

## Ethics and Privacy in the Tourism Industry During the Society 5.0 Era: A Systematic Literature Review

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### ABSTRACT

The tourism industry is particularly vulnerable to ethical violations, privacy breaches, and the misuse of personal data, especially amid rapid digital transformation. This study aims to identify research trends concerning privacy and ethics in tourism, examine the factors influencing these issues during travel, and explore the role of technology in supporting and transforming the tourism industry. A systematic literature review (SLR) was conducted using five academic databases: Scopus, ScienceDirect, the Directory of Open Access Journals (DOAJ), Springer, and Wiley Online Library. A total of 427 articles were initially identified, of which six met the established inclusion criteria following a systematic screening and selection process. The review focused on publications from 2019 onward, corresponding to the period associated with the emergence and development of Society 5.0. The findings indicate that existing research predominantly focuses on privacy-related issues, whereas ethical dimensions remain relatively underexplored, revealing a significant gap in the literature. The reviewed studies further demonstrate that digital technologies play an increasingly important role in transforming tourism practices while simultaneously creating new challenges related to privacy and ethical responsibility. This study contributes to the literature by synthesizing existing evidence on the interplay between privacy, ethics, and digital technology in the tourism ecosystem. The findings suggest that successful digital transformation in tourism requires not only technological advancement but also the integration of ethical principles and effective privacy protection to support responsible and sustainable tourism development.

**Keywords:** tourism; privacy; ethics; society 5.0; artificial intelligence.

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### INTRODUCTION

Society 5.0 was first introduced by the Japanese government through the Fifth Science and Technology Basic Plan in 2016 as a human-centered societal vision that integrates cyberspace and physical space to address complex social challenges through advanced digital technologies. Since its introduction, the concept has attracted increasing scholarly attention and has gradually influenced various sectors, including tourism. Within the tourism sector, the Society 5.0 paradigm emphasizes the integration of advanced

technologies to create more intelligent, connected, personalized, and human-centered tourism experiences. The interaction between tourism service providers and tourists is increasingly mediated by digital technologies. Advances in the Internet of Things (IoT) (Rajesh et al., 2022), big data (Lyu et al., 2022), artificial intelligence (Tussyadiah, 2020), and virtual reality experiences (Ponsignona & Derbaix, 2020) have fundamentally transformed the ways in which tourists plan, book, and experience their journeys. The application of information and communication technologies in tourism provides substantial benefits, including increased productivity, enhanced visitor experiences, and broader tourism development (We & Liu, 2023).

The rapid adoption of smart tourism technologies has consequently transformed tourism management and the ways in which tourism services are delivered and experienced. Artificial intelligence, big data analytics, IoT, and other emerging technologies enable tourism organizations to collect and process large volumes of information, personalize services, optimize operations, and facilitate real-time interactions with tourists. Nevertheless, technological advancement also creates new challenges that extend beyond technological performance and service quality. Existing studies tend to examine smart tourism technologies primarily from the perspectives of technological innovation, service quality, efficiency, and visitor experience, whereas ethical considerations and privacy concerns are frequently addressed as separate issues rather than as interconnected dimensions of the smart tourism ecosystem (Gong & Schroeder, 2022; Yallop et al., 2023). Such fragmentation limits a holistic understanding of how technological advancement can simultaneously generate opportunities and ethical risks for tourism stakeholders.

Privacy protection and ethical principles have therefore become increasingly important in the development of technology-enabled tourism. Tourism organizations routinely collect, process, store, and exchange substantial amounts of visitor information to provide personalized and efficient services. These data may include demographic characteristics, geographic location, transaction records, biometric information, and behavioral information generated through online and offline interactions. While such data can enhance the tourism experience, their extensive use also increases the potential for privacy violations, unauthorized access, secondary use, excessive surveillance, and other forms of data misuse. Privacy has consequently become an increasingly important concern for governments, industry, and individuals, particularly in the context of the commercialization of personal information and its potential use as a means of political control (Hall & Ram, 2020).

The ethical implications of digitalization in tourism extend beyond the responsibilities of tourism organizations. Tourists also play an important role in maintaining ethical and privacy standards during travel. The use of digital technologies can create situations in which tourists record other individuals without permission, misuse digital platforms, or engage in behaviors that interfere with the privacy and comfort of other visitors. In this context, responsible tourism requires a balance between the rights and responsibilities of tourism service providers and tourists. Tourism organizations are expected to protect personal information, comply with applicable data protection requirements, and ensure

fair and responsible data practices, while tourists are expected to respect ethical norms, privacy, local regulations, and the rights of other individuals. This reciprocal dimension is particularly relevant within the Society 5.0 paradigm, which emphasizes the integration of technology with human-centered social development.

The extensive collection and exchange of personal information also have implications for trust and the relationship between tourists and tourism organizations. Travelers are becoming increasingly aware of how their personal information is used for service personalization and other digital tourism practices (Yallop et al., 2023). At the same time, emerging technologies such as biometric identification, real-time monitoring, and advanced analytics introduce increasingly complex ethical considerations concerning the collection, processing, and use of visitor data. These technologies may enhance security, personalization, and operational efficiency, but they may also create concerns regarding surveillance, consent, transparency, fairness, and responsible data use. Previous research has shown that despite growing interest in the development of smart tourism destinations, data privacy and security remain major challenges (Ioannou et al., 2020). Smart tourism systems may capture demographic information, geographic location, transaction information, biometric information, and real-life and online behavioral information, thereby creating risks associated with information disclosure, secondary use, unauthorized analysis, and unacknowledged data sharing (Ioannou et al., 2020).

Ethical challenges are also evident in tourist behavior and interactions with local communities. Several incidents involving foreign tourists in Bali in 2023, for example, raised concerns regarding unethical behavior and non-compliance with local regulations, including traffic violations, unauthorized employment, and visa overstays. Such cases illustrate that responsible tourism cannot depend exclusively on technological systems or the governance practices of tourism organizations. Ethical awareness and respect for local norms among tourists are equally important for maintaining safety, social harmony, and sustainable tourism development. Accordingly, privacy and ethics in tourism should be understood as multidimensional issues involving tourism organizations, tourists, local communities, policymakers, and technological systems.

