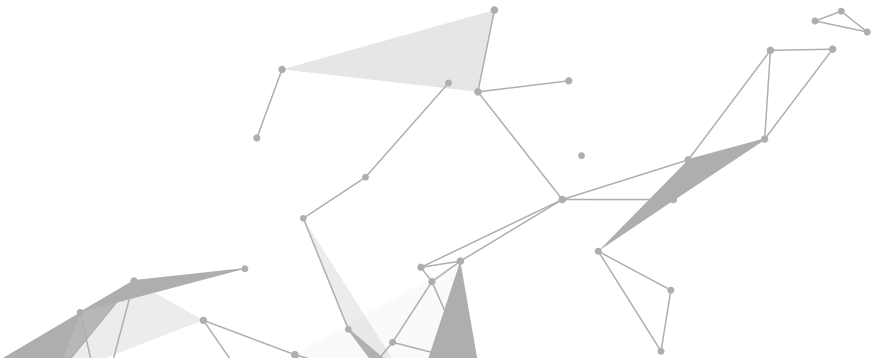
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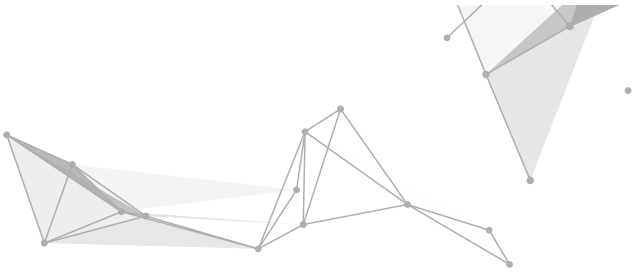
Implementing **Artificial Intelligence in Tourism**

Guidelines and Recommendations for the public sector

A capacity-centred report to guide public sector action and regional implementation



Implementing **Artificial Intelligence** in Tourism



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- Professor Cody Morris Paris, PhD, Professor of Business, Sustainability, and Society, Deputy Director of Research and Business, and Head of the Business School (DBI), Middlesex University Dubai;
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- Dr. Dolores Ordóñez, Director at AnySolution, coordinator of the Common European Tourism Data Space.

Their perspectives enriched the content and strengthened the final version of this publication.

UN Tourism further thanks its member states that participated in the Global Survey on AI in Tourism. Their input provided essential insights that strengthened the evidence base and enriched the findings of this report.



Zurab Pololikashvili

SECRETARY-GENERAL, UN TOURISM

Artificial Intelligence is transforming every sector of our economies and societies, and tourism is no exception. Across destinations, AI is already reshaping how we plan, manage and experience travel. Used responsibly, it can strengthen competitiveness, improve visitor experiences, and accelerate our collective progress towards sustainability.

For UN Tourism, the question is no longer if AI will redefine tourism, but how we can ensure it does so in ways that are inclusive, transparent and beneficial to all. This report, Implementing Artificial Intelligence in Tourism – Guidelines and Recommendations for the public sector, marks a milestone in that effort. It draws on the first-ever global survey conducted by UN Tourism with its Member States to understand how governments are approaching AI in the tourism sector. The survey provides an unprecedented picture of where countries stand, what capacities exist, what challenges persist, and where cooperation is most needed.

The insights reveal a clear message: while awareness of AI's potential is high, many tourism administrations are still at the early stages of adoption. Skills, infrastructure and governance gaps remain significant. Yet these very challenges create an opportunity for collective public sector leadership. By investing in institutional capacity, developing ethical and human-centred governance frameworks, and fostering coordination across ministries and levels of government, we can ensure that AI becomes a catalyst for resilience, inclusion and sustainability.

The results of the global survey reaffirm UN Tourism's leadership in advancing knowledge and cooperation among governments at the intersection of technology and tourism. They remind us that progress depends not only on algorithms and infrastructure, but on public trust, effective institutions and shared purpose.

I commend the many Member States and institutions that contributed to this groundbreaking work. Together, we are shaping a future where artificial intelligence strengthens the capacity of the public sector to guide tourism toward a more inclusive and sustainable future.



Natalia Bayona

EXECUTIVE DIRECTOR, UN TOURISM

Artificial Intelligence is becoming one of the defining forces of our time. Its impact extends far beyond technology; it is reshaping how societies operate, how institutions make decisions, and how people experience the world. In tourism, Artificial Intelligence is already influencing how destinations are managed, how policies are designed, and how travellers connect with places and cultures.

The wider economic outlook confirms the transformative potential of this technology. Artificial Intelligence is projected to contribute between USD 15.7 and 19.9 trillion to the global economy by 2030, with travel and tourism expected to capture a meaningful share through improved productivity, smarter operations, and data-driven policy.

This report, *Implementing Artificial Intelligence in Tourism – Guidelines and Recommendations for the Public Sector,* provides a global overview of how governments are approaching this transformation. Drawing on the first UN Tourism global survey on Artificial Intelligence in tourism, it captures both the momentum and the clear need for stronger capacity, coordination, and responsible governance.

Across regions, innovation ecosystems are taking shape where public administrations, academia, and the private sector collaborate to translate Artificial Intelligence's potential into tangible outcomes. Start-ups and entrepreneurs are developing new tools that help destinations operate more effectively and sustainably, while public institutions are laying the foundations for responsible and inclusive AI adoption.

According to UN Tourism global survey on Artificial Intelligence in tourism, over 50% of tourism ministries plan to increase investment in Artificial Intelligence within the next five years, and one in five governments already provide funding or fiscal incentives for AI-based innovation.

Let us embrace this era of transformation with vision and courage. By harnessing the power of Artificial Intelligence responsibly and inclusively, we can unlock new opportunities, foster meaningful connections, and shape a tourism sector that is smarter, more sustainable, and truly centred on people. The journey ahead is full of promise - let's lead it together.



Samer Al-Kharashi

DIRECTOR OF THE REGIONAL OFFICE OF THE MIDDLE EAST

Artificial Intelligence is rapidly becoming part of how we live, work, and govern. In the Middle East, where tourism stands as both a cultural bridge and an engine for growth, AI offers an opportunity to rethink how destinations are managed and how visitors are engaged. When guided by sound policy and human insight, this technology can help governments build smarter systems, preserve heritage, and deliver experiences that reflect the region's values of hospitality and innovation.

UN Tourism's *Implementing Artificial Intelligence in Tourism – Guidelines and Recommendations for the Public Sector* captures a pivotal moment. For the first time, Member States have come together through a global survey to share how they are integrating AI into their tourism sectors. The findings highlight growing awareness, active experimentation, and the need for stronger institutional frameworks to guide this transformation responsibly.

In the Middle East, the momentum is already visible. Governments are embedding digital transformation within their tourism strategies, universities are training the next generation of data-literate professionals, and start-ups are designing AI-driven tools to enhance operations and sustainability. The challenge now is to align these efforts under cohesive governance structures that ensure inclusivity, ethics, and shared prosperity.

The Regional Office for the Middle East remains committed to supporting our Member States in building this foundation through knowledge sharing, capacity development, and partnerships that translate innovation into practical results. Artificial Intelligence is not simply about technology; it is about foresight, collaboration, and trust. With a clear vision and collective action, we can ensure that the region's embrace of AI strengthens tourism as a driver of opportunity, connection, and sustainable progress.



Antonio Lopez De Avila

DIRECTOR OF INNOVATION, EDUCATION, AND INVESTMENTS

Artificial Intelligence is no longer a distant prospect; it is already shaping the systems that drive progress across our societies. It is changing how destinations grow, how people learn, and how opportunities emerge. The pace of transformation calls not only for technological readiness but also for new ways of thinking, learning, and collaborating across public and private sectors.

Tourism thrives on creativity and human connection. As AI becomes a force in shaping data-driven decisions and operations, the question is how to place people, workers, entrepreneurs, and travellers at the heart of this technological shift. This means building the skills, trust, and governance systems needed to turn AI from a tool of efficiency into an engine of shared progress, the fundamental base of smart destinations.

This report, I*mplementing Artificial Intelligence in Tourism – Guidelines and Recommendations for the Public Sector*, provides a practical and forward-looking foundation for that journey. Drawing from the first global UN Tourism survey with Member States, it reveals a growing commitment to innovation, the need for stronger institutional coordination, and the importance of investing in education and capacity building to bridge the digital divide.

The results remind us that technology alone cannot transform the sector; people and purpose must guide it. As we move forward, collaboration between governments, academia, and the private sector will be key to ensuring that innovation serves sustainability and inclusion. The future of tourism will depend on our ability to align innovation with education, and investment with inclusion. By empowering institutions to lead responsibly and equipping individuals with the knowledge to participate meaningfully, we can shape a tourism ecosystem that is smarter, fairer, and more sustainable.

The Department of Innovation, Education and Investments stands ready to support our Member States in this effort, helping to turn insight into action and ambition into tangible results. Together, we can ensure that Artificial Intelligence serves not only to transform tourism, but to elevate it as a model of innovation that benefits all.

Executive summary

The report *"The Impact of Artificial Intelligence in Tourism – Recommendations Guideline"* by UN Tourism offers the first comprehensive global outlook on how Artificial Intelligence (AI) is transforming the tourism sector and how governments can responsibly harness its potential. Based on an unprecedented 2025 survey covering 64 Member States, the report provides an evidence-based assessment of global readiness and practical guidance for policymakers (the "Global Survey on AI in Tourism"). It underscores that while AI is rapidly becoming a defining feature of modern tourism, its successful and ethical integration depends not on technology alone, but on governance, institutional capacity, and human capital.

AI is reshaping the way tourism is planned, experienced, and managed. From personalized travel recommendations and AI-powered chatbots to data-driven visitor flow management and sustainability monitoring, the technology is redefining competitiveness and service delivery in destinations worldwide. Nearly one-third of travellers already use generative AI tools like ChatGPT to plan trips, marking an unprecedented rate of adoption. Yet, fewer than one in six national tourism administrations have developed sector-specific AI strategies, even as 45 per cent of countries report having national AI policies. This gap underscores a critical need for tourism authorities to move from experimentation to structured governance, ensuring that innovation advances inclusively and aligns with public interests.

The Global Survey on AI in Tourism reveals both momentum and challenges. Tourism authorities most frequently use or plan to use AI for marketing and promotion, forecasting visitor numbers, and improving data-driven policy decisions. However, they face persistent barriers including shortages of skilled professionals, high implementation costs, limited infrastructure, and uncertainty over data privacy and regulation. Most governments perceive AI adoption in the private tourism sector as modest, suggesting that public leadership and coordinated frameworks will be essential to accelerate uptake. Ethical governance also remains nascent, with only around 40 per cent of tourism authorities reporting the existence of guidelines for responsible AI use.

To help Member States navigate these complexities, the report introduces the UN Tourism AI Readiness Framework, a practical model to assess and strengthen national capacity across four key dimensions: (i) data infrastructure, (ii) governance, strategy and regulation, (iii) workforce capacity and skills, and (iv) interoperability. Each dimension is structured around three maturity levels—Exploring, Implementing, and Consolidating—allowing destinations to diagnose weaknesses, benchmark progress, and identify concrete next steps. The framework reveals that while enthusiasm for AI is high, most countries remain in early stages of readiness, particularly in terms of skills development and data governance.

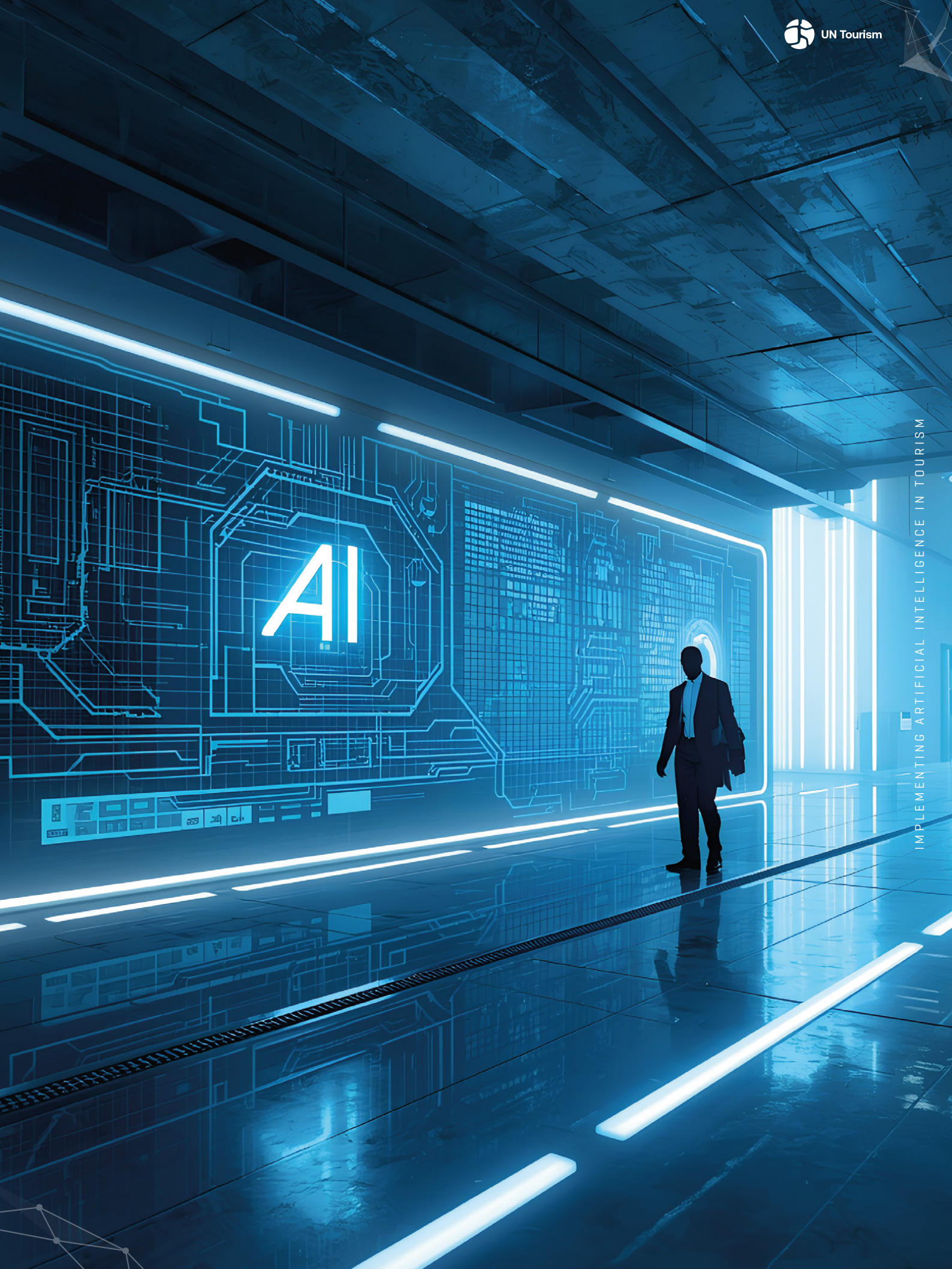
Building on this analytical foundation, the report sets out a roadmap for action. It emphasizes the importance of integrating AI into national and local tourism strategies, backed by strong leadership, cross-sector coordination, and targeted investment in human capital. It calls for deeper public–private collaboration, engagement with academia and startups, and the creation of innovation ecosystems that nurture responsible experimentation through mechanisms such as regulatory sandboxes and testbeds. Financing instruments, ranging from public budgets to grants, tax incentives, and co-investment models, are presented as critical enablers, particularly for developing economies seeking to close capability gaps.

