



Understanding the Role of AI in Improving the Performance of the Tourism Industry and its Ethical Challenges

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Abstract

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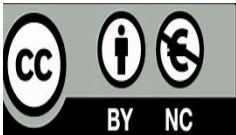
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The tourism industry worldwide is growing rapidly to meet the demands of global tourists, but its facilities remain limited and urgently need improvement. The main focus of this study was to examine twenty four (N = 24) empirical, open-access articles that primarily discuss the role of AI in facilitating customer service in the tourism industry. This study is significant for the Nepalese academic community because there is no reliable research in this domain demonstrating that AI helps the tourism industry flourish and meet customers' needs for experiences and services. The data from the selected articles were downloaded after obtaining consent from the authors and publishers. The results show that empirical research did not address the moral problems associated with the use of AI in the tourism industry.

The findings highlight research gaps in AI for hospitality and tourism, notably an over reliance on secondary data lacking empirical validation, leading to unreliable results. This study could struggle to forecast without empirical support. Empirical evidence indicates a significant knowledge gap stemming from the limited scope of ethical analysis, underdeveloped theoretical linkages between artificial intelligence and tourism development, and inadequate exploration of AI-tourism interactions beyond purely technological dimensions. The results are useful for people working in the tourism industry, as they recognise the necessity of AI's positive role in supporting mental health. The analysis is based on a limited selection of papers, leading to a lack of critical examination.

Keywords: *ethical challenges, hospitality, performance improvement, role of AI, tourism industry*



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Introduction

Travel, lodging, and leisure are all parts of the tourism industry. It is a major part of the global economy. It works with many groups, including travel agencies, airlines, hotels, tour operators, and support services, to ensure visitors have a great time during their stay (Tribe, 2020).

Tourism is slowly returning to pre-pandemic levels, underscoring its importance to the global economy and its resilience. More and more people in the industry are using digital tools and new technologies to streamline operations, manage resources more effectively, and enhance visitors' experiences (AL-Ghaswyneh et al., 2025). It is now one of the most important Artificial Intelligence (AI) technologies because it enables personalised customer service and better resource management (Hernández-Tamurejo, Orea-Giner & Rana, 2025). Businesses should not wait until after the fact to deal with ethical issues. Instead, they should ensure that ethics are part of their technical breakthroughs from the begin (Nadella, Shaw & Nichols, 2018).

To stay competitive and do better in the long run, businesses need to follow ethical business practices, which means that they should do more than just make money. They should also be responsible for the AI technology they sell and the people they help. AI marketing often makes promises that are too good to be true, which is a common crucial problem (Kaplan & Haenlein, 2019).

If we don't think about ethics when using AI, we could lose customer's trust and damage the financial condition of tourism industry (Hickman & Petrin, 2021; Saura, Skare & Dosen, 2024), which makes us ask an important question: how can current ethical rules and frameworks keep up with AI's rapid growth while also dealing with its wider social effects. Researchers and industry professionals are always looking for ways for businesses to make the most of AI without compromising people's values. Some researchers contend that the resolution of using AI in tourism industry lies in incorporating ethical principles into actual implementation (Borenstein & Howard, 2021; Stahl, 2021).

Digital transformation has led to the rise of platforms like Airbnb, TripAdvisor, and Booking.com, which make travel easier and more accessible (Pencarelli, 2020; Rodrigues, Eusébio, & Breda, 2023). Digitalization generates amounts of data, enabling enhanced decision-making and tailored service accessibility (Rahmadian, Feitosa & Zwitter, 2022).

We need the latest technologies and strong analytics to make the most of those opportunity. AI is becoming more and more important for marketing, customer service better, managing sound financial condition, managing destinations properly, and being more eco-friendly (Hernández-Tamurejo et al., 2025). AI has many benefits, but it also brings up important moral considerations. A lot of efforts made in tourism sector in the past few years, which is more competitive between places, more middlemen, and digital technology is changing quickly (Vaishnavi et al., 2025). Businesses, tourists, and the industry as a whole have changed because of the rapid digital transformation. Digital tools have made operations more efficient, provoked new ideas, and made it possible to manage tourism services in real time (Hernández-Tamurejo et al., 2025).

AI in tourism brings up moral questions about privacy, data security, openness, and bias (Hu & Min, 2025; Saura et al., 2024). If the reason for using too much personal data is not clear, it could be a violation of privacy rights (Blauth, Gstrein & Zwitter, 2022). Biased datasets can make problems worse and lead to unfair results (Filieri et al., 2021). Many AI models are also hard to understand because they are too complex and not clear-cut, which makes it hard to know how they decide things or how fair they are (van Nood & Yeomans, 2021). Those problems bring up issues of fairness, responsibility, and individual rights, which shows how important it is to use AI correctly in tourism sector (Knani, Echchakoui & Ladhari, 2022).