Despite growing scholarly interest in these issues, the existing literature remains fragmented. Previous studies have predominantly focused on specific dimensions, such as tourists' privacy concerns (Ioannou et al., 2020), organizational data governance (Yallop et al., 2023), or the adoption of smart tourism technologies (Hung et al., 2022). Existing review studies have likewise tended to emphasize smart tourism technologies, artificial intelligence applications, or data governance independently (Gong & Schroeder, 2022; Tussyadiah, 2020; Yallop et al., 2023). Consequently, the relationship between privacy, ethics, technological development, and human-centered tourism within the Society 5.0 context has not yet been sufficiently synthesized. In particular, limited systematic evidence is available regarding the theoretical foundations used to explain privacy and ethics in tourism, the factors influencing these issues, the technological applications associated with them, and the evolution of research in this field.

This fragmented knowledge represents an important research gap because technological transformation cannot be considered sustainable merely on the basis of technological sophistication. The development of smart tourism within Society 5.0 requires simultaneous attention to human values, ethical principles, privacy protection, and responsible technology use. A systematic synthesis of the existing literature is therefore necessary to clarify how these dimensions have been conceptualized and investigated across previous studies. Such a synthesis can also reveal dominant research themes, theoretical approaches, methodological tendencies, and underexplored areas that can guide future research.

Against this background, the present study conducts a systematic literature review of privacy and ethics in tourism during the Society 5.0 era. Unlike previous reviews that primarily examine smart tourism technologies, artificial intelligence, or data-related issues independently, this study brings privacy, ethics, technological development, and Society 5.0 together within a single review framework. The study examines publication trends, theoretical foundations, influencing factors, research methods, technological applications, and potential directions for future research. Theoretically, the study contributes by synthesizing fragmented discussions concerning privacy and ethics and identifying how these issues have been conceptualized within technology-enabled tourism. Practically, the findings provide insights for tourism organizations and policymakers seeking to develop tourism ecosystems that balance technological innovation with ethical responsibility and privacy protection. This integrated perspective provides a basis for understanding the development of responsible tourism in the Society 5.0 era.

Therefore, this study aims to systematically review the literature on privacy and ethics in tourism during the Society 5.0 era by identifying research trends, examining the theoretical foundations and factors associated with privacy and ethics, and exploring the technologies that support and transform tourism. To achieve these objectives, the study addresses the following research questions:

1. What are the prevailing research trends concerning privacy and ethics in tourism during the Society 5.0 era?
2. What theories or conceptual frameworks have been adopted to explain privacy and ethics in tourism?
3. What factors influence privacy and ethics in tourism?
4. What technologies support and transform tourism in relation to privacy and ethical considerations?

## **METHOD**

### **Research Design**

This study employed a Systematic Literature Review (SLR) to systematically examine research on ethics and privacy in the tourism sector during the Society 5.0 era. An SLR was selected because it provides a structured, transparent, and reproducible approach for identifying, screening, evaluating, and synthesizing relevant scholarly evidence. The

review process was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework, which comprises four principal stages: identification, screening, eligibility assessment, and inclusion. The overall article selection process is presented in the PRISMA flow diagram in Figure 1.

The literature search was conducted across five academic databases: Scopus, ScienceDirect, the Directory of Open Access Journals (DOAJ), Springer, and Wiley Online Library. These databases were selected to provide broad coverage of peer-reviewed research in tourism, management, technology, ethics, and privacy. The review focused on publications from January 2019 to June 2023 to capture research emerging during the period in which Society 5.0 gained increasing attention and its implications for technology-enabled tourism became more relevant.

### **Literature Search Strategy**

A structured keyword search strategy was developed to identify studies addressing ethics and privacy within the tourism context. The search string applied across the selected databases was:

("tourism") AND ("privacy" OR "ethics" OR "ethical")

The Boolean operator OR was used to broaden the search by incorporating alternative terms associated with ethics and privacy, whereas AND was used to combine the tourism concept with the focal issues of the review. The search strategy was intentionally designed to balance comprehensiveness and relevance by capturing studies that explicitly addressed privacy, ethics, or ethical considerations in tourism. The initial search across the five databases yielded 427 records.

### **Inclusion and Exclusion Criteria**

Explicit inclusion and exclusion criteria were established before the screening process to ensure consistency in the selection of relevant studies. Studies were included when they met all of the following criteria: (1) published between January 2019 and June 2023; (2) classified as research articles; (3) published in peer-reviewed academic journals; (4) written in English; (5) addressing ethics, privacy, data protection, or the use of digital technology in the context of tourism; and (6) indexed within the Business, Management, and Accounting subject area.

The starting point of January 2019 was selected to focus the review on the recent development of research concerning ethics and privacy alongside the growing adoption of advanced digital technologies in tourism. This period is particularly relevant to the development of Society 5.0-oriented research, in which human-centered digital transformation has become increasingly prominent. The restriction to the Business, Management, and Accounting subject area was applied to maintain a clear analytical focus on tourism management, organizational practices, managerial decision-making, customer data management, and the ethical implications of digital technology adoption in tourism.

Studies were excluded if they (1) did not address ethics or privacy within the tourism context; (2) were conference proceedings, books, book chapters, editorials, or review

articles; (3) were not written in English; or (4) were determined to be outside the scope of the research objectives following title, abstract, or full-text assessment.

### Screening and Article Selection

The literature selection process was conducted systematically in accordance with the PRISMA framework. The initial database search produced 427 records. Following the application of the predefined bibliographic and subject-area restrictions, 23 articles remained for preliminary screening. These articles were subsequently assessed for topical relevance through title and abstract screening.

The second stage involved a full-text assessment of the remaining studies. At this stage, each article was examined against the predefined inclusion and exclusion criteria and evaluated according to its relevance to the research objectives and research questions. Articles that did not provide sufficient discussion of ethics, privacy, or related technological issues within the tourism context were excluded. Following the full-text assessment, six articles satisfied all eligibility requirements and were retained for the final qualitative synthesis. Figure 1 presents the complete article identification, screening, eligibility, and inclusion process.