The report also offers regionally grounded insights through case studies from Africa, the Americas, Asia-Pacific, Europe, and the Middle East, illustrating how AI is already being deployed for wildlife conservation, destination management, inclusion, and large-scale infrastructure projects. These examples demonstrate that AI's value extends beyond efficiency, offering pathways to sustainability, resilience, and local empowerment when guided by sound policy. The discussion on measuring impact and managing risk highlights both opportunities and cautions: AI can help advance the Sustainable Development Goals, but without clear frameworks it risks deepening inequalities, reinforcing bias, or increasing environmental footprints.

Ultimately, this report positions AI not merely as a technological innovation but as a governance challenge and a policy opportunity. It urges governments to ensure that AI becomes a force for positive and lasting change, enhancing competitiveness while promoting inclusivity, transparency, and sustainability. It concludes with a forward-looking call to action for the creation of a Global Observatory for AI in Tourism to monitor trends, share knowledge, and foster cooperation among Member States. By investing in capacity, ethics, and collaboration today, the tourism sector can ensure that the power of AI serves not only travellers and businesses, but the communities and ecosystems that sustain them.

> **"AI in tourism: technological innovation with ethical governance for an inclusive and sustainable future."**

UN Tourism



IMPLEMENTING ARTIFICIAL INTELLIGENCE IN TOURISM

01 Introduction

About this chapter:

This introductory chapter outlines the transformative potential of artificial intelligence (AI) in reshaping tourism, from personalized travel experiences to smarter, more sustainable destination management. It explains why AI in tourism policy is urgent now: driven by post-pandemic recovery needs, rapid advances in AI capabilities and increasing adoption by both travellers and industry. The chapter presentsthe Global Survey on AI in Tourism (See annex I). results showing strong interest but limited sector-specific AI strategies, alongside common barriers such as skills shortages, high costs and infrastructure gaps. It positions the report within existing international frameworks, notably G7/OECD policy paper on Artificial Intelligence and Tourism, and UN Tourism's innovation agenda, highlighting its role in translating high-level principles into practical, globally relevant guidance. Finally, it sets out the objectives, target audience, methodology and structure of the report, underlining its capacity-building focus for public sector stakeholders and its evidence-based, actionable approach.and UN Tourism's innovation agenda, highlighting its role in translating high-level principles into practical, globally relevant guidance. Finally, it sets out the objectives, target audience, methodology and structure of the report, underlining its capacity-building focus for public sector stakeholders and its evidence-based, actionable approach.

Key words:

artificial intelligence // tourism policy // smart destinations // capacity building // sustainability.

Key messages:

- AI offers transformative opportunities across the tourism value chain, from marketing and visitor services to sustainability and operations.
- AI helps tourism become a force for positive and lasting change, benefiting not just visitors but the communities they visit.
- The sector faces a strategic moment to integrate AI into tourism recovery and competitiveness agendas.



1.1

The transformative potential of AI in tourism

Tourism has long been at the forefront of digital innovation, from the early adoption of online booking and e-tourism platforms to the use of big data for market insights. Artificial intelligence (AI) now represents the next frontier in this digital evolution, with the potential to fundamentally reshape how travel is planned, experienced, and managed. AI-driven tools could enable more personalized traveller experiences and smarter operations across the tourism value chain. For example, destination websites and apps increasingly leverage AI for content curation and intelligent digital concierge services, tailoring recommendations to visitor preferences in real-time. AI-powered chatbots and virtual assistants are handling customer service queries for airlines, hotels, and tourism boards around the clock, in multiple languages, improving responsiveness and visitor satisfaction. On the operational side, AI-based analytics help tourism businesses forecast demand and optimize pricing, while computer vision and sensors support crowd management in attractions, enhancing both efficiency and safety. Major travel companies are already reporting tangible benefits. For instance, AI is used to monitor and reduce food waste, achieving cost savings and preventing large quantities of food from going to landfill. Such cases highlight the capacity of the AI to support sustainability gains by improving resource efficiency alongside boosting competitiveness.

From a broad economic perspective, the impact of AI is expected to be enormous. Various studies project that AI could contribute between USD 15.7 and 19.9 trillion to the global economy by 2030 . The travel and tourism sector stands to capture a share of this growth through productivity improvements, innovative services, and new business models enabled by AI. The World Travel & Tourism Council (WTTC) affirms that AI has the power to revolutionize how tourism businesses operate, unlocking new opportunities for growth and innovation. At the destination level, smart tourism initiatives are integrating technologies like AI and Internet of Things (IoT).While the benefits of AI are unevenly distributed, this also creates an opportunity for targeted investment in capacity-building. By strengthening digital infrastructure in less advanced destinations, AI can act as an equalizer rather than a divide.

In short, the transformative potential of AI in tourism is multifaceted, enhancing marketing and customer engagement, increasing operational efficiency, informing data-driven policy, and supporting responsible tourism development.

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1.2

Why this report and why now

Several converging factors make this a critical moment to examine AI in tourism policy. First, the tourism sector is rebounding from the unprecedented COVID-19 downturn and is keen to build back better through innovation. There is a strategic opportunity to leverage AI for a more resilient and inclusive recovery, for example, by using AI to better understand evolving traveller preferences, manage visitor flows in real time, or automate health and safety protocols. Second, the past two years have seen rapid advances in AI capabilities and accessibility. The emergence of generative AI tools like ChatGPT (launched publicly in late 2022) has dramatically raised awareness of AI's potential across industries, including travel. Tourists and travel planners are quickly experimenting with these tools; already at the early stage of AI, it is estimated that nearly one-third of U.S. travellers were likely to use AI such as ChatGPT to plan an upcoming trip. This represents an unprecedented early adoption of a technology in the sector and signals that AI adoption in tourism is no longer a distant prospect, but an ongoing reality that destinations must proactively respond to.

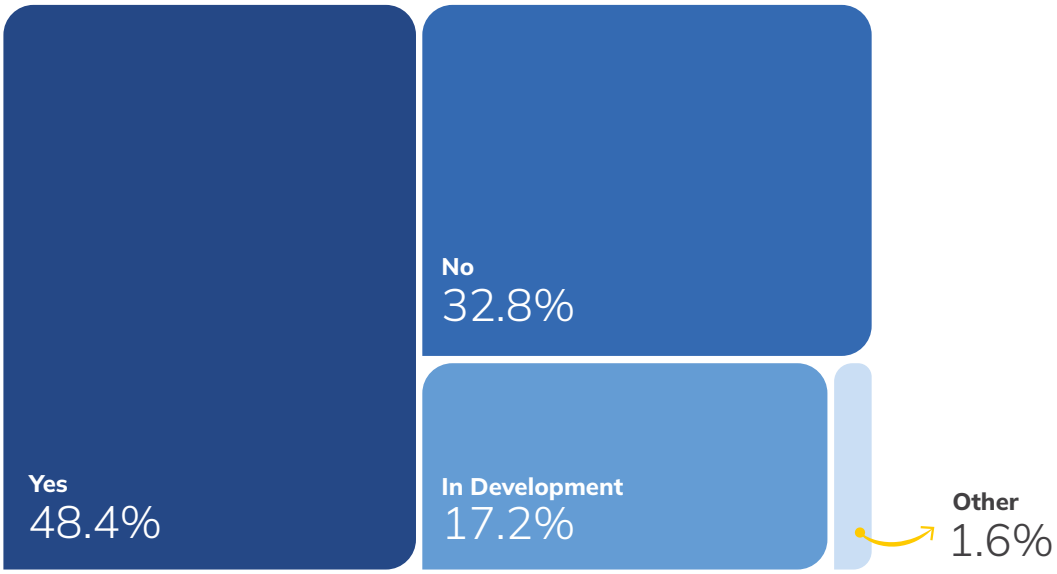
The timing also coincides with the entry into force of major regulatory frameworks, such as the European Union Artificial Intelligence Act (AI Act). This not only sets new global standards for trustworthy AI, but also positions tourism as a testbed for ethical, transparent, and human-centric innovation.

However, this rapid democratization of AI also introduces new and complex challenges. The same technology that can create personalized itineraries in seconds can be used to generate fake reviews at scale, create deepfake images of destinations to mislead tourists, or spread misinformation that could damage a location's reputation. This double-edged sword underscores the urgency of establishing governance frameworks that not only foster innovation but also build a trustworthy digital ecosystem for the traveller.

Crucially, governments around the world are recognizing the need to incorporate AI into tourism strategies, yet many are still in the early stages of doing so. In 2025, UN Tourism conducted a survey of its Member States on the implementation and use of AI in tourism (for the purposes of this report the "Global Survey on AI in Tourism"). The results, spanning over 60 countries, reveal both momentum and gaps that justify the timing of this report. Just under half of respondent countries (around 48%) reported having a national AI strategy in place (see figure 1.1), but only 17.2% have a specific AI strategy for the tourism sector (see figure 1.2). In other words, fewer than one in six national tourism administrations have yet developed a tailored approach to AI, even as generic AI policies emerge at the national level. Most tourism authorities are still formulating how to integrate AI into their activities. The findings of this survey are discussed throughout the report, while its methodology is detailed in Section 1.6.

As the Global Survey on AI in Tourism highlights, a significant proportion of countries have established national AI strategies, as detailed in figure 1.1.

Figure 1.1 National AI strategy adoption among respondent countries



Source: World Tourism Organization (UN Tourism), 2025.

However, when focusing specifically on the tourism sector, a clear gap emerges, as depicted in figure 1.2, revealing that only a small percentage of ministries have a tailored AI strategy.

Figure 1.2 Tourism-specific AI strategy adoption among ministries

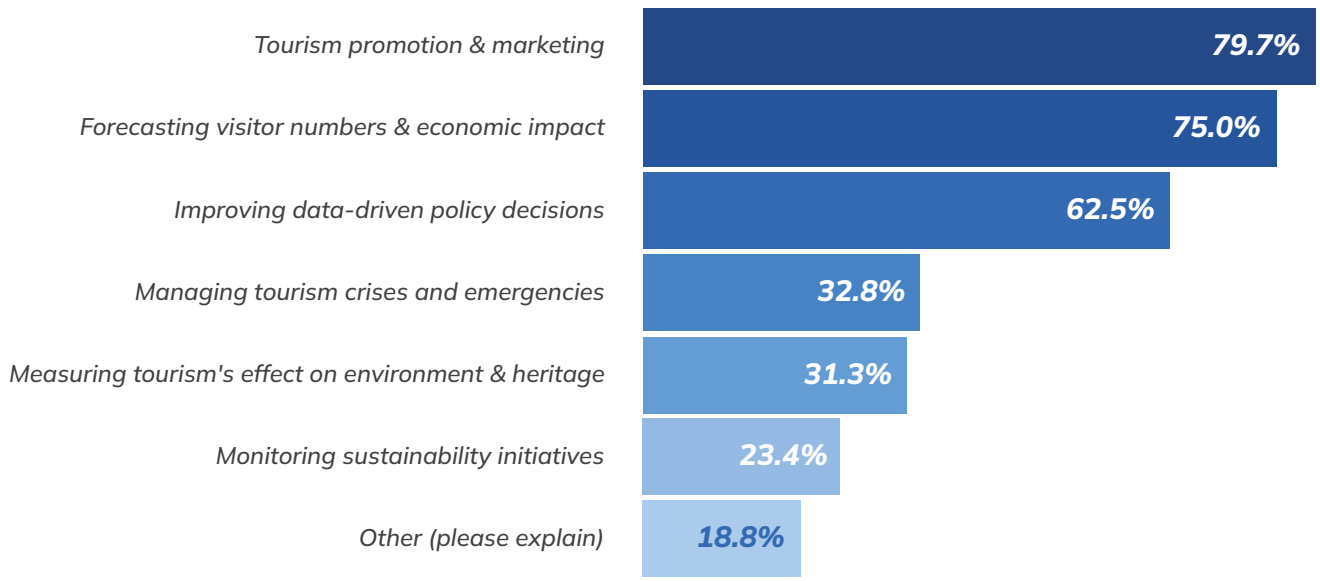


Source: World Tourism Organization (UN Tourism), 2025.

The Global Survey on AI in Tourism found that common applications being pursued or planned by tourism ministries include tourism marketing and promotion (reported by 79.7% of respondents), forecasting visitor numbers and economic impacts (75.0%), and improving data-driven policy decisions (62.5%), among other use cases (see figure 1.3). At the same time, officials perceive the overall level of AI adoption by the tourism private sector in their countries as modest, whilst in the majority of countries it is considered "low to moderate" rather than high (see figure 1.4).

Figure 1.3 provides an overview of the most common AI applications that tourism ministries are currently pursuing or planning to implement.

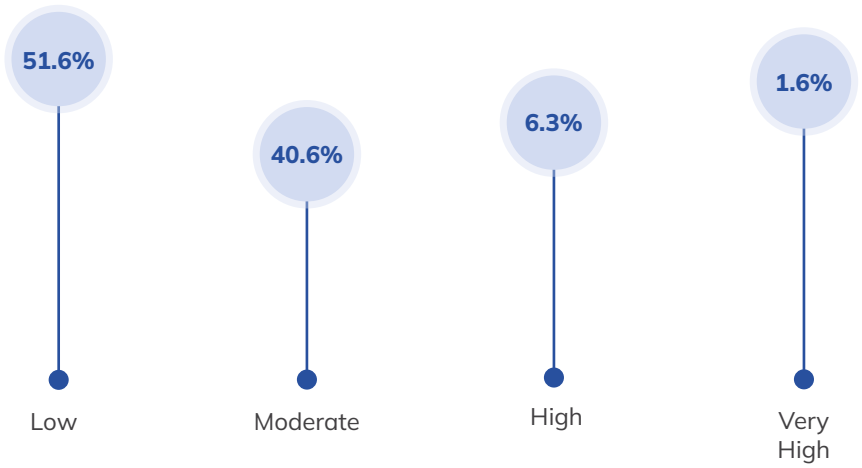
Figure 1.3 Most common AI applications in the public tourism sector



Source: World Tourism Organization (UN Tourism), 2025.

While public sector initiatives are underway, the perception of the officials on AI adoption within the private tourism sector remain largely modest, as illustrated in figure 1.4.