The objective of this study was to identify and evaluate the predominant keywords, applied research methodologies, the sources of journal articles, the significant findings, and the key issues of research process associated with the reviewed



articles (see Table 1).

The result of this study intends to assist individuals workers in tourism industry and guide subsequent future research. The result underscore the necessity of addressing ethical considerations as the industry progresses towards digitalisation (Chen et al., 2024; Pencarelli, 2020). Better combination of AI and tourism can facilitate visitor management, enhance travel experiences, and promote sustainability (Rodrigues, Eusébio, & Breda, 2023). Digitalisation permits data collection, enabling services to be customised for each user and informed decisions to be made in tourism business (Rahmadian et al., 2022). Advanced analytics and technology are essential for maximising the potential benefits of AI in tourism. AI is a big part of marketing, which is getting people to buy things, running a business, making money, and being good for the environment (Hernández-Tamurejo et al., 2025).

AI recommendation algorithms can give more attractions than others based on criteria that are not made public, which could damage businesses owned by minorities as well as groups that are not well represented. If booking sites take personal information without asking, it could lead to annoying targeted ads or the sharing of information that people don't want. Dynamic pricing algorithms might charge more based on the device or browsing history, which might seem unfair and make people less likely to trust the company.

This article intends to enhance academic comprehension by conducting a comprehensive analysis of the ethical implications of AI in tourism services. The purpose of this article is to prepare for future primary research by identifying potential risks, recommending safe methods for utilising them, ensuring compliance with regulations, and earning customers' trust.

People around the world want to use AI to improve tourism services. However, employing it in tourism and hospitality management raises significant gap between ethical practice of AI (Blauth et al., 2022). Many businesses use AI, but few governments have examined its ethical complication globally (Ardito et al., 2019). It

is crucial to consider those things and increase research in this field. Therefore, critical ethical issues are key hurdles to the use of AI in the tourism sector to improve customer service.

Research Objectives

- To examine repeated keywords in the review articles.
- To examine the research methodologies predominantly applied in the reviewed article.
- To evaluate the sources of journals in the review articles.
- To examine the primary objectives of the reviewed articles.
- To examine the key results in the reviewed article.
- To identify the research gap in the reviewed article.

Research Questions

What are the most common keywords in the reviewed article?

What are the main research methodologies used in the reviewed article?

What are the main sources of journals of reviewed article?

What are the main objectives in the review article?

What are the key results in the reviewed articles?

What are the key research gaps in the reviewed article?

Materials and Methods

This study applied literature review method to evaluate the empirical research entitled the role of AI in tourism industry from different online sources, such as Google Scholar, Web of Science, ScienceDirect, SpringerLink, and physical documents, that discussed the use of AI in tourism. To fill this gap, this study qualitatively examined the academic literature, combining what we already knew and identifying new themes. This author examined at the secondary data in light of the article's objectives goals, keywords, research methods, main results, and journal sources. To analyse the results, this author used AI templates to make a few figures but the text are original.

Results

The results section covers all the data used (see Table 1), including the research objectives, the methods used, the journal sources, the key results, and the keywords used (see Table 1).

Table 1. Summary of the Previous Studies Entitled the Role of AI to Use for the Enhancement of Tourism