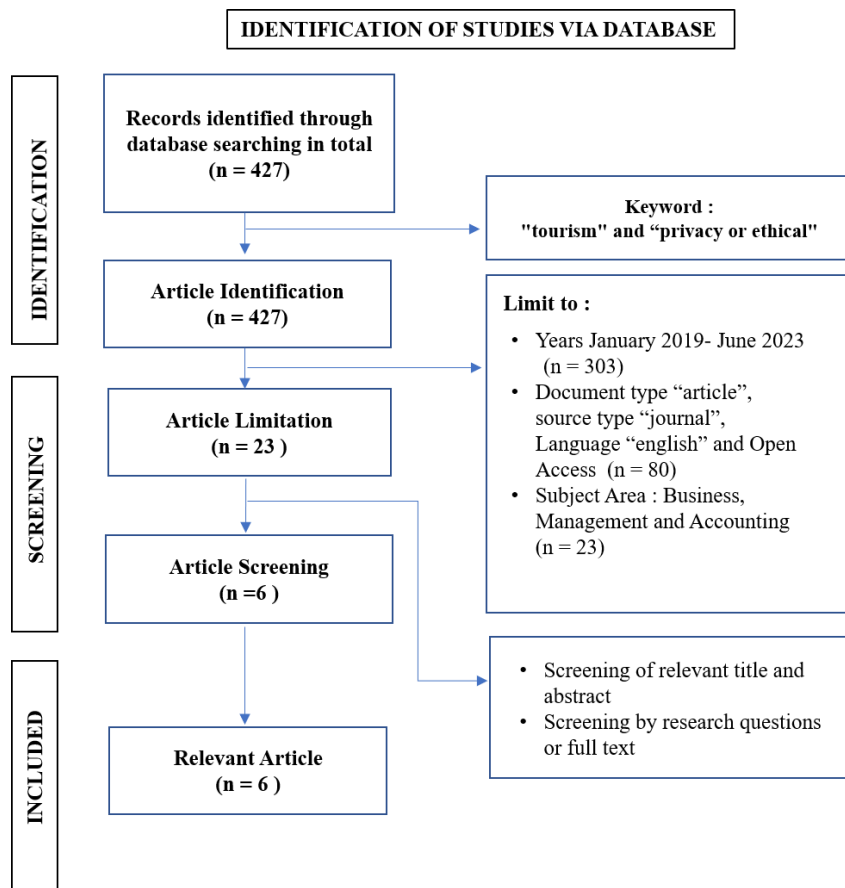


Figure 1. PRISMA flowchart

### **Quality Assessment**

A quality assessment was conducted to evaluate the methodological rigor and relevance of the studies included in the final synthesis. Each article was assessed according to five criteria: (1) clarity of the research objectives; (2) appropriateness of the research methodology; (3) transparency of the data collection and analysis procedures; (4) relevance of the findings to ethics and privacy issues in tourism; and (5) clarity of the conclusions and research implications.

The quality assessment was used to support the consistency and credibility of the synthesis rather than to assess the general academic quality of the journals in which the studies were published. Articles were retained when they demonstrated sufficient methodological clarity, substantive relevance, and alignment with the objectives of this review. Studies that failed to provide adequate methodological information or did not sufficiently address the central issues of ethics and privacy in tourism were excluded from the final synthesis.

### **Data Extraction and Synthesis**

For each eligible article, relevant information was systematically extracted and organized according to the objectives of the review. The extracted information included publication year, research focus, theoretical or conceptual framework, research methodology, factors associated with ethics and privacy, technological applications, and major findings. The extracted evidence was subsequently compared across studies to identify recurring themes, research patterns, theoretical perspectives, technological developments, and areas that remain insufficiently explored.

Given the limited number of studies that met the eligibility criteria, the synthesis was conducted qualitatively rather than through statistical meta-analysis. The qualitative synthesis enabled the study to integrate findings across different research designs and identify broader patterns concerning privacy and ethics in tourism during the Society 5.0 era. This approach also provided a basis for identifying research gaps and formulating directions for future research.

## **RESULTS AND DISCUSSION**

### **Review Findings**

The systematic screening and selection process resulted in six articles that met all predefined inclusion and exclusion criteria. The selected studies were published across six different journals, as presented in Table 1, with each journal contributing one article. The distribution includes the International Journal of Hospitality Management, Journal of Tourism Futures, Tourism Geography: An International Journal of Tourism Space, Place and Environment, Cleaner Logistics and Supply Chain, Government Information Quarterly, and Annals of Tourism Research. This distribution indicates that research addressing ethics and privacy in tourism is dispersed across several scholarly domains rather than concentrated within a single journal or disciplinary outlet. The selected publications span tourism and hospitality, tourism futures, tourism geography, logistics

and supply chain, government information systems, and tourism research, reflecting the multidisciplinary nature of ethical and privacy issues associated with digital transformation in tourism. The diversity of publication outlets also demonstrates that the subject intersects with technological, organizational, managerial, geographical, and governance perspectives.

Table 1. Journal Source

| Journal Source                                                                      | Counts |
|-------------------------------------------------------------------------------------|--------|
| International Journal of Hospitality Management                                     | 1      |
| Journal Of Tourism Futures                                                          | 1      |
| Tourism Geography: An International Journal of Tourism Space, Place and Environment | 1      |
| Cleaner Logistics and Supply Chain                                                  | 1      |
| Government Information Quarterly                                                    | 1      |
| Annals of Tourism Research                                                          | 1      |

The methodological characteristics of the selected studies are summarized in Table 2. The six studies demonstrate methodological diversity, encompassing qualitative, quantitative, literature-based, and mixed-methods approaches. One study employs a qualitative netnographic approach, while another applies a quantitative online survey using a structured questionnaire. Three studies adopt literature-based approaches, including a scoping review, a conceptual literature review, and a comprehensive literature review. In addition, one study uses a mixed-methods design that combines a systematic review of the literature, in-depth interviews, and data-mining techniques. This distribution indicates that research on ethics, privacy, and digital technologies in tourism has developed through both empirical and conceptual investigations. The empirical studies provide insights into user and consumer behavior in technology-enabled tourism contexts, whereas the literature-based studies contribute broader conceptual perspectives on artificial intelligence, data governance, ethics, security, and technological development. The mixed-methods study further demonstrates the value of integrating evidence from multiple methodological sources to examine complex technological and governance-related issues. Overall, the methodological diversity of the selected studies provides a multidimensional foundation for understanding how ethical, privacy, and technological concerns intersect within contemporary tourism and digital environments.