Figure 1.4 Perceived AI adoption in the tourism private sector

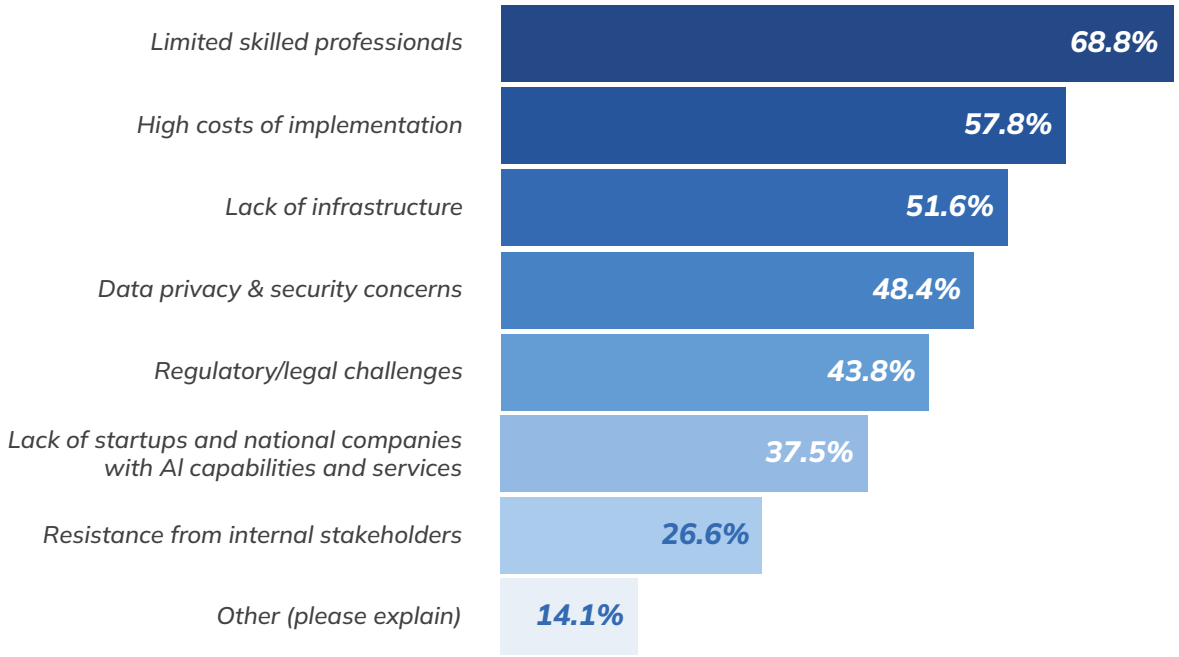


Source: World Tourism Organization (UN Tourism), 2025.

Respondents also highlighted significant barriers holding back AI implementation in tourism. The most cited challenges include a limited pool of skilled professionals to develop and manage AI solutions (noted by 68.8% of countries), high costs of implementation (57.8%), and lack of supporting digital infrastructure (51.6%) (see figure 1.5). Concerns around data privacy, regulatory uncertainty, and organizational resistance were also frequently mentioned. These findings underscore that while interest in AI is high, many tourism administrations face capacity constraints in turning AI opportunities into reality. They may also illustrate a need for guidance on governance frameworks to mitigate risks (such as data protection and workforce impacts) as AI is rolled out.

Figure 1.5 delineates the top barriers cited by respondents concerning the adoption of AI within the public tourism sector.

Figure 1.5 Top barriers to AI adoption in the public tourism sector



Source: World Tourism Organization (UN Tourism), 2025.

In short, why now? The tourism sector, like many other sectors, is experiencing a structural change , with AI rapidly transitioning from an ad-hoc and experimental tool, reshaping traveller expectations to a de-facto standard, demanding decisions from policymakers, like no technology shift ever before to harness its benefits while safeguarding public interests. The insights gleaned from the Global Survey on AI in Tourism unequivocally demonstrate that countries are actively seeking guidance and support in navigating this transformation. Therefore, this report is both urgent and well-timed, directly responding to the evident demand from tourism leaders for knowledge exchange, robust policy frameworks, and essential capacity building on AI in tourism.

1.3
Alignment of global frameworks

This report is designed to complement and build upon the existing global policy frameworks that guide the intersection of AI and tourism. It aligns with ongoing work by international organizations and coalitions to develop principles and strategies for harnessing digital innovation in tourism. Two key reference points are the Artificial Intelligence and tourism: G7/OECD policy paper,[9] and the UN Tourism own agenda for innovation and smart tourism. By positioning this report within these frameworks, it ensures consistency with established best practices while also filling important gaps such as capacity building and AI in tourism implementation in a wider range of countries.

The policy paper on artificial intelligence (AI) and tourism, prepared with G7 countries, is a foundational document highlighting high-level opportunities and challenges of AI in the tourism sector. The paper emphasizes the potential of AI as a tool to drive innovation and sustainable development in tourism, while also flagging critical policy issues that governments need to address. Notably, the G7/OECD policy paper calls for robust data governance and consumer protection measures as AI enables more personalized tourist services, vigilance regarding impacts on tourism employment, as well as the need to upskill and prepare workers for AI-driven changes, and support for tourism businesses, especially Small and Medium Enterprises (SMEs), to keep pace with rapid AI developments and comply with new regulatory frameworks. These priorities were endorsed at the highest levels; the paper was formally presented at the first-ever G7 Tourism Ministers' Meeting in November 2024 and was endorsed in the G7 Tourism Ministers' Communiqué. This underlines a strong political commitment among leading economies to guide AI adoption in tourism in a safe, ethical and inclusive manner.[10]

The current report positions itself as a complementary resource to the work of the Organisation for Economic Co-operation and Development (OECD). Whereas the G7/OECD policy paper provides a broad policy blueprint and awareness of risks, this report has a global outlook that digs deeper into practical implementation and capacity-building aspects, with a focus beyond the G7 countries. Analysis is extended to a truly global audience, including developing and emerging tourism economies that may not have been totally addressed in the G7/OECD policy paper. The report operationalizes the recommendations of the OECD by offering guidance tailored to tourism authorities at various stages of AI readiness, from beginners to more advanced implementations. For example, where the OECD paper highlights the importance of data protection and legal frameworks, this report offers concrete steps for tourism ministries to develop governance tools, such as AI ethics guidelines or regulatory sandboxes, suited to their national contexts. Similarly, to support SMEs in tourism (an OECD priority), it incorporates case studies and examples of how public sector programmes can foster local AI innovation and public-private partnerships. In essence, this report builds on the high-level principles of the OECD and translates them into actionable strategies and regionally relevant insights. The aim is to ensure that the global tourism community, not only the G7, can move forward in synchrony with AI, supported with guidance that resonates across different development levels and governance environments. Moreover, AI contributes towards the environmental, social and governance (ESG), and acts as a powerful enabler and accelerator for companies aiming to improve their sustainability and ethical performance. This complementarity means policymakers will find coherence rather than duplication: the G7/OECD policy paper and this UN Tourism report together offer a comprehensive toolkit, from vision to on-the-ground execution.

This report is also grounded in the ongoing UN Tourism agenda for innovation, digital transformation and smart tourism. UN Tourism has in recent years made technology-enabled innovation a central pillar of its work, recognizing that a digitalized tourism sector must continuously innovate to remain competitive, inclusive, and sustainable.[11] The leadership of UN Tourism has consistently advocated for bringing tourism into the broader discussion on innovation. This reflects an understanding that tourism can greatly benefit from the Fourth Industrial Revolution technologies, such as AI, internet of things (IoT), big data, etc., to tackle long-standing challenges (seasonality, overcrowding and resource efficiency) and to contribute to the Sustainable Development Goals (SDGs). In line with this vision, UN Tourism has launched several initiatives to spur AI-driven innovation in the sector. For example, through its startup competitions and innovation challenges, UN Tourism has helped propel AI-based solutions for tourism, with participating startups and scale-ups in its network raising over USD 2 billion in funding to date.[12] UN Tourism has also promoted the concept of smart destinations[13] as a framework for cities and regions to

leverage technology and data to enhance urban tourism management, and local quality of life . More recently, UN Tourism collaborated on tourism data spaces, a participative initiative to develop interoperable, secure and sovereign data-sharing environments tailored to the needs of the tourism sector.[14] These data spaces aim to unlock new public-private value chains by enabling trusted data flows across destinations, tourism providers, and government agencies. By improving access to quality data and fostering interoperability, Tourism Data Spaces lay the groundwork for more effective AI deployment, particularly in areas such as visitor flow optimization, sustainability monitoring, and personalized services. This report builds on those efforts by specifically examining how AI technologies can be responsibly adopted at scale to advance the smart tourism vision.

Within the broader agenda for Innovation and Digital Transformation of UN Tourism, this report serves as a recommendation complement that focusses on AI. It reinforces the strategic messages of UN Tourism: that embracing AI and other digital tools is key to keeping tourism competitive and resilient, and that this must be done in a way that fosters sustainability, inclusion, and ethical use of technology. By situating our analysis in the context of the agenda of UN Tourism, it ensures that the recommendations herein support and amplify existing UN initiatives, such as the UN Tourism Agenda for Africa 2030[15], which emphasizes innovation, or the Digital Futures Programme for SMEs.[16] In practical terms, the findings of this report can inform the ongoing capacity-building programmes and technical assistance that UN Tourism provides to Member States on innovation and smart tourism. Likewise, it aligns with the priorities of multilateral frameworks such as the Report of the Secretary-General Roadmap for Digital Cooperation [17] and the UN system-wide efforts on AI ethics[18], but with a sector-specific lens.

Readers will find that the objectives of this report, from promoting inclusive growth to safeguarding cultural and natural heritage through smart solutions, closely echo the values embedded in the mandate of UN Tourism. In summary, the report is positioned not as a standalone discourse, but as part of a continuum of global and UN-led efforts to leverage AI for good in tourism.[19]

> ***This report bridges global policy frameworks and practical implementation, ensuring AI in tourism advances ethically, inclusively, and sustainably.***

1.4

Objectives and target audience of the report

The primary objective of this report is to provide governments and stakeholders with a comprehensive policy outlook on AI in the tourism sector, one that is forward-looking, practical and rooted in global best practices. In doing so, the report aims to build the capacity of public sector officials to understand and harness the potential of AI in tourism, while managing its risks. It serves as a guidance tool for designing strategies, regulatory approaches and programmes that maximize the benefits of AI for tourism development including increased competitiveness, job creation and sustainability, and mitigate possible downsides such as privacy concerns or workforce displacement. The report also seeks to catalyse knowledge sharing. By compiling case studies and survey findings from around the world, it enables policymakers to learn from mutual experiences: what has worked, what challenges have emerged and how they can collaborate going forward.

The target audience for this report is chiefly multilateral and public sector stakeholders responsible for tourism and digital policy. This includes national tourism ministries and destination management/marketing organizations (DMOs), which are at the forefront of crafting policies and initiatives for tourism digitalization. It is also highly relevant to other government bodies (such as information and communications technology ministries, innovation agencies or regulators) that intersect with tourism in implementing AI, as well as regional and local authorities managing smart destination projects. Given the multilateral nature of the topic, the report is written in a formal tone suitable for intergovernmental settings, reflecting the interests of UN Tourism Member States, development agencies, and international organizations that support tourism and technology programmes. Donor agencies and development banks involved in tourism modernization will find strategic guidance in these pages, as well as industry associations and civil society observers seeking to align with public sector priorities. In short, the report is aimed at those who design or influence policy and capacity-building in tourism, rather than at a technical developer audience.

Notably, this publication is intended as a capacity-centred report to guide public sector action and regional implementation, meaning its content is designed to help government decision-makers translate analysis into action. The language is kept simple and reader-friendly (avoiding overly technical jargon), and the recommendations are framed to be actionable across different country contexts. At the same time, an academic or private-sector reader can also gain value from the overview trends of the report, frameworks and global case studies.

1.5

Methodology of the Global Survey on AI in Tourism analysis and structure of the report

1.5.1 Methodology

The findings and recommendations of this report are derived from a mixed-methods approach combining quantitative surveys, qualitative case analysis and extensive desk research. A cornerstone of the research is the UN Tourism Global Survey on AI in Tourism , conducted in 2025 (see Annex I), which gathered structured data from its Member States in national tourism authorities worldwide. This survey (described in more detail in section 1.6) provided a baseline assessment of the strategic readiness of countries, current use cases, and challenges regarding AI. Its quantitative results have been analysed to identify patterns and gaps. In addition, a literature review of major studies and policy papers from reputable sources has been conducted (including the OECD, World Bank, academic institutions and leading think tanks) to ground the analysis in existing evidence. Relevant findings from these sources are cited throughout the report to support key points.

Another methodological pillar is the use of case studies and regional consultations. To capture on-the-ground insights, a selection of case studies across all regions of the world has been examined, showcasing practical implementations of AI in tourism, e.g., a destination using AI for heritage conservation, or a city deploying AI chatbots for visitor services. These cases were chosen based on criteria such as geographical diversity, innovation type and involvement of the public sector, ensuring a representative mix of examples. The Member States questionnaire on the implementation and use of AI in tourism served as the primary input for mapping readiness, identifying barriers and selecting regional case studies for this report. Finally, the draft report underwent peer review within the technical departments of UN Tourism to validate the findings and refine the recommendations.

1.5.2 Structure

The report is organized into eight chapters, moving from broad context to specific guidelines and examples:

Chapter 1

Introduction:

Sets the stage by outlining the transformative potential of AI in tourism, explaining the rationale and timeliness of the report, situating it within global initiatives, and stating the objectives, audience, and methods.

Chapter 2

Capacity for AI in tourism: A readiness framework

Introduces a framework for assessing the readiness of a destination to implement AI, focussing on core capacity dimensions. These include data infrastructure, governance, workforce skills and interoperability. The chapter defines what foundational capacities are needed for AI in tourism and proposes a model of AI maturity levels, e.g., exploring, implementing and consolidating , to help countries self-assess their current stage.

Chapter 3

Strategy, governance, and capacity building

Examines how AI can be integrated into tourism strategies and the governance measures needed to steer the adoption of AI. Topics include developing national or local AI-in-tourism strategies, public sector leadership and multi-level coordination (ensuring alignment from national ministries to city tourism boards), and approaches to building human capacity, e.g., digital skills training for tourism officials and partnerships with educational institutions. The chapter also discusses the role of innovation hubs, academia, and startups in supporting public-private collaboration; AI initiatives, as well as mechanisms for financing and incentives to spur the adoption of AI (such as innovation grants or tax breaks). Cooperation at the international and regional level, sharing knowledge and possibly harmonizing standards, is highlighted as an enabler for smaller or least developed countries.

Chapter 4

Guidelines for public sector implementation

Provides practical guidelines and principles for deploying AI in tourism in an ethical, inclusive and effective manner. It covers cross-cutting governance issues such as ensuring trustworthy AI (ethics, privacy and avoiding bias), promoting interoperability and open data standards, and navigating procurement and partnership models for AI solutions. This chapter suggests concrete steps like creating regulatory sandboxes or testbeds for tourism AI innovation and developing toolkits or pilot programmes for key use cases, e.g., AI-powered tourism observatories, smart mobility in destinations). These guidelines act as a checklist for public officials implementing AI projects or regulations.