Authors (Years)	Sources of Journals	Objective	Methods	Key results	Limitations	Keywords
Tuo et al. (2024).	Tourism Review	This study intends to analyse the role and implementation of artificial intelligence (AI) in the tourism sector through a systematic review.	A Keyword co-occurrence analysis	The findings highlight five key areas: the impact of AI on tourist experiences; tourism marketing and forecasting; destination management; tourism businesses; and its integration into strategic and regulatory frameworks.	-Secondary data was utilised. -No specific scientific research method was employed. -Special context was overlooked.	Tourism and technology innovation, artificial intelligence, human-computer interaction, Research agenda, Literature review,
Yu et al. (2025)	Asia Pacific Journal of Tourism Research	This study conducts a meta-analysis to explore the theoretical foundation of anthropomorphism in tourism research.	A meta-analysis	Findings show anthropomorphism increases with perceived intelligence, personalisation, competence, hedonistic motivation, and social influence, but decreases with perceived risk. It also enhances cognitive, emotional, and intentional factors.	-Secondary data was used. -No specific method was applied.	Anthropomorphism, tourism, antecedents and consequences, industry attributes, AI type, meta-analysis
Dogru et al. (2023)	Journal of Hospitality and Tourism Research	Our empirical study evaluates personalisation, user satisfaction, operational efficiency, and research productivity.	Survey and interview methods	The results indicate that while generative AI can improve both customer experiences and operational efficiency, its success relies on well-designed prompting techniques, commitment to ethical standards, proper employee training, and careful attention to community implications.	-Problem of adoption in a specific context. -In hospitality and tourism, the success of generative AI applications is limited by challenges related to data quality and accessibility.	Generative AI in the hospitality and tourism industry, stakeholder theory, ethical, legal, social, and economic considerations, opportunities, and challenges
Law, Ye, and Lei (2024)	Journal of Contemporary Hospitality Management	This research examines the ethical concerns surrounding artificial intelligence in the hospitality and tourism sectors, highlighting the need for guidelines for its responsible use.	A narrative review	The findings highlight ethical challenges associated with AI, including privacy concerns, the perpetuation of harmful stereotypes, manipulation, and dehumanisation. The study also provides strategies to ensure that AI is used, managed, and utilized in an ethical, responsible, and effective manner, with sustainability in mind.	-Only one research method was used. -Five refined guidelines were proposed to guide the use of AI in the hospitality and tourism industries. Industry.	Artificial intelligence, ethics, responsibility, sustainability, hospitality, tourism
Saleh (2025)	Journal of Hospitality and Tourism Research	This study analyses AI integration trends, explores prompt optimisation, and evaluates implementation strategies using a mixed-methods approach.	A bibliometric analysis	The findings reveal that generative AI can enhance customer experiences and operational efficiency. However, its success depends on the effective use of prompting, strong ethical compliance, investment in workforce development, and careful evaluation of community impacts.	-Secondary data was used. -Weak for contextual adaptation. -Limited focus on a specific AI model. -Cannot be generalised to a similar context.	ChatGPT, Generative AI, Claude AI, Gemini AI, Artificial Intelligence, AI prompts, DeepSeek



Kim et al. (2024)	Journal of Hospitality and Tourism Research	To explore how AI will reshape the future of the hospitality and tourism sectors.	Mixed approach methods	Our findings provide an overview of AI advancements, applications, and future predictions, highlighting key ethical considerations for its application in the hospitality and tourism sectors.	-Unclear methodology. -Limited coverage of ethical considerations. -Unclear focus on AI and tourism issues. -Predictions without empirical evidence.	Artificial Intelligence (AI), hospitality and tourism industry, AI applications, operations, and marketing, future research directions
Mariani and Wirtz (2023)	Int. Journal of Contemporary Hospitality Management	To undertake a thorough investigation of how extensively cognitive analytics has been addressed in the existing literature.	A systematic literature review	This research reviews the literature on the AICX, proposes a typology for AI-enabled technologies (AI-ETs), identifies gaps, and outlines future research in five key areas: conceptualisation, implementation, outcomes, consumer perspectives, and other thematic contexts.	-Secondary data was applied, so the findings lack validity. - The scope of this study differs from Nepal, so contextual adoption is not guaranteed. - Weak theoretical foundation.	Analytics, cognitive analytics, artificial intelligence, big data, hospitality, tourism
Knani et al. (2022)	Int. Journal of Hospitality Management	To examine the current status of tourism and artificial intelligence	A bibliometric analysis	The results outline four categories of research: motor themes (neural networks, data mining); basic themes (text mining, sentiment analysis, IoT, big data, COVID-AI); emerging themes (service robot experiences); and peripheral themes (tourism forecasting, AR/VR, biometrics).	- Relies on secondary data, has a weak theory, and shows limited, questionable results with little discussion on AI's role in tourism development. Focuses on AI, tourism, hospitality, bibliometric analysis, thematic mapping, and new tech trends.	Artificial Intelligence (AI), tourism and hospitality, bibliometric analysis, thematic mapping, and emerging technologies
Polo-Peña et al. (2025)	Int. Journal of Hospitality Management	To assess the existing research on how artificial intelligence (AI) affects tourist experiences and to identify possible avenues for future studies.	Mixed approach methods	This analysis examines how tourist experiences have changed in the experience economy, using performance evaluation and scientific mapping of research on AI-powered tourism experiences.	-Weak theoretical foundation. - Contextual adaptation of the results is not guaranteed. - No in-depth investigation due to bibliographic review. - Limited database focus.	Artificial intelligence, AI, experience economy, literature review, bibliometric analysis
Ghesh, Alexander Davis. (2023).	Tourism Review	Review academic research on AI-enabled customer experiences (AICX) to identify gaps and highlight future research opportunities.	Systematic Literature review	This study examines AI-enabled customer experiences (AICX), proposes a typology for categorising AI-enhanced technologies (AI-ETs), highlights existing knowledge gaps, and recommends future research directions centered on five main themes of emerging fields.	-Secondly, the data was used, so its findings cannot be applied to another context. - No triangulation method was employed. - Findings cannot be applied to the same context in different settings.	Customer experience, artificial intelligence, AI-enabled customer experience, AI-enabled technologies
Milwood, Hartman, and Roehl (2023).	Springer Proceedings in Business and Economics	To examine the degree to which AI tourism research acknowledges and manages ethical and social bias issues.	A scoping study of a review	The results reveal a strong potential for ethical and bias challenges in tourism AI, yet efforts by tourism scholars to identify and address them remain insufficient.	-Secondary data did not ensure the validity of the results. -Weak theoretical foundation. -Difficult to apply results in different contexts.	Artificial intelligence, tourism research, ethics, bias, scoping study.