Table 2. Methodological Approaches in Prior Studies

| Approach / Category  | Specific Method / Technique | Source                           |
|----------------------|-----------------------------|----------------------------------|
| Qualitative Approach | Netnography                 | (Jeffrey, Ashraf, & Paris, 2019) |

| Approach / Category    | Specific Method / Technique                                                      | Source                                             |
|------------------------|----------------------------------------------------------------------------------|----------------------------------------------------|
| Quantitative Approach  | Online survey (Questionnaire)                                                    | (Talwar, Dhir, Kaur, & Mäntymäki, 2020)            |
| Literature Review      | Scoping Review                                                                   | (Yallop, Gica, Moisescu, Coros, & Seraphin, 2023)  |
|                        | Conceptual Literature Review                                                     | (Tussyadiah, 2020)                                 |
|                        | Comprehensive Literature Review                                                  | (Singh, Elmi, Meriga, Pasha, & Dulebenets, 2022)   |
| Mixed Methods Approach | Systematic review of the literature, In-depth interviews, Data-mining techniques | (Saura, Ribeiro-Soriano, & Palacios-Marques, 2022) |

The methodological diversity identified in Table 2 is also reflected in the thematic focus of the selected studies. As presented in Table 3, the literature converges around several interconnected issues involving artificial intelligence and data-driven technologies, privacy and ethical governance, and consumer responses to technology-enabled tourism. These methodological and thematic patterns collectively demonstrate that ethics and privacy in tourism are not limited to a single technological or behavioral dimension but involve interactions among technological capabilities, data practices, governance mechanisms, and user perceptions.

The first thematic pattern concerns the growing application of artificial intelligence and data-driven technologies in tourism-related environments. Jeffrey, Ashraf, and Paris (2019), using a netnographic approach, examine behavioral-based artificial intelligence and its implications for privacy, particularly in relation to data collection, population monitoring, and regulatory challenges. Similarly, Saura, Ribeiro-Soriano, and Palacios-Marques (2022) investigate behavioral-based AI and its implications for user privacy through a mixed-methods approach. The convergence of these studies suggests that the increasing capacity of AI systems to collect, process, and analyze behavioral information creates significant concerns regarding how personal data are obtained, interpreted, and utilized. The methodological differences between the two studies are particularly valuable because they provide complementary perspectives: qualitative investigation captures contextual and behavioral dimensions, while the mixed-methods design integrates multiple sources of evidence to address broader technological and governance issues.

The second thematic pattern relates to privacy, ethics, security, and data governance in technology-enabled tourism environments. Tussyadiah (2020), through a conceptual literature review, highlights ethical, privacy, and security concerns associated with the application of artificial intelligence and robotics in tourism. Yallop et al. (2023), through a scoping review, extend this discussion by examining data governance and ethical considerations in tourism and hospitality, particularly in relation to the management and use of customer information. Together, these studies indicate that technological innovation generates governance challenges alongside its potential benefits. Privacy protection, ethical data management, transparency, accountability, and appropriate

governance mechanisms therefore emerge as recurring concerns across the literature. The literature-based approaches adopted by these studies are particularly relevant because they synthesize fragmented discussions and provide a broader conceptual foundation for understanding the governance implications of emerging tourism technologies.

The third thematic pattern concerns consumer resistance and technology acceptance. Talwar et al. (2020), using a quantitative online survey, examine consumer resistance to online travel agencies and demonstrate that privacy concerns represent an important consideration in consumers' responses to digital tourism services. This finding connects privacy with broader behavioral dimensions, including consumer acceptance, trust, perceived risk, and willingness to engage with technology-enabled tourism platforms. Unlike the conceptual and qualitative studies, the quantitative approach provides empirical evidence concerning the relationship between privacy-related concerns and consumer responses, thereby strengthening the behavioral dimension of the reviewed literature.

Finally, Singh et al. (2022), although focusing on cleaner railway logistics and supply chains rather than tourism services directly, provide complementary insights into the technological infrastructure relevant to smart and connected tourism ecosystems. Their comprehensive literature review addresses issues including security and privacy, interoperability and standardization, scalability and reliability, wireless communication, energy consumption, and ethical, legal, and regulatory considerations. These dimensions are relevant to tourism because increasingly interconnected tourism ecosystems depend on digital infrastructure capable of securely exchanging and processing large volumes of data across multiple actors and platforms. Consequently, the study broadens the discussion beyond individual tourism applications toward the infrastructural and systemic conditions required for responsible digital transformation.

Taken together, the methodological and thematic evidence presented in Tables 2 and 3 demonstrates that ethics and privacy in tourism constitute a multidimensional research domain. The selected studies approach the issue from qualitative, quantitative, conceptual, review-based, and mixed-methods perspectives, while their thematic findings consistently point to the interdependence of artificial intelligence, data-intensive practices, privacy protection, ethical governance, technological infrastructure, and user responses. This convergence suggests that future research should move beyond examining privacy or ethics as isolated concerns and instead consider how technological capabilities, governance arrangements, and stakeholder behavior jointly shape responsible digital transformation in tourism.