Chapter 5

Regional profiles and case studies

Dives into specific regional contexts and detailed case studies. It begins with the methodology for case study selection and an analytical framework to examine each case on common dimensions (strategic vision, enabling environment, technology used, governance and risk measures and outcomes). Then, for each UN Tourism region (Africa, Asia and the Pacific, Europe, Americas and Middle East and North Africa), the report provides a brief overview of regional trends and challenges in AI and tourism, followed by one in-depth case study. Each case study draws out lessons learned and transferable insights.

Chapter 6

Measuring impact and managing risk

Focusses on how to evaluate the outcomes of AI adoption in tourism and address associated risks. It proposes key performance indicators (KPIs) to measure success: for instance, improvements in visitor satisfaction, increases in tourism revenue or efficiency gains, progress on sustainability metrics, and greater inclusion and accessibility. The chapter also aligns AI initiatives with the SDGs and sustainable tourism principles, emphasizing that AI should advance goals such as decarbonization, heritage conservation and community well-being. In terms of risks, it analyses issues such as the impact of AI on tourism labour markets and, whether AI will augment or automate service jobs, ethical concerns such as bias in AI-driven marketing or surveillance in destinations, data privacy, cybersecurity, and the potential for misuse, e.g., deepfakes affecting the image of the destination. Strategies for risk mitigation and responsible governance are discussed, including upholding human oversight, implementing AI ethics guidelines and engaging stakeholders (employees, travellers and local communities) in dialogues about the use of AI.

Chapter 7

Global guidelines for AI-enabled tourism:

Building on all prior analysis, this chapter synthesizes a set of actionable guidelines and recommendations for different stakeholder groups. It provides guidance for national governments and tourism ministries, e.g., how to set up an AI task force or incorporate AI in tourism master plans, for local governments and destination managers adopting smart city solutions or open data platforms, for multilateral agencies and development partners, e.g., coordinating capacity-building efforts, funding pilot projects and for industry and technology providers, e.g., fostering public-private innovation or adhering to ethical standards. The recommendations are furthermore stratified by the earlier-mentioned maturity levels, suggesting basic actions for beginners, more advanced measures for implementations, and cutting-edge innovations for leaders. This tiered approach allows each country or destination to find relevant next steps according to its readiness.

Chapter 8

Conclusions and global call to action

This report closes with a reflection on the overarching lessons learned and the road ahead for AI in tourism. It distils the key messages from across regions and domains, reiterating the central role of capacity and governance in unlocking the value of AI The chapter also looks at future trends and emerging priorities, such as the impact of new AI regulations on tourism, e.g., the EU Artificial Intelligence Act, the evolution of traveller expectations in the age of AI, and potential new applications on the horizon, such as generative AI for dynamic content creation or AI for health security in travel. Finally, it outlines a way forward for the international community, calling for continued collaboration, monitoring, and adaptive governance as AI in tourism evolves. The aim is to ensure that the momentum generated by this report continues through implementation and further knowledge exchange.

1.4

Objectives and target audience of the report

Given that the findings of the Global Survey on AI in Tourism inform many parts of this report, a brief overview of the Global Survey on AI in Tourism methodology is warranted. The Global Survey on AI in Tourism was developed by the technical team of UN Tourism as a pioneering effort to capture the state of AI adoption across its Member States. The survey instrument was a structured questionnaire (estimated completion time: 10–15 minutes) distributed via official channels to all UN Tourism member state tourism administrations, primarily ministries or departments of tourism, worldwide. It consisted of multiple-choice and short-answer questions, organized into the following thematic sections:

Section 1

Institutional context

Captured respondent country and tourism authority tourism authority details, including the institutional role of the entity completing the survey. This section also introduced shared definitions to ensure all respondents had a common understanding of what AI in tourism referred to for the purposes of the questionnaire.

Section 2

AI in government strategies and implementation:

Assessed the extent to which AI is embedded in public-sector strategies. Questions included whether the country has a national AI strategy (Yes/No/In development) and whether the tourism tourism authority authority has a sector-specific AI strategy. For countries with such strategies, follow-up questions captured duration (e.g., less than 1 year, 1–3 years, more than 3 years). This section also asked about current or planned AI applications in tourism governance, ranging from marketing and visitor forecasting to policy decision support and sustainability monitoring. Respondents could select multiple applicable use cases and provide additional responses in open-text form. Finally, it asked respondents to identify key barriers to AI implementation from a list including lack of skills, high costs, infrastructure limitations, privacy and legal concerns, lack of local tech providers, and organizational resistance.

Section 3

AI in the private sector

Focussed on perceptions of AI adoption by tourism businesses in the country of the respondent. One question asked officials to rate the level of private-sector AI adoption (Very/High/High/Moderate/Low or Very Low), providing a rough benchmarking tool. Another asked about common private-sector use cases, e.g., chatbots, revenue management systems, AI-driven marketing, accessibility enhancements, augmented reality (AR), sustainability applications. The section also examined the extent of public-private collaboration on tourism and AI, asking whether the country has mechanisms such as public-private partnerships (PPPs), innovation programmes, hackathons, co-creation initiatives or dedicated AI-and-tourism clusters.

The Global Survey on AI in Tourism was administered electronically, with responses collected over several weeks in mid-2025. UN Tourism followed up with Member States through its regional departments to encourage participation. In total, 64 countries responded, representing approximately one-third of the membership of UN Tourism and covering all regions of the world, with particularly strong representation from Europe and the Americas, and a relevant engagement from Asia, Africa and the Middle East.

Governments were asked to share their perspectives on private sector adoption. However, the private sector itself was not directly consulted. Consequently, the findings capture how public administrations perceive private sector progress, rather than reflecting direct private sector input.

The collected data were compiled and analysed by the research team of UN Tourism. While the Global Survey on AI in Tourism was not fully representative (relying on self-reported information and a voluntary response sample), it provides a valuable and timely snapshot of global readiness and activity in AI and tourism policy. For example, if 17.2% of respondents reported having a tourism AI strategy, this figure should be interpreted as indicative rather than definitive. Nonetheless, the insights derived from the Global Survey on AI in Tourism offer clear signals of trends, priorities and policy gaps across regions.

To ensure respondent confidentiality, all data are presented in aggregate form. Specific country responses are not disclosed. When cited earlier in the report, percentage figures are drawn directly from the aggregated Global Survey on AI in Tourism results.

Importantly, the Global Survey on AI in Tourism findings have directly shaped the structure and recommendations of this report. For instance, the identification of human capital gaps and high implementation costs as top challenges has led to an emphasis on capacity-building and financing mechanisms in the analysis. Similarly, the finding that AI-powered tourism promotion is among the most common early use cases informed the inclusion of best practices in AI-driven marketing platforms. The responses also guided the case study selection and regional focus points.

Looking ahead, UN Tourism intends to repeat or expand the Global Survey on AI in Tourism in future cycles to monitor progress and support longitudinal analysis. Doing so will help Member States benchmark their own development and strengthen global cooperation on AI and tourism.

The following chapters will build on this empirical foundation, offering policy options, implementation guidance, and case-based insights to help governments harness the transformative potential of AI in tourism in a responsible, inclusive, and effective manner.

The subsequent chapters of this report will delve into the detailed analysis, strategy options, and case studies that address the challenges and opportunities identified in the introduction. The overall goal is to support all countries in harnessing the transformative power of AI for tourism in a responsible, equitable, and impactful way.

> ***The Global Survey on AI in Tourism provides a valuable and timely snapshot of global readiness and activity in AI and tourism policy, shaping the path toward responsible and inclusive innovation.***


Lorem ipsum

02

Capacity for AI in tourism: A readiness framework

About this chapter:

This chapter introduces AI Readiness Framework of UN Tourism, a practical tool for assessing and strengthening the foundational capacities needed to adopt AI in tourism. Based on survey data from 64 countries, it identifies fiour critical dimensions: data infrastructure, governance; strategy and regulation; workforce capacity and skills; and interoperability as the main enablers and barriers to effective AI deployment. For each dimension, the chapter defines maturity levels (exploring, implementing, consolidating) and offers clear criteria and examples. It underscores that capacity gaps, especially in skills, infrastructure and governance, are the biggest obstacles to AI adoption and must be addressed before advanced solutions can succeed. The framework also introduces an AI deployment scored to benchmark the breadth of AI applications in tourism administrations, complementing readiness assessment. By using this model, destinations can diagnose weaknesses, prioritize investments, and chart a path toward responsible, inclusive and responsible AI integration in tourism.

Key words:

AI readiness // data infrastructure // governance // workforce skills // interoperability

Key messages:

- Foundational capacities, not just technology, determine whether AI can be successfully and sustainably implemented in tourism; and
- AI Readiness Framework on UN Tourism provides a structured self-assessment tool based on four core dimensions: data infrastructure, governance, strategy and regulation, workforce capacity and skills, and interoperability.



2.1
Why capacity matters for AI in tourism

The transformative potential of artificial intelligence in tourism can only be realized if countries have the foundational capacities to support it. These include not only the technical infrastructure for data and connectivity, but also the institutional capabilities to govern AI responsibly, the human skills to use it effectively and the systems to ensure interoperability and collaboration.

Responses to the Global Survey on AI in Tourism on the implementation and use of AI in tourism confirm that these capacity elements are often the main barriers to progress. For instance, over 68% of respondents identified a lack of skills or internal expertise as a major challenge, while more than half cited infrastructure limitations and governance gaps. Even among countries with high tourism potential, readiness to deploy AI remains uneven.

Building capacity is, therefore, not a secondary concern; it is the enabler for meaningful and responsible AI adoption. Without adequate skills, data systems or institutional coordination, even the most advanced AI solutions may fail to deliver impact. Conversely, strengthening foundational capacity can unlock innovation, attract partnerships and ensure that AI tools are applied ethically and inclusively. This is especially important for ensuring that AI contributes to the role of tourism in job creation, sustainability and local development.

The next section introduces a structured framework for assessing such readiness, based on the pillars most frequently cited by countries themselves. This framework not only reflects global good practices but also allows destinations to benchmark their current position and identify practical steps forward.

2.2
A readiness framework for AI in tourism

To harness the potential of AI as outlined in Chapter 1, tourism authorities must build sufficient capacity across key domains. To diagnose this capacity, UN Tourism developed an AI readiness framework informed and validated by a survey for its Member States. The Global Survey on AI in Tourism gathered responses from 64 countries (about one-third of the membership of UN Tourism) across all regions of the world, revealing both momentum and gaps in AI adoption. Notably, just under half of respondent countries (≈45%) have a national AI strategy, but only 17.2% have a tourism-specific AI strategy. Likewise, while most tourism administrations report interest in AI, common barriers include limited skilled staff (cited by 68.8% of countries), high implementation costs (57.8%) and inadequate digital infrastructure (51.6%). The most common public-sector applications of AI cited in the Global Survey on AI in Tourism include marketing and promotion, visitor forecasting and crisis management. These early use cases depend heavily on robust data infrastructure and skilled personnel, highlighting why these capacities form the foundation of the readiness framework.

Other notable constraints include a lack of regulatory clarity and data protection concerns, as well as internal resistance to change, underscoring that capacity-building must address both technical and institutional readiness. These findings highlight critical capacity shortfalls in data infrastructure; governance; strategy and regulation; workforce skills; and system interoperability: the five dimensions around which the readiness framework is structured.

Moreover, most countries rated AI adoption in the private tourism sector as low to moderate, with only four (63%) rating it as high or very high. This suggests that the capacity of the public sector (covered by this chapter) may be a key enabler for broader ecosystem development. Only a minority of respondents (fewer than 20%) indicated the existence of structured public-private partnership mechanisms and funding incentives, such as innovation hubs or policy co-creation initiatives, pointing to an opportunity for governments to lead more coordinated efforts.

The model was refined using the Global Survey on AI in Tourism data to ensure real-world relevance: for example, the prevalence of human capital and infrastructure gaps in responses underscored the need to emphasize those dimensions. The framework also reflects regional disparities: advanced economies generally exhibit higher readiness, whereas many developing states remain at early stages, especially where digital infrastructure and skills deficits persist.

By focussing on foundational capacities, this framework offers practical guidance for public-sector tourism bodies to assess their current state and identify priority areas for improvement. It is designed to support institutional self-assessment and targeted action, and to help governments not only prepare for AI adoption but also stimulate responsible innovation across the wider tourism ecosystem.

2.3
Framework structure

The AI readiness framework consists of five core dimensions derived from the Global Survey on AI in Tourism insights:

1. data infrastructure,
2. governance, strategy and regulation,
3. workforce capacity and skills and
4. interoperability.

Each dimension represents a critical pillar of capability needed to implement AI in tourism. Within each dimension, three maturity levels are defined: exploring, implementing and consolidating, indicating a progression from basic foundational capacity to advanced, integrated practice. The exploring level signifies initial or nascent efforts, the Implementing level denotes an intermediate stage with active implementation of AI-related initiatives, and the consolidating level represents a highly advanced, strategic use of AI across operations. The following sections describe each dimension in turn, outlining what characterizes a tourism authority at the exploring, implementing and consolidating levels, with clear criteria and illustrative examples.

The five pillars in this framework are derived from the themes most frequently cited in the Global Survey on AI in Tourism. While the Global Survey on AI in Tourism did not explicitly define these pillars, the analysis of Member State responses on challenges, readiness and implementation patterns informed their development. The maturity model presented here translates those insights into a practical structure to assess capacity across destinations.

These maturity levels also resonate with approaches seen in smart destination strategies, where progress in data governance and digital systems often provides the foundation upon which AI-specific capacities can build.

> ***The AI readiness framework translates global insights into five pillars that guide tourism destinations from exploration to full integration of AI.***

2.4
Data infrastructure

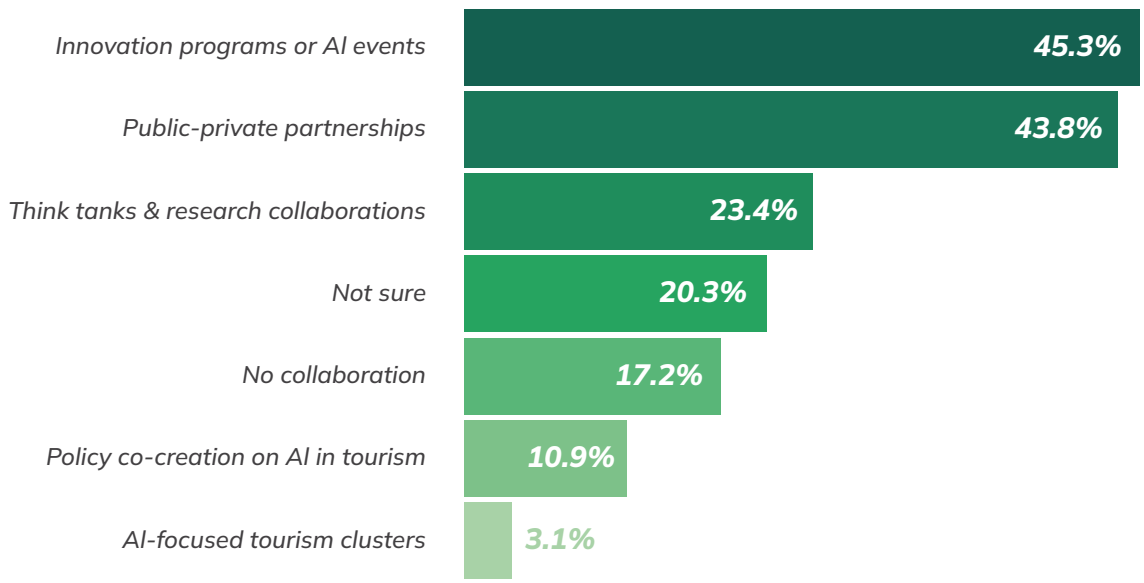
2.4.1 Definition and importance

This pillar evaluates whether tourism administrations possess the foundational digital infrastructure to enable AI use. It includes both the technical systems, e.g., data storage, cloud capabilities, API access and broadband connectivity, and the data governance practices, e.g., collection standards, metadata and quality assurance, required for AI models to function effectively.