Nannelli, Capone, and Lazzeretti (2023)	European Planning Studies	Aims to analyse the existing progress and anticipated evolution of AI and its tools within tourism.	A bibliometric analysis	The results highlight key areas, including Big Data for demand forecasting and customer satisfaction; AR and VR in co-creation; COVID-19, social distancing, and service robots; and emerging innovations in the tourism sector.	- Secondary data was used. - Inadequate analysis method. - Lack of sufficient theoretical background. - Not suitable for use in other contexts.	Artificial intelligence, hospitality and tourism industry, social network analysis, literature review
Gidumul et al. (2023)	Current Issues in Tourism	To understand the effects of AI on organisational operations that help stakeholders anticipate changes and leverage the resulting opportunities.	Mixed approach methods	The findings identify ten AI trends in hotel marketing, grouped into four themes. AI enhances internal processes by utilising data and content to boost competitiveness, support staff, and enable large-scale personalisation and customisation.	-Ethical Issues were not adequately addressed. -Implementation complexity and resource limitations. -Weak analysis tools. -Limited discussion on results.	AI, marketing, customisation, personalisation, innovation, big data
Zhu et al. (2024).	Current Issues in Tourism	This research examines how GenAI-generated images perpetuate stereotypical representations of tourist destinations.	Advanced analytics image	The findings indicate that GenAI often generates standardised visuals that overlook destination diversity, thereby perpetuating stereotypes.	-Weak theoretical foundation. -Weak research method. -Contextual adoption problem. -Lack of cross-check research method.	Generative artificial intelligence, destination image, image analytics, destination stereotype, bias
Samara, Magnisalis, and Peristeris (2020).	Journal of Hospitality and Tourism Technology	This paper examines and discusses the benefits and overall role of big data and artificial intelligence (BD AI) in the tourism sector, as reflected in recent literature.	A systematic literature review	Findings show that BDAI adds value to tourism when used effectively. Its adoption improves efficiency, productivity, and profitability for service providers, while offering travellers diverse and personalised experiences.	-Secondary data analysis. -Weak analysis tools. -Limited analysis of ethical challenges of AI in the tourism sector. -Weak theoretical foundation. -Absence of rigorous discussion.	Tourism, big data, artificial intelligence, business value, literature review, paper type
Putera et al. (2022).	Environment-Behaviour Proceedings Journal.	This research aims to assess the adequacy of the Personal Data Protection Act 2010 in addressing privacy challenges posed by AI.	The methodology and a case study	Ensuring robust privacy and security across all phases of the data lifecycle is vital for preventing legal exposure among tourism players while fostering customer trust.	-Poor analysis of data -Weak theoretical foundation. -Secondary database. -No critical analysis. -Disconnect the discussion part from the results.	Artificial intelligence and law, privacy and artificial intelligence, privacy engineering model, data protection and artificial intelligence
López Naranjo et al. (2025).	Frontiers in Artificial Intelligence	To examine how AI is applied in the tourism industry by identifying the key technologies in use, the areas and processes they support, along with their benefits and challenges.	Literature review methodology	Findings indicate that the primary AI technologies in tourism are Natural Language Processing (NLP) and neural network-based deep learning, with chatbots and models such as CNNs and LSTMs being particularly prominent.	-Secondary data was used. - Lack of scientific research methodology. - Weak theoretical foundation. - Weak discussion section and lack of critical analysis.	AI, tourism, optimisation, technology, machine learning