Table 3. Research Themes and Issues

| Research Theme                                                                                                                                       | Issues Explored                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Source                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| The use of artificial intelligence (AI) in government settings                                                                                       | AI implementation in government strategies, Privacy concerns linked to the use of behavioral-based AI by governments, AI techniques applied for predicting societal behavior, AI's role in population control and monitoring, Utilization of AI during crises or exceptional circumstances, Importance of regulations and ethical considerations in collecting and managing user/citizen data, Challenges and vulnerabilities related to AI usage in government settings. | (Jeffrey, Ashraf, & Paris, 2019)                   |
| The application of intelligent automation in the tourism industry                                                                                    | The ethical, privacy and security concerns associated with AI and robotics in tourism and The impact of artificial intelligence (AI) on the tourism industry.                                                                                                                                                                                                                                                                                                             | (Tussyadiah, 2020)                                 |
| Understanding Consumer Resistance to Online Travel Agencies                                                                                          | Consumer resistance to online travel agencies (OTAs) and the barriers that contribute to this resistance                                                                                                                                                                                                                                                                                                                                                                  | (Talwar, Dhir, Kaur, & Mäntymäki, 2020)            |
| The role of data governance and ethics in the tourism and hospitality industry, specifically in relation to the use of customer data and information | The issues related to data governance, privacy, and ethics in the context of the tourism and hospitality industry, emphasizing the need for ethical data management practices and the development of frameworks that encompass privacy and ethics.                                                                                                                                                                                                                        | (Yallop & Seraphin, 2020)                          |
| The use of artificial intelligence (AI) by governments and its impact on user privacy                                                                | The use of behavioral-based artificial intelligence (AI) by governments and its impact on citizens' privacy.                                                                                                                                                                                                                                                                                                                                                              | (Saura, Ribeiro-Soriano, & Palacios-Marques, 2022) |
| Cleaner Logistics and Supply Chain                                                                                                                   | Security and privacy, Interoperability and standardization, Scalability and reliability, Energy consumption and hardware requirements, Wireless communication challenges, Ethical, legal, and regulatory issues                                                                                                                                                                                                                                                           | (Singh, Elmi, Meriga, Pasha, & Dulebenets, 2022)   |

The theoretical foundations and analytical perspectives identified in the reviewed literature are presented in Table 4. The selected studies draw on a range of theoretical and conceptual perspectives, including Behavioral Data Science (BDS), Innovation Resistance Theory (IRT), surveillance capitalism, regulatory frameworks, data governance, big data, technology adoption, consumer behavior, ethical consumption, gender, and Internet of Things (IoT) perspectives. However, the distribution indicates that no single theoretical framework dominates the literature. Instead, the theoretical foundations are closely associated with the specific research problem addressed in each study. BDS is used to understand behavioral data and its implications for privacy, while IRT provides a basis for explaining consumer resistance to digital tourism services. Surveillance capitalism and regulatory perspectives address broader questions concerning data control and institutional governance, whereas data governance provides a framework for understanding the responsible management of customer information. Other perspectives, including consumer, technology adoption, ethical consumption, and gender perspectives, provide additional lenses for understanding users' responses to technology-enabled tourism.

Table 4. Theories, Models &amp; Perspectives

| Theory, Models & Perspectives                                                                                                                  | Source                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| <b>Theory/Paradigm</b>                                                                                                                         |                                                   |
| Behavioral Data Science (BDS)                                                                                                                  | (Jeffrey, Ashraf, & Paris, 2019)                  |
| Innovation resistance theory (IRT)                                                                                                             | (Talwar, Dhir, Kaur, & Mäntymäki, 2020)           |
| <b>Models/Frameworks</b>                                                                                                                       |                                                   |
| Surveillance capitalism, Regulatory framework                                                                                                  | (Jeffrey, Ashraf, & Paris, 2019)                  |
| The concept of data governance                                                                                                                 | (Yallop, Gica, Moisescu, Coros, & Seraphin, 2023) |
| <b>Perspectives</b>                                                                                                                            |                                                   |
| The concepts of big data, data governance, and data ethics in the context of the tourism                                                       | (Yallop, Gica, Moisescu, Coros, & Seraphin, 2023) |
| Innovation resistance perspective, Consumer perspective, Technology adoption perspective, Ethical consumption perspective, Gender perspective. | (Talwar, Dhir, Kaur, & Mäntymäki, 2020)           |
| Internet of Things (IoT) technologies in the railway industry                                                                                  | (Singh, Elmi, Meriga, Pasha, & Dulebenets, 2022)  |

The synthesis further identifies several factors associated with privacy and ethical considerations in tourism, as summarized in Table 5. These factors include personal security, control over personal information, protection against discrimination or negative judgment, and data security. The findings indicate that privacy-related concerns encompass both individual-level perceptions and technology- or organization-level safeguards. At the individual level, concerns about personal security and control over

personal information reflect users' expectations regarding how their information is collected, processed, and used. Concerns about discrimination or negative judgment further indicate that the consequences of data use may extend beyond information security to broader social and behavioral implications. At the organizational and technological levels, data security represents an essential mechanism for protecting personal information and reducing the risks associated with unauthorized access or misuse. Collectively, these factors demonstrate that privacy and ethics in tourism are influenced by the interaction between users' expectations regarding their personal information and the ability of tourism-related organizations and digital systems to provide adequate protection.

Table 5. Various Factors Influence Privacy and Ethics in Tourism

| Factors                                                                                                                         | Source                |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Personal Security, Control over Personal Information, Personal Security, Protection against Discrimination or Negative Judgment | Jeffrey et al. (2019) |
| Data Security                                                                                                                   | Talwar et al. (2020)  |

The technologies identified across the reviewed studies are presented in Table 6. Four major technology categories emerge: big data and analytics, online travel agencies (OTAs), artificial intelligence (AI), and the Internet of Things (IoT). Big data and analytics support the collection and analysis of tourism-related information and enable stakeholders to derive insights from large volumes of data. OTAs function as important digital platforms connecting tourists with tourism service providers and facilitating information search, transactions, and service interactions. AI contributes to intelligent automation, prediction, personalization, and decision support, while IoT enables connectivity among devices, infrastructure, and services. These technologies represent different but interconnected components of digital tourism development. Their application can improve service efficiency, personalization, connectivity, and decision-making; however, their increasing reliance on personal and behavioral data also reinforces the importance of privacy and ethical considerations. The findings therefore indicate that technological development in tourism is closely linked to the management of information and the protection of users' rights.

Table 6. Technology Support in Tourism

| Technology                    | Source                                           |
|-------------------------------|--------------------------------------------------|
| Big data and analytics        | (Yallop & Seraphin, 2020)                        |
| Online travel agencies (OTAs) | (Talwar, Dhir, Kaur, & Mäntymäki, 2020)          |
| Artificial Intelligence       | (Tussyadiah, 2020)                               |
| Internet of Things            | (Singh, Elmi, Meriga, Pasha, & Dulebenets, 2022) |

Taken together, the findings across Tables 1–6 reveal that research on ethics and privacy in tourism remains relatively limited and dispersed across different disciplinary outlets, methodological approaches, theoretical perspectives, and technological contexts. The reviewed literature consistently connects digital technology adoption with privacy, ethical, security, and governance concerns, while also demonstrating the importance of

consumer perceptions and responses to technology-enabled tourism services. At the same time, the theoretical perspectives remain heterogeneous, and the reviewed studies do not yet converge on a unified framework that simultaneously connects technological development, privacy protection, ethical considerations, governance mechanisms, and user responses. The results consequently indicate an emerging but fragmented research domain in which technological innovation, privacy, and ethics are increasingly interconnected. This pattern provides the basis for further discussion of the theoretical implications, research gaps, and future research directions concerning responsible tourism development during the Society 5.0 era.