Data infrastructure is the backbone of any AI initiative. Without reliable, easily available accessible, and high-quality data, even advanced AI tools will underperform or fail. The Global Survey on AI in Tourism confirms this: 51.6% of countries identified inadequate infrastructure as a major barrier to AI implementation. In open-text responses, several countries pointed to outdated databases, disconnected systems, or low digitization levels in key tourism functions. such as visitor registries, site management, or licensing systems. Others highlighted limited access to cloud computing or cybersecurity vulnerabilities.

Moreover, Global Survey on AI in Tourism responses revealed a range of obstacles that tourism authorities face when trying to access and utilize tourism-related data (see figure 2.1). The most cited barriers were limited interoperability between public and private systems and a lack of centralized data infrastructure, each reported by 59.4% of countries. Close behind was the lack of data standardization (57.8%), underscoring a fragmented data environment that complicates AI implementation. Other significant barriers included the high cost of acquiring or processing data (42.2%) and low data quality or reliability (42.2%), both of which can undermine the effectiveness of AI tools that rely on consistent and accurate information. Furthermore, legal restrictions on data use (31.3%) and other context-specific challenges (14.1%) point to a broader need for regulatory clarity and institutional alignment. Together, these findings emphasize the importance of addressing foundational infrastructure and data governance issues as a prerequisite for AI readiness in the tourism sector.

Figure 2.1 Top barriers to accessing and using tourism-related data



Source: World Tourism Organization (UN Tourism), 2025.

The implications are direct: for AI applications like visitor forecasting or sustainability analysis and monitoring to succeed, real-time and historic data must be collected, cleaned and shared in structured ways. Here, the concept of "data estate" might be used, referring to the overall data assets available, their related infrastructure and management processes. Additionally, smart destinations and real-time management tools require not only datasets, but platforms and connectivity to process them and data access and collection responsibilities revisited. Countries with advanced infrastructure often enable AI projects through open-data portals, interoperability frameworks and secure data lakes. Conversely, those lacking basic infrastructure must focus first on foundational upgrades before deploying sophisticated AI tools.

2.4.2 Maturity levels – Data infrastructure



Exploring

At this level, the data infrastructure of the tourism authority is basic and fragmented. Data relevant to tourism (e.g. visitor arrivals, expenditures or attractions traffic) may be collected in siloed systems or spreadsheets, with minimal use of centralized databases. There is little to no use of cloud storage or big data technologies. Often, Information and Communication Technologies (ICT) infrastructure is outdated or limited. For example, a tourism authority might have only rudimentary internet connectivity or servers and relies on manual reporting from provincial offices or the private sector. Instead of real-time data updates ds, officials work with static reports (monthly or annual statistics) that are not available for advanced analytics.



Implementing

At this level, the tourism authority has made significant progress in digitizing and integrating data systems. There is one or more established databases or management information systems for tourism data, possibly developed as part of an e-government initiative—that is, a national or local government programme aimed at digitizing public administration and improving the delivery of public services using information and communication technologies— or a tourism observatory project. Basic interoperability is in place: for instance, visitor statistics from customs/immigration, accommodation occupancy data and survey data might feed into a central data repository. The use of cloud services and analytic software begins at this stage: the tourism authority may employ business intelligence tools or geographic information systems (GIS) mapping for tourism insights. Data quality and standards are improving (e.g. using common definitions for tourist arrivals adopting standards like tourism satellite accounts (TSA) for economic data). However, not all data is collected in real time or comprehensive: some datasets are updated quarterly or annually, and different systems might still require manual reconciliation.



Consolidating

This level in the data infrastructure has a state-of-the-art, fully integrated data ecosystem for tourism. All relevant data streams (visitor arrivals, transportation usage, mobile location data, attraction footfall, social media sentiment, etc.) are captured and fed into a unified data architecture, often leveraging cloud-based big data platforms. The availability of data in real time is a hallmark of this level: for example, dashboards might show live tourist counts in key destinations, updated via sensors or telecom data. There is strong adherence to data standards and open data practices: the tourism authority not only collects data for internal use but shares appropriate datasets with the public or developers via open APIs, fostering innovation. Advanced data governance policies are in place (covering data privacy, security and quality control), often aligned with national digital governance standards. The infrastructure can support AI at scale: high-performance computing and AI cloud services are increasingly available to tourism stakeholders through national or regional infrastructure, as well as via commercial providers, enabling complex analytics such as machine learning models for visitor segmentation or AI-driven forecasting.

2.5

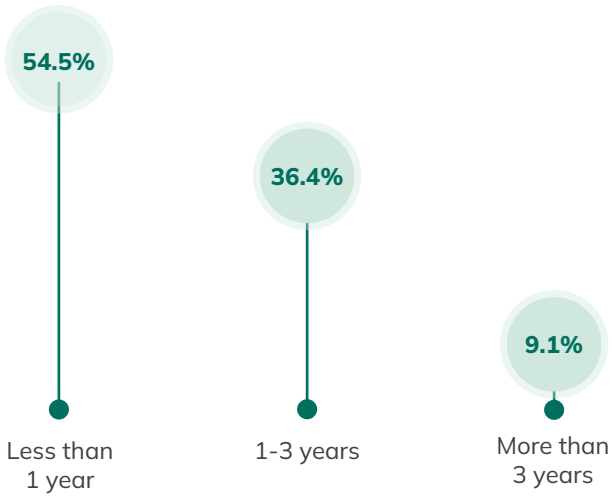
Governance, Strategy and Regulation

2.5.1 Definition and importance

Governance, Strategy and Regulation in AI readiness refer to the policy frameworks, leadership structures, planning processes and legal instruments that guide the adoption of AI in the tourism public sector. This dimension assesses the extent to which tourism authorities have incorporated AI into their official strategies, regulatory frameworks and operational practices. For example, whether there is a clear vision or roadmap for AI in tourism, ethical guidelines for AI use, designated leadership for digital innovation, or mechanisms to coordinate with other government entities and regulators.

Strong governance ensures that AI deployment aligns with public interests, legal norms and sectoral goals, while a well-defined strategy helps mobilize resources and political support. Regulatory clarity provides the foundation for trustworthy AI adoption, covering issues such as data protection, liability, procurement standards, and consumer rights. The Global Survey on AI in Tourism underlined a clear need for such governance: only 17.2% of countries have a tourism-specific AI strategy and many of those were established less than one year ago (see figure 2.2). This indicates that AI integration remains in its early stages, even among first movers. In most destinations, tourism ministries are still operating without customized plans for AI, often relying on broader national or digital transformation agendas.

Figure 2.2 Age of tourism-specific AI strategies among respondent countries by mid-2025



Source: World Tourism Organization (UN Tourism), 2025.

Beyond strategic gaps, governance also intersects with regulatory clarity and organizational leadership. Roughly 40% of countries cited a lack of regulatory certainty as a challenge, alongside data privacy concerns and internal resistance. These findings emphasize that strong governance, regulatory frameworks and change management are just as critical as technical tools in achieving AI readiness. Without structured leadership and clear legal parameters, AI efforts can stall due to unclear mandates, insufficient oversight or a lack of coordination across government levels.

2.4.2 Maturity levels – Governance, Strategy and Regulation



Exploring

An exploring-level tourism authority has no formal AI strategy or dedicated governance structure for AI. AI may be absent from the tourism policy agenda or mentioned only superficially in broader ICT or innovation plans. There is likely no single point of leadership or unit in charge of AI initiatives; any AI-related projects (if they exist) are ad-hoc and driven by individual champions or external partners rather than by institutional mandate. Governance mechanisms are minimal; for example, there are no specific guidelines on ethical AI use, data protection in AI projects or evaluation metrics for AI outcomes within the tourism sector. The regulatory environment for AI in tourism is undefined, with only general national ICT or digital laws applying. In essence, decisions related to adopting AI tools are made on a case-by-case basis without an overarching strategy or coordination.



Implementing

An implementing-level authority has taken initial steps to institutionalize AI planning, oversight and regulatory compliance. This often means the tourism authority has either developed a section on AI within its tourism strategy or is drafting a dedicated AI action plan for tourism. There may not be a stand-alone AI in tourism strategy yet in all cases, but AI is recognized in policy documents as a tool for achieving tourism development goals, for example, a national tourism strategy might include objectives to use digital innovation and AI for smart destination development or marketing. A governance structure is emerging: the tourism authority might have appointed an AI or digital innovation focal point, formed a working group or task force, or established inter-departmental coordination on technology projects. Basic guidelines or principles for AI use could be in discussion, like ensuring compliance with national data privacy regulations, embedding ethical AI principles from the national AI strategy into tourism projects, or applying procurement and liability standards in AI contracts. The implementing level also entails some capacity for project governance: for instance, procedures for evaluating AI project proposals, partnerships (public-private collaborations are encouraged but guided by memorandums of understanding (MoUs) or agreements) and initial risk assessment practices, such as checking algorithms for bias or ensuring tourist data is anonymized. Regulatory considerations at this level are still basic but increasingly referenced, with initial efforts to align tourism AI use with national laws and standards.



Consolidating

A consolidating-level authority in this dimension has embedded AI firmly into its tourism governance, strategy and regulatory frameworks. This is characterised by a comprehensive AI strategy or roadmap specific to tourism, endorsed at high levels of government, with clear goals, timelines and allocated resources. The tourism authority likely operates under an official policy that delineates how AI should be used to advance tourism objectives, e.g., enhancing competitiveness, sustainability or visitor experience), and how to manage the associated risks (privacy, employment impacts, etc.). Dedicated governance bodies or roles are in place, for example, an AI Advisory Board for tourism or a Chief Digital Officer within the tourism authority overseeing AI projects. At this level, regulatory and ethical safeguards are actively applied: for example, sector-specific regulations may guide the use of AI in marketing, procurement processes, or biometric technologies at tourist sites, in line with national and international privacy and consumer protection standards. Strong inter-institutional coordination ensures tourism authorities work with national AI regulators, data protection agencies, and digital ministries to maintain compliance and alignment with broader AI legislation (e.g. on data governance, cybersecurity, algorithmic transparency). tourism authority Moreover, performance monitoring of AI deployments is integrated into governance with KPIs, regulatory reporting and regular reviews to ensure accountability and public trust.

2.6
Workforce capacity and skill5

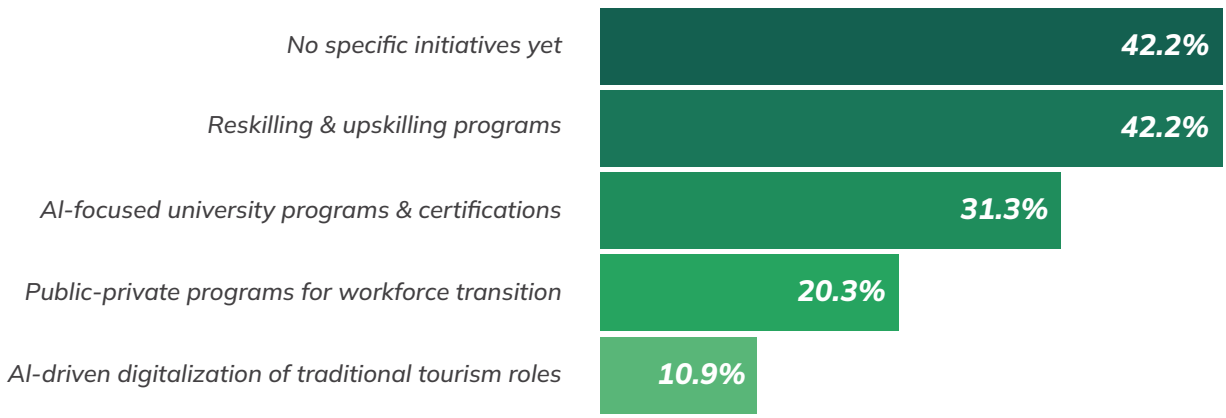
2.5.1 Definition and importance

Workforce skills refer to the availability and development of human capital capable of designing, managing and applying AI in the tourism public sector. This includes both technical expertise, e.g., data analysts, digital transformation managers, and strategic or operational literacy, e.g., public officials who can assess AI proposals, oversee implementation and engage with private-sector partners.

Among all barriers listed in the Global Survey on AI in Tourism, a lack of skilled staff was the most cited (68.8%). This includes not only AI engineers, but also civil servants trained in managing technology partnerships, evaluating ethical risks, or using dashboards and decision-support tools. Several respondents noted difficulty in recruiting or retaining digitally competent personnel due to limited budgets, competition with the private sector or outdated job classifications in public service.

Developing a tourism workforce ready for the future is critical for AI readiness. The Global Survey on AI in Tourism reveals a mixed picture of how governments are supporting this transition (see figure 2.3). While 42% of countries report having reskilling and upskilling programmes, and an equal share acknowledge having no specific initiatives yet, only a minority are implementing AI-focused university programmes (31.3%), public-private workforce transition schemes (20.3%), or policies to digitally transform traditional tourism roles (10.9%).

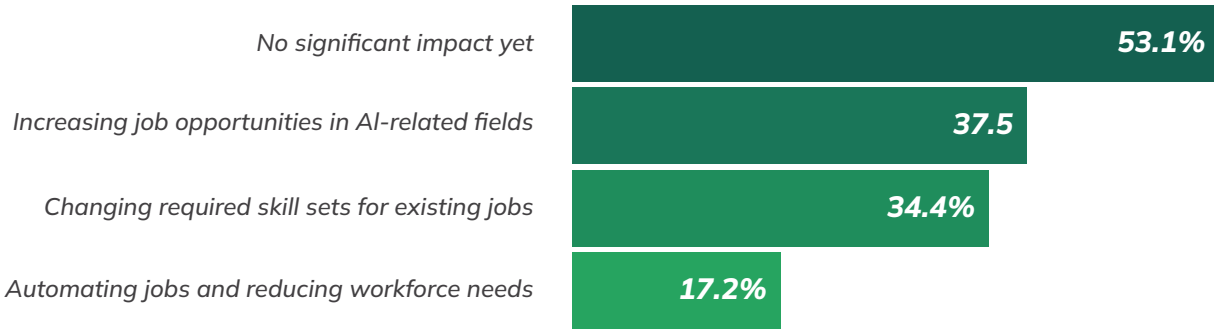
Figure 2.3. Government initiatives to help workers adapt to AI-driven changes



Source: World Tourism Organization (UN Tourism), 2025.