Chon and Hao (2025).	Tourism Review	The research aims to examine how technological progress has shaped tourism since the post-World War II era and to anticipate its influence through 2050.	Combining historical analysis and future projections	The study highlights key technological milestones that have significantly shaped the tourism industry, including the development of commercial aviation, the advent of the Internet, and the emergence of AI. Emerging technologies will likely continue to transform the industry, but concerns about sustainability, ethics, and inclusivity will remain central to its future growth.	-Secondary data was applied. -Limited analysis of results. -weak connection between results and discussion. -Not focused on the ethical issues of using AI in the tourism sector.	Tourism, technology, generative Web3.0, metaverse, artificial intelligence
deMatos et al. (2025)	Contributions to Management Science	To understand the challenges of using AI tools from a business perspective	Literature Methodology Review	Main ethical concerns in AI tourism include data privacy, consent, and transparency about AI's influence on tourist choices. Problems arise when travel data is reused for targeted advertising without permission, raising concerns about accountability and trust.	-Based on secondary data. -Absence of critical analysis. -A different contextual adaptation is not guaranteed. -Lack of coherence between the objective and the discussion results.	Challenges, artificial intelligence, business ethics, ethical perspective
Saura, Škarec, and Dosen (2024).	Journal of Innovation and Knowledge	To examine the ethical considerations of AI-driven digital marketing, with a particular emphasis on user privacy and data protection.	A systematic literature review	The results underscore the need for a balanced approach that protects privacy while promoting ethical data use in AI marketing. The study found no significant link between practices such as cross-device tracking and data technologies and ethics, despite their profitability.	-Based on secondary data. -No guarantee of the validity and reliability of results. -Lack of scientific research methods. -Weakness of the different contextual adaptability of results.	Artificial intelligence digital marketing ethics privacy multiple correspondence analysis,
Filieri et al. (2021).	Int. Journal of Contemporary Hospitality Management	This research analyses tourism-focused AI start-ups, the AI tech areas attracting venture capital, and the supply chain stages where these AI applications are most relevant.	Mixed methods approach	Most AI startups, primarily founded between 2015 and 2017 by male STEM graduates, are based in European capitals, including France, London, and Spain. Increased funding leads to more founders, experience, and better personalisation. Venture capital-backed AI mainly focuses on pre- and post-trip travel stages.	-Lack of geographical scope. Lack of long-term and profitability sustainability. -Weak comparative analysis. -weak focus on tourism development.	Artificial intelligence, tourism, AI tourism start-ups, travel and tourism industry.
Li, Du, and He (2022).	Wireless Communications and Mobile Computing	This research examines AI start-ups in the tourism sector, focusing on the technological domains that attract venture capital and the supply chain stages where AI applications have the greatest relevance.	Literature Methodology Review	The findings of this study indicate that tourism development at this natural heritage site is currently sustainable.	-Secondary data was used. No validity or reliability of results. -Weak critical analysis of the data. -Weak coherence between the research objective and the results discussion.	Heritage tourism, sustainable development, smart tourism, big data, artificial intelligence, tourism ecological footprint

Katsanakis et al. (2025)	The paper examines how smart tourism powered by big data and AI-contributes to the sustainable management and development of cultural heritage.	Qualitative interview.	The results show that AI enhances decision-making, cuts costs, and provides personalised services, but also raises concerns about job losses, data privacy issues, and ethical dilemmas. This highlights the importance of addressing ethical and legal AI issues in tourism to ensure responsible use of AI.	-The signal method was applied. -Lack of generalisability of results in qualitative research. -Sampling limitations. -Ethical issues of Semi-structured interview. Lack of comparative analysis in the results.	Artificial intelligence, tourism industry, customer experience, ethical considerations, workforce adaptation, process automation, strategic decision-making
Wang, Lahad, and Al-sharafi (2025)	This study offers a literature review highlighting the key opportunities and challenges of applying AI in the tourism sector.	Literature Methodology Review	Results show that AI enhances efficiency and satisfaction but poses challenges to its adoption. AI tools like ChatGPT, which handle sensitive data, pose a risk of hacking, potentially damaging customer trust and confidence.	-Lack of primary data. -No guarantee of the reliability and validity of the results. Lack of critical analysis of the results. Limitations on adopting the results in the same context.	Artificial Intelligence, AI tourism, opportunities, challenges -Lack of critical analysis of the results.

The results of this study have focused on analysing the repeated keywords, the research methods used in the articles, the sources of the journal articles, the key results, and the research gaps in the reviewed article (n = 24). The results are further enclosed, along with the main summary results (see Table 1).

