGI Global). Link
- Tussyadiah, I. (2020). A review of research into automation in tourism. *Annals of Tourism Research*, 81, 102883. <https://doi.org/10.1016/j.annals.2020.102883>
- Tussyadiah, I. P. (2020). A review of research into automation in tourism. *Annals of Tourism Research*, 81, 102883. <https://doi.org/10.1016/j.annals.2020.102883>
- Tussyadiah, I. P. (2020). A review of research into automation in tourism: Launching the Annals of Tourism Research Curated Collection on Artificial Intelligence and Robotics in Tourism. *Annals of Tourism Research*, 81, 102883.
- Tussyadiah, I. P., & Park, S. (2018). Consumer evaluation of hotel service robots. *Information and Communication Technologies in Tourism 2018*, 308–320.
- UNDP. (2016). Local Governance for Sustainable Development. United Nations Development Programme.
- Van de Wetering, R., Helms, R., Roelens, B., & Bagheri, S. (2024). Disruptive Innovation in a Digitally Connected Healthy World. In *IFIP WG 6.11 Conference on e-Business, e-Services and e-Society*. Google Books
- Xiang, Z., Du, Q., Ma, Y., & Fan, W. (2021). A comparative analysis of major online review platforms. *Tourism Management*, 83, 104245. <https://doi.org/10.1016/j.tourman.2020.104245>
- Yin, Z., Kong, H., Baruch, Y., Decosta, P. L. E., & Yuan, Y. (2024). Interactive effects of AI awareness and change-oriented leadership on employee-AI collaboration. *Tourism Management*, 101, 104870. <https://doi.org/10.1016/j.tourman.2024.104870>
- Zeng, D., Zhao, J. L., & Wang, J. (2020). Smart tourism: Intelligent technologies and experiences. *Journal of Management Information Systems*, 37(1), 1–12. <https://doi.org/10.1080/07421222.2020.1740750>



Zeng, D., Zhao, J. L., & Wang, J. (2020). Smart tourism: Intelligent technologies and experiences.
Journal of Management Information Systems, 37(1), 1–12.
<https://doi.org/10.1080/07421222.2020.1740750>