These gaps are concerning given the evolving nature of tourism jobs: although just over half of countries (53.1%) say AI has not yet had a significant impact on employment, 34.4% already observe a shift in required skill sets, and the same share see rising job opportunities in AI-related fields (see figure 2.4). Automation is also beginning to affect the sector, with nearly one in five countries reporting reduced workforce needs. Together, these trends highlight the urgent need for proactive workforce strategies that not only respond to AI-driven disruptions but also anticipate emerging roles and skills.

Figure 2.4 Impact of AI on tourism jobs in the respondent countries



Source: World Tourism Organization (UN Tourism), 2025.

Special attention is needed to close gender and inclusion gaps in digital skills, since women and marginalized groups remain underrepresented in AI-related tourism jobs20 The digital gender divide is a particularly pressing concern: women are already underrepresented in science, technology, engineering, and mathematics (STEM) fields and in digital employment, and without targeted action, advances in AI risk further widening these disparities. In tourism, where women make up a large share of the workforce but are concentrated in lower-skilled and lower-paid roles, the integration of AI could exacerbate inequalities if women are excluded from digital upskilling opportunities or leadership in AI initiatives. Addressing this requires deliberate policies and programmes that ensure equal access to AI-related training, mentorship and career pathways for women and marginalized groups. By embedding gender and inclusion considerations into AI strategies for tourism, governments and organizations can help prevent the reproduction of existing inequalities and instead leverage AI as a tool for empowerment, diversity and more inclusive growth in the sector.

2.5.2 Maturity levels – Workforce capacity and skills



Exploring

At this level, the tourism administration has very limited in-house AI expertise or training. The staff may have basic information technology (IT) literacy, e.g., using office software and social media, but generally lack exposure to data science or AI concepts. There are no specialized roles such as data analysts, data engineers or AI project managers on the team. If the organization pursues an AI-related task, it usually must rely on external consultants, vendors or support from other government agencies. Training programmes on digital skills are ad hoc or non-existent. For example, the tourism authority might occasionally send one or two officers to a general information and communication technologies (ICT) workshop, but there is no sustained capacity-building plan for AI. Moreover, the organizational culture might be resistant to new technologies; staff can be unaware of the relevance of AI or even sceptical of its benefits, leading to low demand for training.



Implementing

At this level, a tourism authority has started building internal skills and dedicating personnel to digital innovation. This may involve having a small team or at least designated staff members responsible for data and technology projects (for instance, a digital transformation unit (DTU) or an ICT focal point within the tourism authority). Some staff have received training in data analysis, statistics or basic AI concepts, often through workshops, certifications or academic partnerships. The organization may not yet have PhD-level AI scientists on payroll (which is uncommon in governments), but it has people who can liaise with technical partners and manage AI projects. For example, an implementer might have a data analyst who can run simple machine learning models on tourism data or an IT manager capable of overseeing a contract for an AI system. Workforce development programmes are emerging; there might be periodic training sessions on topics like data-driven decision making for tourism or collaborations with universities offering courses for civil servants. Additionally, hiring practices begin to value digital skills. For example, job descriptions for new hires in the tourism board could list experience with data or technology as a plus. The organizational mindset is also shifting; leadership encourages innovation, perhaps through internal champions — individuals who actively promote and support the adoption of new technologies — or pilot projects that allow staff to experiment with AI tools. For instance, trying out an AI-based translation tool for tourist inquiries.



Consolidating

A country that is consolidating its workforce capacity has a highly skilled, continuously learning team and often a dedicated digital innovation unit within the tourism authority. At this level, the organization likely employs or contracts specialists in data and AI, for example, a chief data officer or analysts with advanced training in statistics or AI. The tourism authority might have a tourism analysis centre or a collaboration with a tech hub that embeds data scientists into the team. There is a strong culture of ongoing professional development: staff regularly attend advanced trainings, international seminars or certification programmes on AI, and this knowledge is applied back into their projects. This level also means the organization has established knowledge-sharing networks as they learn from other countries and sectors and participate in communities of practice on AI in government. Importantly, top management (directors, ministers) are informed about AI trends and actively champion the use of data-driven approaches, which trickles down as support for innovation. The workforce is agile, able to manage partnerships with tech companies or startups and capable of guiding consultants rather than being wholly dependent on them.

2.7 Interoperability

2.6.1 Definition and importance

In the context of AI in tourism, interoperability refers to the ability of different information systems, applications, and devices to connect, communicate, and exchange data in a coordinated and seamless manner, both within and across organizational boundaries, e.g., between public and private sectors. This enables the efficient flow of data, services, and insights, which is crucial for building integrated smart tourism ecosystems, enhancing data-driven decision-making and facilitating the widespread adoption of AI applications.

While not listed as a standalone survey category, open-ended responses frequently pointed to the need for better data-sharing mechanisms, greater public–private collaboration and technical challenges in integrating AI with legacy systems. These insights signal that interoperability is both a technical and institutional issue. If systems remain siloed, AI deployments risk being narrow and unsustainable. But when integration exists, destinations can combine insights. For example, aligning flight arrivals, accommodation data and event calendars to optimize visitor flows.

Interoperability also determines whether AI innovations can scale. Many pilot projects fail to expand beyond capital cities or flagship sites because they are not supported by common standards or data agreements. To address this, public tourism authorities may need to establish memoranda of understanding, build data-sharing platforms and align with international interoperability standards. This is especially important for global interoperability in tourism, where travellers move across borders, and local tools must be compatible with global systems such as visa platforms, mobility apps or environmental indicators.

2.6.2 Maturity levels – Interoperability



Exploring

At the exploring level, systems and data are largely siloed. The databases of the tourism authority, if any, operate in isolation from other government systems. There is little integration horizontally, e.g., between the tourism authority and other ministries like transportation, culture, immigration, or vertically between national and local tourism offices. Data exchange is mostly manual; thus, if the tourism department needs hotel occupancy data or flight arrival statistics, it might request reports via email or paper, rather than accessing a shared digital system. There are no standardized data formats or protocols in use beyond basic spreadsheet or document exchanges, making it hard to aggregate or compare data from different sources. This lack of interoperability extends to public-private interactions. For example, tourism businesses may not report data in a consistent way, or there is no API for companies to feed tourism-related data into government systems. The concept of open data is nascent; the tourism authority likely does not publish datasets for external use, so external developers or other agencies cannot easily reuse tourism data.



Implementing

An implementer has taken concrete steps toward connecting systems and standardizing data. At this stage, the tourism authority likely participates in at least one inter-agency data sharing initiative or platform. For instance, there might be a government-wide data portal or tourism dashboard that aggregates information from customs, transportation, and tourism surveys in a single interface. Technical interoperability improves as the authority adopts common data standards, perhaps using shared identifiers for tourism sites or common metrics defined by international guidelines. There may be MOUs or data-sharing agreements formalized between the tourism authority and other entities, e.g., an MOU with the national airline or airport authority to regularly exchange data, or a partnership with the telecom regulator to receive anonymized mobile tourism statistics. The implementer level often features partial implementation of open data. For example, the tourism authority could have an open data section on its website with downloadable datasets on tourism indicators, or it might expose certain data via Application Programming Interfaces (APIs) for developers to create travel apps. Another hallmark is involvement in multi-stakeholder forums: the tourism authority might be actively participating in a smart city project or a digital government working group, ensuring tourism systems can plug into broader digital infrastructure, such as national ID systems for travel or integrated payment systems for tourist services.



Consolidating

A Consolidating country in interoperability has achieved a seamlessly connected and collaborative ecosystem for tourism data and services. In this advanced stage, the authority systems of tourism are fully integrated with relevant external systems: One-stop data integration is often realized via an enterprise architecture or national data infrastructure. For example, the tourism authority might pull data in real time from immigration databases, flight and hotel booking systems, credit card spending data and even global tourism datasets, all through automated, secure data pipelines. They actively adhere to and even help shape international standards for data and AI interoperability, e.g., using standards like JSON/Open Travel Alliance (OTA) for travel data exchange, aligning with UN Tourism statistical definitions or adopting AI model interoperability standards. The culture of openness and collaboration is strong: the authority not only shares its data widely with privacy safeguards but might also share AI tools and best practices with other sectors or countries. Public-private interoperability is at its peak: there may be formal tourism data trusts or industry data hubs where government and companies co-manage data for mutual benefit. For example, a tourism observatory that brings together data from hotels, airlines, ride-share companies and government sensors into a unified platform accessible to all authorized stakeholders. Cross-border interoperability can also be a feature at this level: a leading country might connect its tourism data systems with regional or international platforms, for instance, contributing to a regional tourism analytics portal or aligning visa/travel authorization data to facilitate visitor flows using AI.

2.7

Composite AI readiness maturity and application

Each of the five dimensions above contributes to an overall AI readiness maturity level for a tourism authority. Because a weakness in any single dimension can hinder AI implementation. The overall maturity is best viewed as a composite of all five dimensions rather than just equal to one of them. For practical assessment, a simple scoring scheme can be used. For example, assigning a score of [1] for 'exploring', a score of [2] for 'implementing' and [3] for 'consolidating' in each dimension. To gauge the composite level an average score would be calculated: An authority with several [1] and a single [2] would be 'exploring', whereas another with a variety of [2] and [3] might be considered as 'implementing' and only those scoring [3] in most dimensions would qualify as 'consolidating'.

This composite approach reflects the reality that AI readiness requires balance: excelling in one area cannot fully compensate for deficits in another. For instance, a tourism authority might have a great strategy document (governance at consolidating level), but if it lacks data systems and skilled staff (Infrastructure and Workforce at exploring level), its ability to execute that strategy remains limited. Thus, the composite index encourages a holistic capacity-building outlook.

Table 2.1 below summarizes the maturity criteria for the five dimensions, providing an overview of what constitutes exploring, implementing and consolidating levels in each.

Table 2.1 AI readiness framework – Maturity criteria by dimension



Data infrastructure

- **Exploring (basic capacity):** Fragmented or outdated data systems; tourism data collected manually or in silos; little real-time data, low use of cloud or big data.
  - Example: Stand-alone spreadsheets for visitor stats.
- **Implementing (intermediate capacity):** Established databases and some integration; beginning use of cloud and/or analytics; partial real-time data capture; improving data standards.
  - Example: Central tourism database with periodic updates from airports and hotels.
- **Consolidating (advanced capacity):** Fully integrated, modern data ecosystem; real-time data streams; big data and internet of things (IoT) utilized; open data portals and strong data governance in place.
  Example: Smart tourism platform aggregating live data from multiple sources for AI analysis.



Governance strategy and regulation

- **Exploring (basic capacity):** No explicit AI in tourism strategy; ad-hoc projects only; no dedicated AI governance structure, guidelines or regulatory clarity. The regulatory environment for AI in tourism is undefined, with only general ICT digital laws applying.
  - Example: No mention of AI in tourism plans, isolated pilot by an external vendor with no oversight of data protection or liability issues.
- **Implementing (intermediate capacity):** AI is acknowledged in a strategy or a draft plan; some governance is in place (task force or policy unit); initial guidelines aligning with national AI policies and data protection regulations. Regulatory references begin to appear in tourism strategies, e.g., privacy compliance and procurement rules.
  - Example: Tourism strategy chapter on digital innovation, working group coordinating AI efforts; initial compliance with national data protection laws.
- **Consolidating (advanced capacity):** A clear AI strategy or roadmap for tourism is adopted; strong leadership and inter-agency coordination; sector-specific AI regulations or ethical codes are in place; regulatory and ethical safeguards are actively applied, e.g., liability, procurement standards, biometric use and consumer rights). Regular oversight and key performance indicators – KPIs are embedded in governance.
  Example: Official Tourism AI Strategy, tourism authority AI unit and advisory board guiding nationwide initiatives; regulations for AI-enabled marketing and data use in tourism



Workforce and skills

- **Exploring (basic capacity):** Very limited AI and data expertise on staff; no training programme; reliance on external support for any digital project.
  - Example: IT tasks outsourced, staff untrained in data analytics.
- **Implementing (intermediate capacity):** Some staff with data and IT training; a dedicated digital officer or small tech team in place; periodic training and upskilling efforts.
  - Example: An in-house analyst manages tourism data and liaises with vendors and staff attend digital skills workshops.
- **Consolidating (advanced capacity):** High level of expertise and continuous learning; dedicated data science or innovation team; leadership champions AI; regular capacity-building and knowledge exchange.
  Example: Tourism board employs data scientists, runs an AI lab or fellowship and staff routinely update skills and drive innovation projects.

Interoperability

- **Exploring (basic capacity):** Siloed systems; minimal data sharing; no common standards or application programming interface – APIs; limited collaboration with other agencies or the private sector on data.
  - Example: Separate databases can't communicate; data exchanged via emails and spreadsheets only.
- **Implementing (intermediate capacity):** Some systems connected or sharing data; adoption of standards underway; memorandum of understanding – MoUs enable data exchange with key partners; initial open data and API offerings.
  - Example: Tourism data feeds into a national data portal and agreements are in place with immigration to share visitor data regularly.
- **Consolidating (advanced capacity):** Seamless integration across platforms and organizations; common data standards fully used; open APIs and data hubs connecting public and private sectors; participates in regional and global data initiatives.
  Example: Integrated tourism data hub linking government and industry systems in real time, enabling cross-sector AI applications and regional benchmarking.

This framework allows tourism authorities to self-assess their AI readiness. By evaluating their status against the criteria for each dimension, officials can identify whether they are exploring, implementing or consolidating in each area. The overall maturity composite helps in benchmarking progress: a country might determine it is overall at the implementing level in 2025 and set a goal to reach the consolidating level within a few years by addressing specific gaps, e.g., investing in data systems or staff training. Moreover, the structure of the framework makes it practically applicable as it not only diagnoses gaps but also points toward next steps. An exploring country in data infrastructure knows to prioritize building a basic data system before attempting complex AI, while an implementing country in workforce skills might aim to create a dedicated data team to move into the consolidating level. Policymakers can thus use the maturity model as a roadmap for capacity-building initiatives, ensuring resources are directed to the most pressing needs identified whether upgrading IT infrastructure, establishing governance mechanisms or training employees.