## Discussion

The findings demonstrate that privacy and ethics have become increasingly important dimensions of tourism digitalization in the Society 5.0 era. The reviewed literature indicates a clear evolution from an earlier emphasis on technological efficiency and service enhancement toward a broader concern with the social, ethical, and governance implications of technology-mediated tourism. The increasing integration of artificial intelligence (AI), big data and analytics, the Internet of Things (IoT), and online travel agencies (OTAs) has created opportunities for personalized services, intelligent decision-making, seamless connectivity, and operational efficiency. At the same time, these developments have intensified concerns regarding privacy, data security, algorithmic bias, surveillance, discrimination, transparency, and user autonomy. Privacy and ethics therefore increasingly appear not as peripheral issues but as fundamental conditions for the responsible development and long-term sustainability of smart tourism ecosystems. One of the most prominent developments in the literature is the growing attention to artificial intelligence and automated decision-making in tourism. AI is increasingly applied to tourism planning, government strategies, online platforms, recommendation systems, customer service, and personalized experiences. Its capacity to process large volumes of information and generate predictive or automated decisions has strengthened the ability of tourism organizations to respond to changing consumer preferences. However, the increasing autonomy of AI systems also introduces ethical challenges that extend beyond conventional concerns about data protection. Algorithmic bias, for example, may cause recommendation systems to systematically favor particular destinations, businesses, or consumer groups while reducing the visibility or opportunities of others. Such outcomes raise concerns about fairness, inclusiveness, and accountability within smart tourism ecosystems. Consequently, AI adoption should not be evaluated exclusively in terms of efficiency or predictive accuracy but also according to whether automated decisions are transparent, explainable, fair, and subject to appropriate human oversight.

The ethical implications of AI, robotics, and IoT constitute another increasingly visible theme. As tourism organizations become more dependent on interconnected technologies, they collect increasingly detailed information concerning tourists' identities, preferences, transactions, movements, and behaviors. This creates significant opportunities for personalization and service optimization but simultaneously increases the potential for unauthorized access, secondary use of information, profiling, and excessive surveillance. The literature consequently emphasizes the importance of ethical

data governance, privacy protocols, security mechanisms, and responsible management of customer information. Importantly, ethical technology governance extends beyond regulatory compliance. It requires tourism organizations to establish transparent data practices, meaningful consent mechanisms, clear accountability, and safeguards that preserve tourists' autonomy throughout the data lifecycle.

The increasing interest in explainable AI further reflects this shift toward responsible technology. Automated recommendations and decisions can directly influence destination selection, pricing, service personalization, and consumer behavior. When tourists cannot understand how these decisions are produced, technological opacity may undermine confidence in digital tourism services. Explainability can therefore function as an important mechanism for strengthening transparency and trust. In this context, ethical AI should be understood not merely as a technical characteristic but as part of a broader governance mechanism through which tourism organizations demonstrate accountability for automated decisions. The development of explainable and human-centered AI is particularly consistent with the principles of Society 5.0, which emphasize the integration of technological advancement with human well-being.

Another important theme concerns the relationship between privacy concerns, consumer resistance, perceived control, and trust. The literature shows that tourists may hesitate to adopt digital tourism services when they perceive excessive data collection, inadequate security, limited control over personal information, or a lack of transparency concerning data use. However, privacy concerns do not necessarily result in technology rejection. Tourists may continue to disclose personal information when the perceived benefits of digital services—including convenience, personalization, faster transactions, and seamless experiences—are considered greater than the perceived privacy risks. This phenomenon reflects the privacy paradox and highlights the importance of understanding privacy decisions as a dynamic evaluation of benefits, risks, and trust. From this perspective, tourism organizations must recognize that consumer trust cannot be established simply by providing privacy policies; it depends on whether users perceive that organizations genuinely protect and responsibly manage their personal information.

These findings can be further understood through information privacy theory, which provides a useful conceptual foundation for explaining tourists' information disclosure and technology-related decisions. The theory suggests that individuals' willingness to disclose personal information is influenced by the perceived benefits associated with disclosure, perceived privacy risks, and trust in the organization collecting and processing the information. This perspective is particularly relevant to smart tourism because digital services frequently require tourists to exchange personal information for enhanced convenience and personalization. The privacy paradox can consequently be interpreted as a situation in which perceived benefits are sufficiently strong to outweigh perceived privacy risks. The findings also indicate that trust represents an important mechanism through which privacy expectations are translated into technology acceptance and continued engagement.

A complementary socio-technical perspective provides a broader explanation of privacy and ethics in tourism. From this perspective, ethical outcomes do not originate exclusively from technological characteristics but emerge from interactions among

technological systems, organizational practices, institutional regulations, and human behavior. Privacy protection, for example, cannot be achieved solely through encryption or access-control mechanisms if organizational policies permit excessive data collection or opaque secondary use. Similarly, algorithmic fairness depends not only on the technical design of an AI system but also on the quality of training data, organizational objectives, monitoring mechanisms, and accountability structures. This perspective is particularly appropriate for Society 5.0 because tourism technologies are increasingly embedded within complex ecosystems involving tourists, businesses, governments, platforms, and digital infrastructures.

Several interconnected factors emerge as particularly important in shaping privacy and ethical perceptions in tourism. Personal security represents one fundamental consideration, as tourists expect their identities and personal information to remain protected from misuse and unauthorized access. This expectation becomes increasingly important as digital tourism platforms accumulate information that can reveal not only consumer preferences but also movement patterns, transaction histories, and behavioral characteristics. Perceived security therefore affects tourists' confidence in participating in digitally mediated tourism experiences.