What are the repeated popular keywords of the reviewed articles?

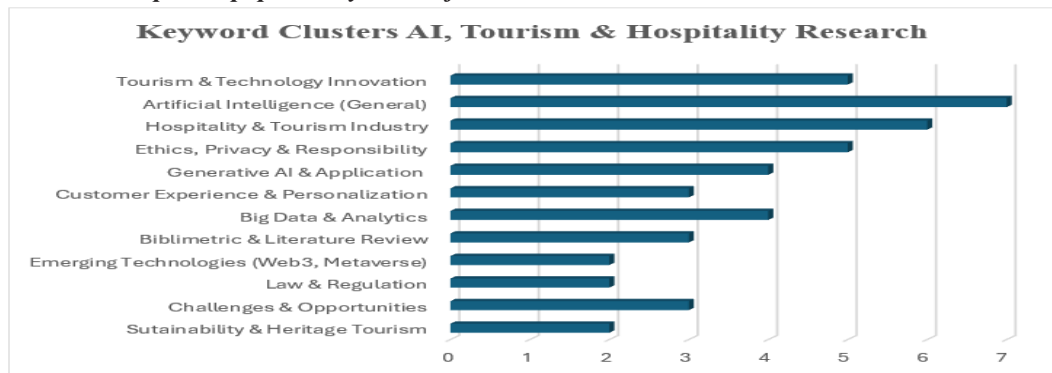


Figure 1. Summary of the Keywords Used in the Review Articles

The keyword analysis shows that “artificial intelligence” is the most common keyword, followed by “hospitality and tourism industry” and “ethics, privacy, and responsibility” (see Figure 1), which show where AI and tourism research could go parallerly in the future. Key areas of keywords include advanced AI technologies like generative AI, AI-enabled tools, machine learning, Web 3.0, and the metaverse; AI-enhanced customer experience focusing on personalisation, destination image, and stereotypes; cognitive insights, data analytics, and big data involving, cognitive and image analytics, and marketing; sustainability considerations, including ethics, AI bias, privacy, data protection, and legal frameworks; industry adaptation and stakeholder perspectives, which cover workforce adaptation and automation; research methods like literature review, bibliographic analysis, and meta-analysis; emerging business models and innovation, emphasising AI, startups, and digital marketing; and the social and cultural impacts of AI in tourism (see Figure 1).

What are the key research methods used in the reviewed articles?

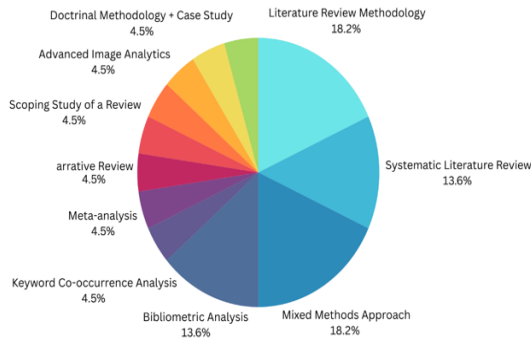


Figure 2. Summary of the Methodology Applied in the Selected Articles

The results show that the most frequently used methodology in the selected 24 articles was the literature review method (18.2%), followed by the mixed methods approach (18.2%), systematic review, and bibliographic analysis (13.6%). However, the other methods mentioned were equally applied in the review articles (see Figure 2).

What are the sources of journal articles in the reviewed articles?



Figure 3. Summary of the Resources of Selected Articles

The results show that the *Journal of Hospitality and Tourism Research* was the most popular publication in the selected 24 articles, which make the most considerable contribution to research on AI and tourism. Following it there were other source of publications. They are *Current Issue in Tourism*, *Springer Proceedings in Business and Economics*, *the International Journal of Hospitality Management*, and *the International*

Journal of Contemporary Hospitality and Tourism Review. The remaining publications contribute equally in the reviewed article (see Figure 3).

What are the key objectives of the reviewed articles?

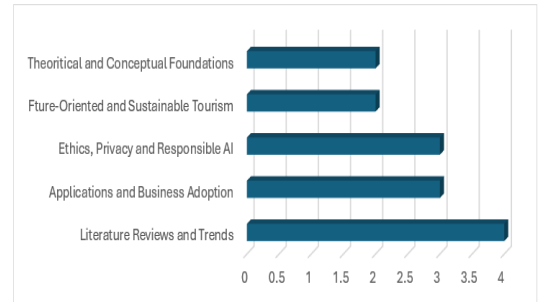


Figure 4. Summary of Main Objectives

The results show that the main objectives of the review 24 article were literature and trends, application and business adoption, ethics, privacy, and responsible AI, as well as future-oriented and sustainable tourism, and the theoretical and conceptual foundation of Tourism with AI tools, in chronological order (see Table 4). The next section summaries the key results of the review article.