To complement the qualitative maturity framework and enable comparative analysis, this report introduces an AI deployment score as a proxy indicator of implementation progress across countries. The score is derived from Global Survey on AI in Tourism responses to the question: "In what areas is your tourism administration currently applying or planning to apply AI?".
Each respondent could select from a predefined list of use cases, e.g., marketing and promotion, visitor analytics, crisis management, etc. The AI deployment score represents the total number of distinct AI applications selected by each country. In this way, the score reflects the breadth of AI deployment in public tourism administrations, rather than intensity or technological sophistication.21

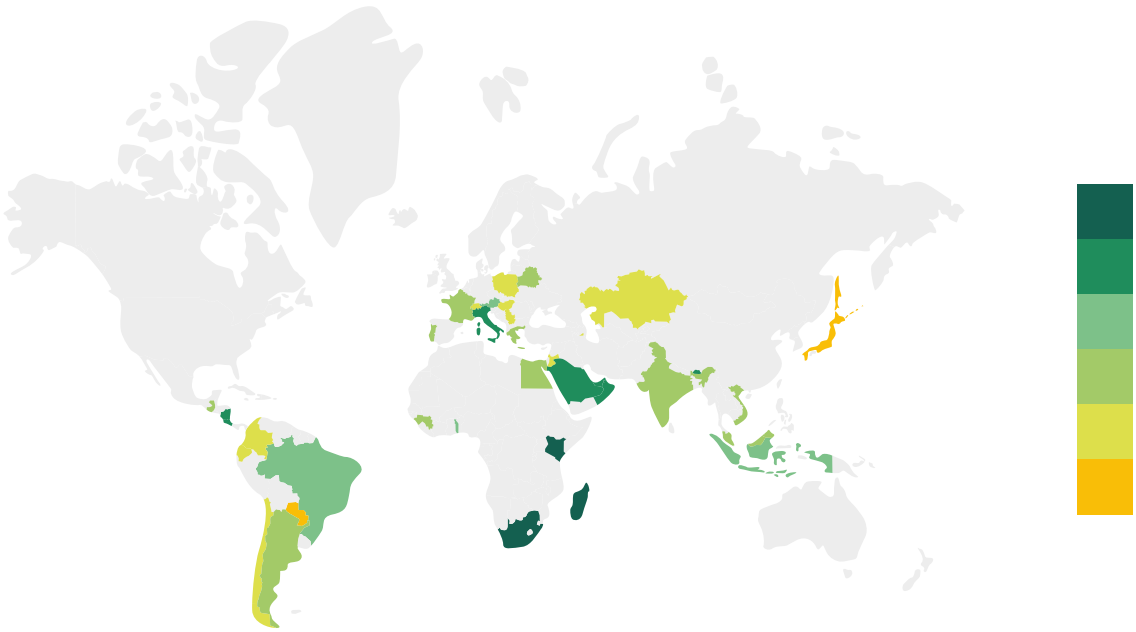
While this metric does not assess the quality, scale, or outcomes of implementation, it offers a consistent, data-driven basis to:

- Compare deployment levels across countries and regions.
- Identify early movers and laggards in public-sector AI adoption; and
- Visualize global disparities via the AI Deployment heatmap presented in Figure 2.5.

This score is complementary to the readiness framework outlined earlier in this chapter. Whereas the framework captures structural enablers, such as infrastructure, governance, workforce capacity and interoperability, the deployment score measures actual uptake, offering a tangible indicator of how extensively AI is being applied in practice by tourism authorities.

Figure 2.5 illustrates aggregate AI Deployment Scores derived from the Global Survey on AI in Tourism. Each country is shaded according to the number of public-sector tourism use cases it reported, combined into a single composite score. No individual responses to specific Global Survey on AI in Tourism questions are disclosed. The visualization is intended to provide a comparative overview of global trends while fully preserving the confidentiality of respondent countries.

Figure 2.5 Aggregate AI Deployment Scores



Source: World Tourism Organization (UN Tourism), 2025.

It is important to note, however, that being at a consolidating level is not an end in itself; rather, the goal is to ensure every country can progress in each dimension at a pace appropriate to its context, thereby unlocking the benefits of AI for sustainable and inclusive tourism growth.

In the next chapters, it delves deeper into strategies and case studies that can help exploring, implementing and consolidating tourism authorities alike advance their capabilities, fostering an environment where AI innovations can be responsibly implemented in tourism for the public good.[i]

03

Strategy, governance, and capacity building

About this chapter:

This chapter outlines how countries can embed AI into tourism strategies through strong governance, capacity building and collaboration. It highlights the need for integrating AI at both national and local levels, ensuring alignment with broader digital and development goals. Public-sector leadership, multi-level coordination and targeted skills development are identified as critical enablers, with emphasis on building digital talent pipelines across government and industry. The chapter underscores the value of public-private-community partnerships, innovation ecosystems and startup engagement to accelerate adoption. Financing strategies, from public budgets to incentives and co-investment models, are explored alongside the importance of cross-border cooperation for knowledge sharing, interoperability and joint AI projects. Collectively, these elements form a comprehensive approach to deploying AI in tourism that is strategic, inclusive and globally connected.

Key words:

AI strategy // governance // capacity building // public-private-community collaboration // cross-border cooperation

Key messages:

- Successful AI adoption in tourism requires integrated strategies, strong governance, skilled talent, and partnerships across public, private and academic sectors; and
- Financing, incentives and regional cooperation are essential to scaling AI adoption, ensuring benefits are inclusive and aligned with sustainable tourism goals.

AI in tourism requires not only new technologies but also strong governance, effective regulation, and sustained capacity building. Countries around the world are recognizing the need to integrate AI into tourism planning, strengthen public-sector leadership, develop human capital and forge partnerships; all underpinned by adequate funding and international cooperation. This chapter provides global guidance on these dimensions, grounded in the work of UN Tourism on digital transformation, smart destinations, tourism data spaces and innovation ecosystems. Each section offers insights and examples to help policymakers chart a path for integrating AI in tourism strategies and governance frameworks in a way that benefits all stakeholders.

3.1

Integrating AI into national and local tourism strategies

Integrating AI into tourism strategies ensures that adoption is intentional and aligned with broader development goals. Many governments have begun to incorporate digital transformation in their national agendas, yet few have specific AI plans for tourism. The Global Survey on AI in Tourism revealed that fewer than one in six tourism administrations have formally planned for AI in tourism (see figure 1.2). This gap highlights an opportunity: weaving AI considerations into both national tourism master plans and local destination strategies.

At the national level, integrating AI might involve adding dedicated chapters or objectives on digital innovation in tourism strategies. For example, countries at the forefront have adopted official AI-in-tourism roadmaps and set up specialized units to oversee implementation. These strategies typically outline priority use cases, such as smart marketing, visitor flow management, or data-driven policy (see figure 3.1) and guidelines for ethical AI use in tourism. They also ensure alignment with national digital economy policies and frameworks for AI governance. By embedding AI into the sector's vision and plans, governments send a clear signal of commitment, helping to mobilize resources and stakeholder buy-in.



Figure 3. Planned AI application priorities by tourism ministries

1. **Digitalization** of tourism data and analytics
2. **AI-powered** marketing & tourism promotion
3. **Tourism forecasting** & trend prediction
4. **Smart** destination management

Source: World Tourism Organization (UN Tourism), 2025



At the local and destination level, strategy integration is equally crucial. Cities and regions, especially those pursuing the smart destinations approach, are incorporating AI to improve visitor experiences and management. UN Tourism has promoted the concept of smart destinations' as a framework for cities and regions to leverage technology and data for better tourism management and local quality of life based on five pillars: innovation, technology, accessibility, sustainability and governance. Based on this, many destination management organizations (DMOs) are developing digital plans that include AI-powered tools, such as chatbots for visitor information or predictive analytics for crowd management. These local strategies should link back to national objectives so that efforts are complementary. Multi-level strategy integration prevents siloed projects. For instance, a smart city tourism initiative can align with national AI guidelines on data privacy or interoperability. Ultimately, making AI an integral part of tourism strategies at all levels ensures that projects are not ad-hoc experiments but part of a cohesive vision for innovation, sustainability and competitiveness in the tourism sector.[22]

3.2
Public sector leadership and multi-level coordination

Strong public-sector leadership is essential to drive AI adoption in tourism and to coordinate efforts across various levels of government. Given that the Global Survey on AI in Tourism was conducted exclusively with Member States, this section is intentionally public-sector centric, focusing on the role of governments and administrations in leading AI adoption. AI initiatives often cut across domains, from transport and culture to urban planning, so tourism authorities must lead with a clear mandate and foster collaboration among national, regional and local bodies. In practice, this means establishing governance structures that enable multi-level coordination and policy coherence on AI in tourism.

At the national level, tourism ministries should lead the charge by articulating and championing a clear strategic vision for AI within government. This often entails establishing dedicated leadership roles or task forces, such as appointing a chief digital officer for tourism or forming an inter-ministerial committee on tourism AI. Countries demonstrating advanced progress in this domain typically possess robust inter-agency coordination mechanisms. These mechanisms facilitate collaboration with ministries of technology and education, along with data protection authorities and other relevant stakeholders, ensuring tourism AI initiatives align seamlessly with broader national AI frameworks and infrastructure plans. Furthermore, a high-level commitment from tourism ministers, emphasizing the importance of AI, is crucial for securing the necessary political and budgetary support. As evidenced by Global Survey on AI in Tourismrespondents, strong leadership and clear ownership within the tourism tourism authority are paramount; without them, AI initiatives risk remaining isolated pilot projects. Ultimately, public-sector leaders, as the central focus of this report, play a pivotal role in setting the tone for ethical use, risk management and inclusivity in AI applications, thereby ensuring alignment with public interests and sustainable tourism goals. Establishing independent ethics committees or advisory boards for AI in tourism can strengthen trust and ensure safeguards against misuse[23]

Equally important is vertical coordination between national and sub-national authorities. Tourism is often managed at multiple levels: national tourism boards, provincial or state tourism departments and city destination management/marketing organizations (DMOs), all of whom may pursue their own digital initiatives. To avoid fragmentation and duplication, countries are establishing frameworks for sharing knowledge and aligning AI initiatives across levels. This could include regular coordination meetings, joint working groups or national guidelines that local destinations can adapt. Multi-level coordination ensures that a smart destination project for a city or a tourism data platform for a region uses interoperable standards and complements the national strategy. It also allows smaller or less-resourced municipalities to benefit from national support, whether through technical guidance or funding, when experimenting with AI.

One emerging best practice is the creation of networks or councils that link national and local innovators. For instance, national tourism bodies launch digital forums where city tourism boards share successes and challenges in implementing AI. This kind of horizontal learning, enabled by national leadership, accelerates adoption. In sum, public-sector leadership involves both leading by example, e.g., a tourism authority piloting an AI-driven tourism observatory and enabling others, e.g., helping a rural destination use AI for smart marketing. By coordinating efforts from the national to the local level, governments can create an ecosystem where AI in tourism advances in unison rather than in silos.

> ***Strong public-sector leadership is the cornerstone for advancing AI in tourism, ensuring coordination, ethics, and innovation across all levels of government.***

3.3
Skills development and digital talent

Developing human capacity is a cornerstone of any AI strategy in tourism. New technologies are only as effective as the people who design, deploy, and use them. However, the lack of AI-related skills in tourism administrations is one of the most cited barriers to adoption. In the Global Survey on AI in Tourism the UN Tourism, over 68.8% of countries reported a shortage of skilled professionals to develop and manage AI solutions in tourism. Building a pipeline of digital talent, within both the public sector and the wider tourism workforce, is therefore critical for responsible AI integration.

On the public-sector side, tourism authorities need to invest in reskilling and upskilling their staff and attracting new talents (see figures 2.2 and 2.3). This starts with training existing employees, from policymakers to statisticians, in digital literacy, data analysis and the basics of AI. According to the Global Survey on AI in Tourism, more than half of the respondent Member States identified capacity building and professional training as a top priority to accelerate AI adoption in the tourism sector. Respondents highlighted the pressing need for technical upskilling across public and private actors, with particular emphasis on data literacy, AI fundamentals and digital capabilities for tourism professionals. Several countries noted that their ministries or national tourism organizations lack in-house expertise to lead or evaluate AI-related initiatives and called for targeted, ongoing training programmes. The Global Survey on AI in Tourismurvey also pointed to a knowledge gap among tourism small and medium-sized enterprises – SMEs and local governments, underscoring the importance of tailored approaches to professional development and awareness-raising at all levels of the tourism value chain.
Many tourism ministries are beginning to run capacity-building programmes such as workshops on data analytics for tourism planning or certifications in AI project management for civil servants. In addition, the UN Tourism Online Academy has advanced its work in AI, offering dedicated courses and training modules to strengthen digital and AI-related skills for tourism professionals worldwide. These programmes have been used to complement national initiatives, providing accessible and scalable training resources.

Beyond general training, specialized roles may be required: for example, hiring data scientists or AI project managers, or partnering with consultants on specific projects. A dedicated innovation or data team within the tourism board can drive initiatives and serve as trainers for colleagues. Leading countries have even established AI labs or innovation units in their tourism organizations, sometimes in collaboration with universities, to experiment with new applications and build internal expertise, e.g., fellows programmes that embed tech experts in tourism departments.

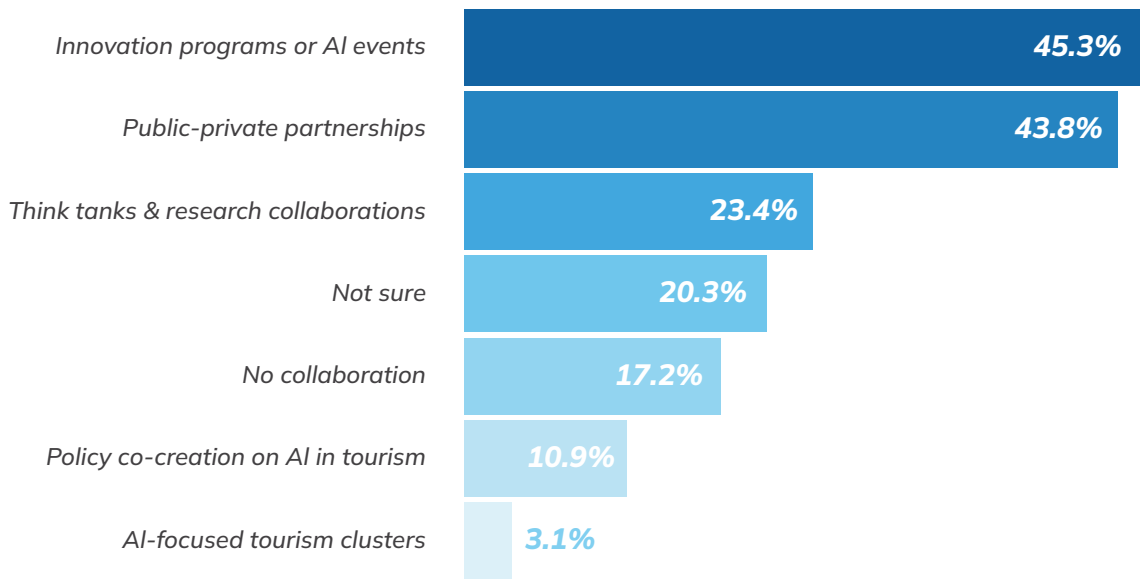
It is also important to foster skills in the private tourism sector, particularly among SMEs that make up a large part of the industry. Public authorities can facilitate this through tourism digitalization programmes. For instance, the Tourism Digital Futures Programme for SMEs, launched by UN Tourism in 2022, provides training and tools to help small tourism businesses adopt digital and AI solutions. The AI-related courses of the Tourism Online Academy have also been integrated into SME-focused training, extending the reach of AI literacy to entrepreneurs and smaller operators. Governments may offer online academies or incubators where tourism entrepreneurs can learn about AI, access mentorship and experiment with data. Public-private educational partnerships can be especially valuable: tourism schools and hospitality institutes can update curricula to include AI in tourism, and tech companies can contribute expertise by offering seminars or trainee programmes for tourism officials. A multi-stakeholder approach to skills development ensures that knowledge transfer happens both within government and across the industry.