Control over personal information constitutes another critical dimension. Tourists increasingly expect to know what information is collected, why it is collected, how long it is retained, and with whom it is shared. They also expect meaningful opportunities to provide or withdraw consent. These expectations place greater emphasis on user autonomy and transparency. Privacy governance should therefore move beyond lengthy and difficult-to-understand privacy statements toward accessible mechanisms that enable tourists to exercise genuine control over their information. Greater perceived control can strengthen trust and reduce resistance to digital tourism services. Protection from discrimination is equally important as tourism organizations increasingly rely on algorithms to classify users, personalize recommendations, determine visibility, and potentially influence prices or service availability. Data-driven systems may unintentionally reproduce existing social inequalities when particular characteristics or behavioral patterns become proxies for discriminatory decisions. Ethical tourism technology consequently requires mechanisms for identifying, evaluating, and mitigating algorithmic bias. Fairness should be incorporated throughout the development and deployment of digital systems rather than addressed only after discriminatory outcomes become visible.

Data security represents another fundamental component of responsible tourism digitalization. The increasing scale, variety, and interconnectedness of tourism data creates greater exposure to cyberattacks, unauthorized access, data breaches, and misuse. However, technological security measures should be complemented by organizational governance, employee awareness, risk management, and continuous monitoring. Data security should therefore be viewed as an integral element of ethical data governance rather than merely as a technical safeguard.

The technological landscape identified in the literature further illustrates the close relationship between innovation and ethical responsibility. Big data and analytics provide tourism organizations with the capacity to analyze extensive information regarding traveler preferences, purchasing patterns, mobility, reviews, and destination

behavior. These capabilities support demand forecasting, destination management, targeted marketing, and personalized services. Nevertheless, increasingly sophisticated analytics also enable more intensive profiling and inference. The greater the analytical capability of tourism organizations, the greater the need for transparent data practices and clearly defined boundaries concerning the use of personal information.

AI similarly represents a transformative technology because it supports natural language processing, image recognition, predictive analytics, automated customer service, recommendation systems, and decision-making. Its value for tourism lies in its ability to provide adaptive and personalized services at scale. Nevertheless, AI can introduce opacity and bias when decisions are difficult to explain or when automated systems reproduce patterns embedded in historical data. Responsible AI implementation consequently requires explainability, fairness, human oversight, and clearly defined accountability.

The Internet of Things expands these possibilities by connecting physical and digital tourism infrastructures, including hotels, transportation systems, attractions, mobile devices, payment systems, and smart facilities. IoT enables real-time information exchange, automated hotel services, location-based assistance, and integrated tourist experiences. However, ubiquitous connectivity also creates new privacy risks because devices can continuously generate information about users and their environments. Without appropriate safeguards, IoT-enabled tourism may develop into forms of continuous monitoring. Privacy-by-design, data minimization, secure connectivity, and transparent consent are therefore essential to ensure that IoT contributes to smart tourism without compromising individual autonomy.

Online travel agencies and other digital platforms constitute another important dimension of tourism transformation. OTAs facilitate destination search, accommodation and transportation booking, payment, price comparison, and access to consumer reviews. Their convenience depends heavily on the collection and analysis of user data, making them an important context for understanding the interaction between privacy, trust, personalization, and consumer resistance. The increasing dependence on platform-based tourism therefore creates a need for transparent data practices, secure transactions, responsible personalization, and greater user control.

The convergence of these technologies indicates that smart tourism is evolving toward highly interconnected and data-intensive ecosystems. This transformation creates substantial benefits but also introduces the risk of surveillance capitalism, in which personal and behavioral data become valuable economic resources. Smart tourism organizations may therefore face a tension between maximizing the commercial value of data and preserving individual privacy and autonomy. Ethical governance should address this tension by establishing clear limitations on data collection, ensuring purpose-specific processing, strengthening accountability, and preventing the unnecessary commercialization of personal information.

The findings also suggest that digital inequality should be incorporated into discussions of privacy and ethics in Society 5.0 tourism. Differences in digital literacy, access to devices, internet connectivity, and technological infrastructure may result in unequal opportunities to benefit from smart tourism services. Tourists who have limited digital capabilities may be less able to understand privacy settings, exercise informed consent,

or access digitally mediated services. Consequently, human-centered digital tourism requires not only secure and ethical technologies but also inclusive policies that ensure equitable access and participation. Ethical tourism transformation should therefore consider both the protection of users from technological risks and their ability to meaningfully participate in technology-enabled tourism.

Overall, the evidence suggests that privacy and ethics should be positioned at the core of responsible smart tourism development. The integration of AI, big data, IoT, and digital platforms has transformed tourism into an increasingly data-driven ecosystem in which technological innovation and ethical responsibility are inseparable. The major concerns identified in the literature—including algorithmic bias, privacy paradox, surveillance, explainable AI, data governance, discrimination, and digital inequality—demonstrate that technological advancement alone cannot guarantee sustainable tourism transformation. Instead, technological development must be accompanied by governance mechanisms that promote transparency, accountability, fairness, security, privacy, and user empowerment.

This perspective contributes to the emerging Society 5.0 tourism literature by emphasizing that smart tourism should be evaluated not only according to technological sophistication and service efficiency but also according to its capacity to protect human values. A responsible smart tourism ecosystem should therefore integrate privacy-by-design, responsible AI, explainable decision-making, robust data governance, algorithmic fairness, meaningful consent, and inclusive digital access into its technological and organizational architecture. Such an approach enables tourism organizations to capture the benefits of digital transformation while maintaining stakeholder trust and protecting individual rights, thereby supporting a more sustainable, equitable, and human-centered tourism future.

## CONCLUSION

Privacy and ethics have become fundamental dimensions of digital tourism in the Society 5.0 era. The findings indicate that the increasing adoption of artificial intelligence (AI), big data, the Internet of Things (IoT), and online travel agencies (OTAs) offers substantial opportunities for personalization, efficiency, connectivity, and improved tourist experiences, while simultaneously creating concerns regarding data security, privacy, algorithmic bias, surveillance, discrimination, transparency, and user autonomy. Although privacy protection has received considerable attention, ethical dimensions remain comparatively underdeveloped. This highlights the need to shift digital tourism development from a predominantly technology-oriented approach toward a human-centered model that integrates innovation with ethical governance, transparency, accountability, fairness, and user empowerment.