What are the key results of the reviewed articles?

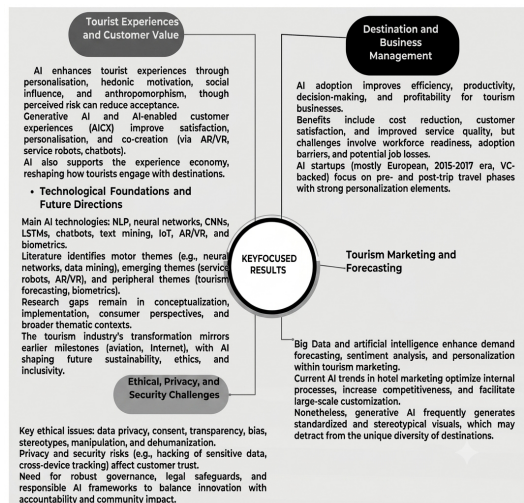


Figure 5. Summary of the Themes from the Key Results

The synthesis of 24 reviewed articles reveals five key thematic areas: tourist experience and customer value, technological foundations and

future directions, ethical, privacy, and security concerns, destination and business management, and tourism marketing and forecasting (see Figure 5).

Research Gaps

The review of current studies on AI in hospitality and tourism industry reveals different significant research gaps. First, the studies by Tuo et al. (2024), Yu et al. (2025) and Mariani and Wirtz (2023) demonstrated a substantial evidence gap, as they primarily relied on secondary data lacking empirical validation, leading to findings that lack reliability and validity. Similarly, the study by Kim et al. (2024) had issues of valid results because it made predictions without any real-world data to support their results. The studies by Knani et al. (2022), Kim et al. (2024), and Gidumal et al. (2023) identified a knowledge gap in their research, which is suffered from limited exploration of ethical implications, a weak relationship between AI and tourism development, and insufficient investigation of AI–tourism relationships beyond technological aspects. The other studies by Dogru et al. (2023) and Law et al., (2024) encountered the practical-knowledge gap, as adoption continues to be difficult due to contextual challenges, implementation complication, and resource constraints. Furthermore, their study suggested the guidelines in the literature have not been rigorously evaluated in real-world contexts.

Furthermore, the studies by Yu et al. (2025), Ghesh et al. (2023), and Samara et al. (2020), Mariani and Wirtz (2023) and Saleh (2025) highlighted a significant methodological gaps, as they did not apply rigorous scientific methods to collect data and relied on single-method approach, which lacked triangulation and adequate analytical tools and sufficient critical evaluation of the results. Furthermore, all the above mentioned studies were characterised by a homogeneous population, resulting in findings that were often constrained by geographic limitations and sample size, thereby threatening the generalisation of results to other contexts, such as from the European context to Nepal.

Previous studies of Knani et al. (2022), López

Naranjo et al. (2025), and Mariani and Wirtz (2023) frequently lacked large samples and further lacked a theoretical gap because of insufficient theoretical foundations. Similarly, the research by Putera et al. Chon and Hao (2025) and (2022) show a conceptual gap because their goals and findings don't match up, and they don't sufficiently focus on the application of AI in tourism industry. There is also gaps in research context because some settings were often left out. Furthermore, the results can't apply to different cultural, economic, regulatory environments, and industry problems like data quality and access aren't fully covered. Given the above mentioned limitations, a new primary study titled "The Role of AI to Enhance Tourism Industries" is sought.

Discussion, Conclusion, and Recommendations

Discussion

The roles of AI in improving the tourism industry and enhancing customer experience are a current global concern. However, the adoption of AI tools to advance the tourism sector has not received equal attention worldwide. This study aimed to review the literature on application of AI's role in tourism development and its stakeholders. It also sought to identify research gaps between previous studies in tourism academia and the current needs of the industry to better support industry stakeholders.

The studies by Tuo et al. (2024), Dogru et al. (2023), Saleh (2025), Kim et al. (2024), Ghesh and Alexander Davis (2023), Putera et al., (2022), de Matos et al. (2025) all show similar results, especially when it comes to the ethical issues that application of AI brings up in tourism. They point out that generative AI can make customer experiences better and make operations more efficient, but it needs good prompting, ethical practices, workforce training, and community considerations to be successful. However, the above mentioned studies could not contribute to examine the overall ethical implications of AI in tourism, and they are limited in their ability to examine at the specific situation in Nepal, which shows that it is important to do primary research in



different settings instead of just relying on existing studies (see Table 1).

Research studies by Dogru et al. (2023), Saleh (2025), Gidumal et al. (2023), and Katsanakis et al. (2025) indicate that AI can enhance personalisation, service quality, and decision-making within the tourism sector, ultimately benefiting tourists. Polo-Peña et al. (2025) and Samara et al. (2020) highlight that AI enables greater efficiency and more personalised experiences for tourists. Other studies by Dogru et al. (2023), Gidumal et al. (2023), Nannelli et al. (2023), and Knani et al. (2023) all noted that AI can help the tourism industry work better and be more competitive. López Naranjo et al. (2025) suggests that AI supports marketing strategies, enhances demand forecasting, and improves the industry's competitiveness.

Previous research by Law et al., (2024); Milwood et al. (2023); Zhu et al. (2024); Katsanakis et al. (2025); deMatos et al. (2025); Saura et al. (2024) highlighted ethical issues such as human job displacement, data manipulation, and AI bias that affect the issue of equality. Law et al. (2024) and Chon and Hao (2025) have prominently highlighted ethical issues specifically associated with the application of AI in the enhancement of tourism services. Additionally, studies by Yu et al. (2025), Polo-Peña et al. (2025), Ghesh et al., (2023), Li et al. (2022) and Kim et al. (2024) found research gaps, future directions, and AI's role in tourism, focusing on tourists' views on anthropomorphism, human interaction, and sustainability. Filieri et al. (2021) and Kim et al. (2024) emphasise the necessity for additional empirical evidence and robust methodologies to comprehensively comprehend the impact of AI on the tourism sector and ensure equitable benefits for all stakeholders.

The studies referenced concentrated on AI ethics and the advancement of the tourism sector. Nevertheless, their study even lacked to emphasise significant ethical dilemmas or associated with the implementation of AI in tourism development. Additionally, they overlooked the ethical challenges involved in AI implementation within the tourism sector. Moreover, the review studies

were conducted in developed countries, including the US, Finland, Germany, the UK, and Canada. In comparison, ethical considerations regarding the application of AI in tourism in Nepal have received little attention and have been rarely discussed. The author also highlights that many studies lacked to effectively address Nepal's specific context due to limitations that reduce their relevance in this context (see Table 1). There is an urgent need for more research on the roles, challenges, and opportunities of AI in Nepal's tourism sector.

Conclusion

The objective of this study was to review previous research on the challenges of AI use in the tourism industry and provide recommendations for future primary studies in the Nepalese context, with a focus on the current demand for AI in the tourism sector. A literature review method was employed to evaluate the role of AI in enhancing tourism research. This study is important for Nepal because no valid crucial studies have been conducted in this area. The results highlight that AI supports the growth of the tourism sector and helps meet customer demands, experiences, and facilities. However, the findings also reveal that earlier studies (see Table 1) have overlooked the ethical issues associated with the use of AI in tourism.

The results further indicate that the review of existing studies on AI in hospitality and tourism highlights key research gaps, which suffer from a clear evidence gap that heavily depends on secondary data without empirical validation, resulting in findings that lack reliability and validity. Likewise, the study also faced issues in offering predictions without supporting field data. Previous studies identified a knowledge gap in their research, which stemmed from limited exploration of ethical implications, a weak connection between AI and tourism development, and an inadequate investigation of AI-tourism relation beyond technological aspects.

This study has limitations, including the reliance on secondary data and a limited selection of articles on the roles of AI in supporting the tourism industry. Additionally, the analysis is based on a limited number of articles, which creates a gap in

critical analysis. The data from the selected articles were downloaded after obtaining the authors' and publishers' consent. The implications of this study benefit stakeholders in the tourism sector by emphasising the need for future primary research.

Recommendations

Future research needs to primarily focus on addressing the ethical challenges of AI to support tourism industries.

The primary research needs to be conducted in the Nepalese context to add to the literature in Nepalese academia on the roles of AI in tourism.

A larger sample study needs to be conducted to find rigorous and holistic data on AI roles in the tourism sector.

More focus has to be given on pure tourism data rather than mixed data of AI in the tourism business.

Future research needs to be conducted based on the triangulation method to ensure the validity and reliability of the results in different contexts.

A longitudinal study needs to be conducted in Nepal to understand the changing roles of AI in tourism development.

Further study is required to focus on the Nepalese context to understand the importance of AI in enhancing tourism development and increasing customer facilities.

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