The findings also indicate that personal security, control over personal information, protection from discrimination, and data security are important dimensions shaping tourists' trust and engagement with digital tourism technologies. For tourism organizations and policymakers, these findings emphasize the importance of responsible data governance, privacy-by-design, meaningful consent, cybersecurity, explainable AI, and mechanisms for ensuring algorithmic fairness. Integrating these principles into smart

tourism development can strengthen stakeholder trust and support more inclusive and sustainable digital transformation.

Several limitations should be acknowledged. The analysis was restricted to publications from 2019 to 2024 and five academic databases, which may have excluded relevant studies published outside the selected period or indexed elsewhere. The focus on the Society 5.0 context may also limit the generalizability of the findings to other tourism technology settings. Future research should therefore examine the relationships among privacy concerns, ethical governance, trust, technology acceptance, and tourist behavior through empirical and longitudinal approaches. Comparative studies across countries and tourism sectors, together with the development of validated instruments for assessing ethical governance in smart tourism, would further strengthen the theoretical and practical foundations of responsible digital tourism. Ultimately, the future of Society 5.0 tourism depends not only on the sophistication of its technologies but also on the ability of tourism stakeholders to ensure that digital innovation remains secure, transparent, fair, inclusive, and human-centered.

## REFERENCE

- Bélanger, F., & Crossler, R. E. (2011). Privacy in the digital age: A review of information privacy research in information systems. *MIS Quarterly*, 35(4), 1017–1041.
- Burr, C., Taddeo, M., & Floridi, L. (2020). The ethics of digital well-being: A thematic review. *Science and Engineering Ethics*, 26(4), 2313–2343.
- Correia, J., & Compeau, D. (2017). Information privacy awareness (IPA): A review of the use, definition and measurement of IPA.
- Dinev, T., & Hart, P. (2005). Internet privacy concerns and social awareness as determinants of intention to transact. *International Journal of Electronic Commerce*, 10(2), 7–29.
- Femenia-Serra, F., Perles-Ribes, J. F., & Ivars-Baidal, J. A. (2019). Smart destinations and tech-savvy millennial tourists: Hype versus reality. *Tourism Review*.
- Gong, Y., & Schroeder, A. (2022). A systematic literature review of data privacy and security research on smart tourism. *Tourism Management Perspectives*, 44, 101019.
- Green, B. (2021). The contestation of tech ethics: A sociotechnical approach to technology ethics in practice. *Journal of Social Computing*, 2(3), 209–225.
- Hall, C. M., & Ram, Y. (2020). Protecting privacy in tourism: A perspective article. *Tourism Review*, 75(1), 76–80.
- Hung, N. T., Le Hoang, A., Do Thi Thu, H., & Hang, V. T. T. (2022). A study on factors affecting the decision to use smart tourism applications using extended TAM. *WSEAS Transactions on Business and Economics*, 17, 288–299.
- Ioannou, A., Tussyadiah, I., & Lu, Y. (2020). Privacy concerns and disclosure of biometric and behavioral data for travel. *International Journal of Information Management*, 54, 102122.
- Jeffrey, H. L., Ashraf, H., & Paris, C. M. (2019). Hanging out on Snapchat: Disrupting passive covert netnography in tourism research. *Tourism Geographies*, 144–161.

- Jobin, A., Ienca, M., & Vayena, E. (2019). The global landscape of AI ethics guidelines. *Nature Machine Intelligence*, 1(9), 389–399.
- Lyu, J., Khan, A., Bibi, S., Chan, J. H., & Qi, X. (2022). Big data in action: An overview of big data studies in tourism and hospitality literature. *Journal of Hospitality and Tourism Management*, 346–360.
- Morley, J., Floridi, L., Kinsey, L., & Elhalal, A. (2020). From what to how: An initial review of publicly available AI ethics tools, methods and research to translate principles into practices. *Science and Engineering Ethics*, 26(4), 2141–2168.
- Ponsignona, F., & Derbaix, M. (2020). The impact of interactive technologies on the social experience: An empirical study in a cultural tourism context. *Tourism Management Perspectives*.
- Rajesh, S., Algani, Y. M., Ansari, M. S., Balachander, B., Raj, R., Young, I., & Balaji, S. (2022). Detection of features from the Internet of Things customer attitudes in the hotel industry using a deep neural network model. *Measurement: Sensors*.
- Saura, J. R., Ribeiro-Soriano, D., & Palacios-Marqués, D. (2022). Assessing behavioral data science privacy issues in government artificial intelligence. *Government Information Quarterly*.
- Singh, P., Elmi, Z., Meriga, V. K., Pasha, J., & Dulebenets, M. A. (2022). Internet of Things for sustainable railway transportation: Past, present, and future. *Cleaner Logistics and Supply Chain*.
- Smith, H. J., Dinev, T., & Xu, H. (2011). Information privacy research: An interdisciplinary review. *MIS Quarterly*, 35, 989.
- Talwar, S., Dhir, A., Kaur, P., & Mäntymäki, M. (2020). Barriers toward purchasing from online travel agencies. *International Journal of Hospitality Management*.
- Tussyadiah, I. (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*.
- Waluchow, W. J. (2008). *The dimensions of ethics*. Broadview Press.
- Whiting, R., & Pritchard, K. (2017). *Digital ethics*.
- Williams, N. L., Ferdinand, N., & Bustard, J. (2020). From WOM to aWOM: The evolution of unpaid influence: A perspective article. *Tourism Review*, 75(1), 314–318.
- Yallop, A. C., Gica, O. A., Moisescu, O. I., Coros, M. M., & Séraphin, H. (2023). The digital traveler: Implications for data ethics and data governance in tourism and hospitality. *Journal of Consumer Marketing*, 155–170.
- Yallop, A., & Seraphin, H. (2020). Big data and analytics in tourism and hospitality: Opportunities and risks. *Journal of Tourism Futures*, 257–262.
- Yoo, C., Kwon, S., Na, H., & Chang, B. (2017). Factors affecting the adoption of gamified smart tourism applications: An integrative approach. *Sustainability*, 9(12), 2162