Finally, investing in talent retention and attraction is key. Governments might create incentives to draw AI professionals into the tourism sector: for example, competitive salaries for IT roles in tourism boards or fellowships that rotate data experts through tourism ministries. They can also leverage academia by sponsoring research on AI in tourism and engaging students in real-world projects, such as hackathons and internships. All these efforts build a cadre of professionals who can confidently implement and oversee AI initiatives. In the long run, a tourism sector that is rich in digital talent will be more agile and innovative, able to continuously adapt to new AI trends and tools.

3.2
Public-private collaboration

Public-private collaboration is indispensable for scaling AI in tourism. Most AI innovations, from travel chatbots to recommendation engines, originate in the private sector, while governments hold key datasets and policymaking authority. According to the Global Survey on AI in Tourism, nearly 45% of countries reported some form of public-private partnership, and a similar share (43.8%) highlighted participation in innovation programmes or AI-related events. However, more structured collaborations, such as policy co-creation mechanisms, were cited by only 10.9% of respondents, and just 3.1% mentioned the existence of AI-focused tourism clusters (see figure 3.2).

Figure 3.2 Collaboration between the government and the private sector in AI-driven tourism initiatives



Source: World Tourism Organization (UN Tourism), 2025

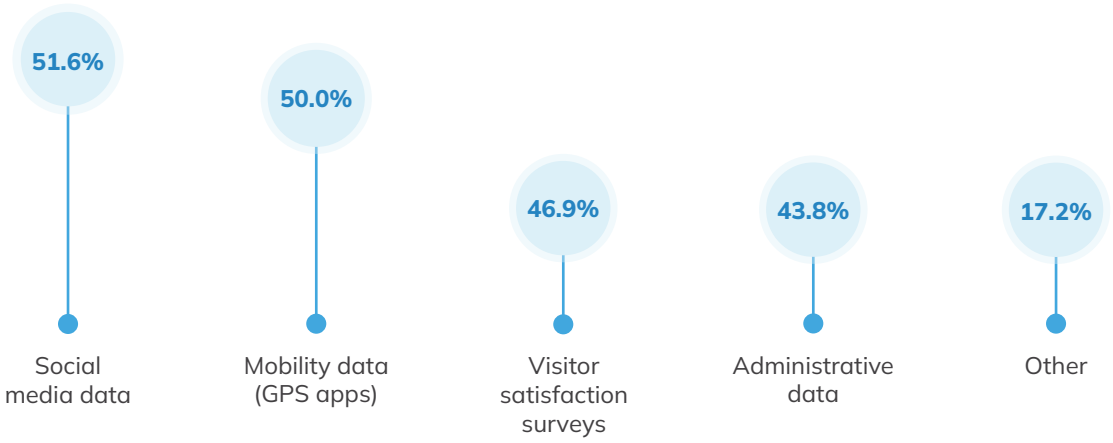
These figures demonstrate a foundational recognition of the critical role of private sector in AI innovation and the capacity of public sector to facilitate its responsible adoption. Such collaborations enable governments to leverage private sector expertise, technology and agility, while ensuring that AI applications serve broader public interests and align with national tourism objectives. Successful initiatives often include joint pilot projects, data-sharing agreements (where legally permissible and ethically sound) and co-creation of AI solutions that address specific industry needs, such as enhancing visitor experience or improving destination management. However, while collaboration is growing, institutionalized and policy-level engagement remains limited, leaving significant room to strengthen partnerships that align innovation with national tourism goals.

While overreliance on a few providers poses risks, it also highlights the need to nurture SMEs and open-source innovators. This creates room for tourism to act as a sandbox where smaller actors can scale quickly and contribute to global AI competitiveness.

Formal collaboration platforms can institutionalize the public-private dialogue on AI. For example, some countries have established tourism innovation councils or digital transformation committees that include representatives from tourism ministries, national travel associations, tech companies, airlines, hotel groups and startups. These bodies meet to share information on emerging AI trends and to co-create solutions for challenges like tourist safety or marketing. They can also advise governments on regulatory or infrastructure needs from an industry perspective. Even less formal approaches, such as regular roundtables or public-private workshops on AI, help build trust and align objectives. By engaging industry early, the public sector can identify viable use cases and avoid duplicating what the market already offers.

Data sharing partnerships are another critical form of collaboration. Many high-value AI applications in tourism, such as real-time visitor insights or personalized services, rely on combining public and private data. For instance, merging the entry statistics of a government border with the mobility data of a mobile operator (see figure 3.3). Progressive destinations are developing frameworks for trusted data exchange with private stakeholders, sometimes under the umbrella of emerging tourism data spaces. The recent initiative on tourism data space launched by UN Tourism aims to create secure, interoperable environments for such data sharing. Through agreements or platforms, public agencies can provide anonymized datasets, e.g., visitation numbers, museum entries) while private firms contribute their data, enabling AI models that benefit all parties. Ensuring proper governance (to address privacy and competition concerns) is part of this collaborative approach.

Figure 3.3 Type of data used to train or support AI applications in tourism



Source: World Tourism Organization (UN Tourism), 2025

3.5

Role of innovation hubs, academia, and startups

Cultivating an innovation ecosystem around tourism and AI can greatly enhance the capacity of a country to adopt new technologies. Innovation hubs, academic institutions and startups each play a complementary role in this ecosystem. They generate new ideas, research local solutions, build prototype tools and train talent, all of which can support the goals of the public sector. Governments, in turn, can catalyse this ecosystem by providing platforms, funding and an enabling regulatory environment.

Innovation hubs and labs dedicated to tourism technology serve as living laboratories where AI solutions can be developed and tested in collaboration with end-users (tourists and businesses) and policymakers. Some tourism boards have launched or partnered with such hubs, for example, establishing a tourism innovation centre or incorporating tourism into existing national tech hubs. These centres often bring together startups, established tech firms, universities, and government agencies under one roof to focus on travel and hospitality challenges. They can run accelerator programmes for tourism startups, mentorship networks, or pilot projects in destinations. The public sector benefits by having a safe space to experiment with AI, for instance, trying out an AI-powered museum guide in a controlled setting before a wider rollout. Meanwhile, innovators gain domain insights and access to public data or facilities.

Academia and research institutions contribute by advancing knowledge and nurturing skilled graduates. Universities can partner with tourism authorities on research into AI applications, such as using machine learning to predict tourist demand or studying traveller sentiment through social media analytics. Such research provides evidence on what works and identifies potential pitfalls. For example, bias in AI recommendations or negative impacts on local communities. Academic pilots can also be scaled up by the public sector once proven. Additionally, many universities are now home to incubators or innovation labs where students and faculty launch startups; by focusing some of these on tourism, academia directly feeds the pipeline of solutions. Governments can formalize collaboration via MoUs with academic institutions, for example, a tourism tourism authority might fund the lab project of a university on AI-driven sustainability tracking in tourism, with a view to adopting the tool in its policy work. Education institutions are also key to curriculum development: as mentioned in the previous section, integrating AI and data science into tourism and hospitality courses ensures the next generation of tourism professionals is tech-savvy.

Startups are often the agile innovators that push boundaries in applying AI to niche tourism problems. Around the world, travel-tech startups have pioneered ideas like AI trip planners, virtual reality tours or predictive models for hotel pricing. The challenge is that many tourism startups struggle to reach scale or connect with government procurement channels. Public initiatives can bridge this gap. The UN Tourism Challenges and Startup Competitions in tourism innovation have shown how exposing startups to a global network and to investors can rapidly accelerate their growth. On a national level, tourism ministries can host innovation challenges or offer seed funding for startups that address public priorities (such as rural tourism promotion or visitor safety through AI). Some countries also provide innovation grants or tax incentives for small companies working on tourism-focused AI projects, effectively encouraging entrepreneurship in areas that the market alone might overlook. By collaborating with startups, governments gain access to creative solutions and can pilot them cost-effectively, while startups gain validation and a path to wider adoption, often the government or a destination becomes the first big client.

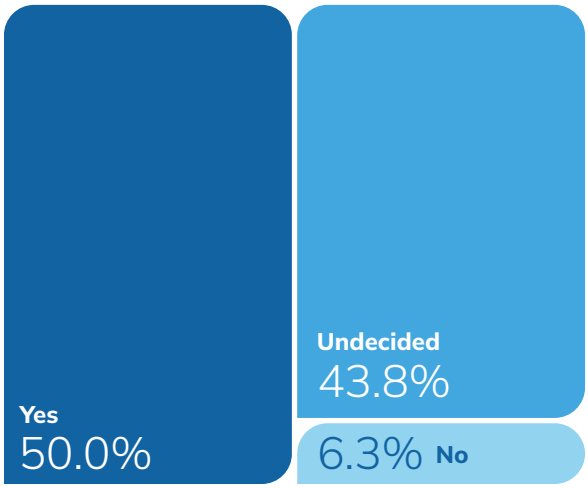
In fostering these ecosystems, governments should aim to play a facilitating role: opening doors, easing red tape and providing resources like open data, mentorship or coworking spaces in tourist sites for pilots. An example of best practice is the arrangement of innovation sandbox environments: policy-flexible zones where new AI applications in tourism can be tested with temporary regulatory relief. For instance, a city might allow an autonomous shuttle trial for tourists in a tech park before formal regulations are in place. In collaboration with universities and industry, these sandboxes can yield valuable lessons and accelerate policy learning. Overall, the synergy of innovation hubs, academia and startups creates a vibrant ecosystem. It ensures that AI adoption in tourism is not solely top-down but also bottom-up; driven by local creativity, scientific research and entrepreneurial energy, all channelled toward the public good in tourism.

3.6

Financing and incentivizing AI adoption

No AI strategy can take off without addressing the questions of financing and incentives. Implementing AI in tourism often involves significant upfront costs: investing in data infrastructure, purchasing or developing software, training staff and maintaining new systems. In the Global Survey on AI in Tourism high costs of implementation were cited by 57.8% of countries as a major challenge, alongside skill gaps and infrastructure limits (see figure 1.5). This underscores that even when the will and vision exist, budget constraints can stall progress. Despite these challenges, there is a clear forward-looking intent: over half of ministries (50.0%) plan to increase funding for AI initiatives in tourism over the next five years, with an additional 43.8% undecided. This signals a growing recognition of the importance of AI and the need for financial commitment (see figure 3.4). Governments therefore have a role to play in mobilizing funds, reducing financial risks for innovation, and creating incentives for both public and private actors to embrace AI.

Figure 3.4 Tourism authority plans to increase AI funding in tourism over the next five years

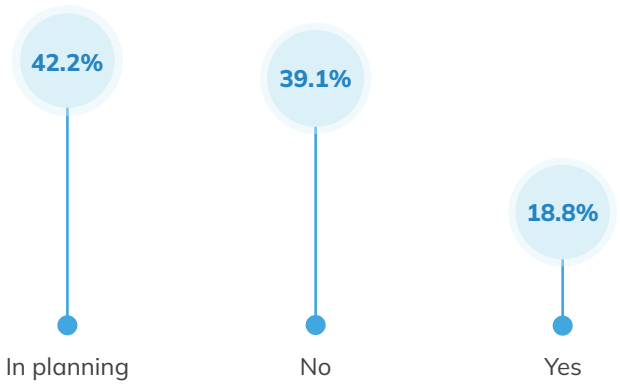


Source: World Tourism Organization (UN Tourism), 2025

On the public finance side, tourism authorities should consider allocating dedicated budgets for digital transformation. This could mean earmarking a portion of the national tourism development budget specifically for ICT upgrades and AI projects, much as budgets are set aside for marketing campaigns or infrastructure. Some countries have leveraged international funding and development assistance for this purpose. For example, tourism digitalization projects can be packaged into proposals for multilateral development banks or innovation funds. Many of which, post-pandemic, are keen to support digital resilience and smart tourism. Integrating tourism AI needs into broader national digital strategies can open the door to cross-sector funding. For instance, if a country has a national AI fund or digital economy programme, tourism projects should be eligible to compete for those resources.

In addition to direct funding, incentive mechanisms can encourage private-sector investment in AI for tourism. The Global Survey on AI in Tourismindicates that 18.8% of governments are currently providing financial incentives for AI innovation in tourism, with another 39.1% in the planning stages (see figure 3.5).

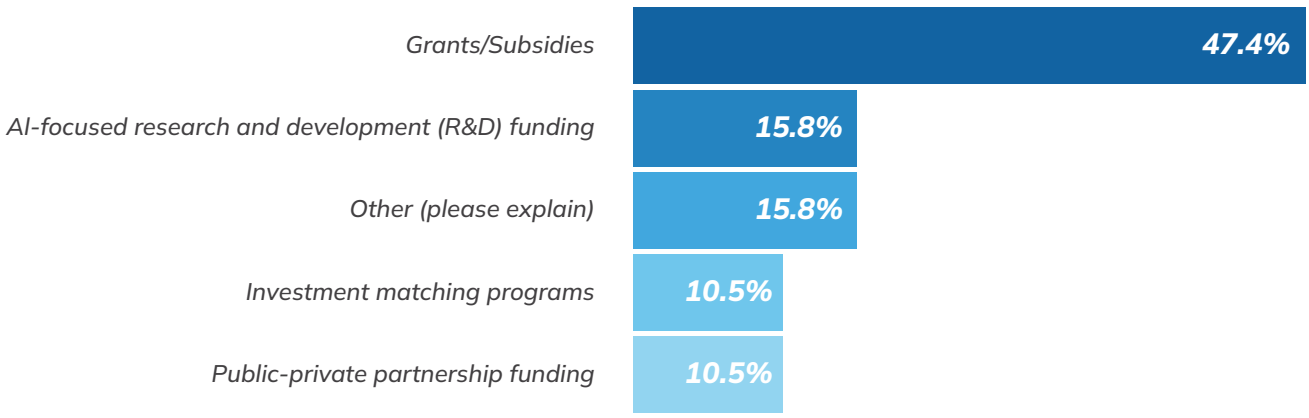
Figure 3.5 Government provision of financial incentives for AI innovation in tourism



Source: World Tourism Organization (UN Tourism), 2025

Among those offering incentives, grants or subsidies are the most common (47.4%), followed by AI-focused research and development (R&D) funding and investment matching programmes (both at 10.5%) (see figure 3.6). Tax incentives are one option: governments can offer tax credits or deductions for tourism businesses, especially SMEs, that invest in approved digital technologies, similar to schemes for R&D or renewable energy. Another approach is launching innovation grant programmes or competitions where companies or research consortia bid for grants to solve specific tourism challenges using AI. These grants not only co-finance solutions but signal government priorities, guiding innovators towards pressing public needs. Public procurement itself is a powerful incentive; if tourism boards clearly signal interest in AI solutions, through tenders or calls for proposals for things like AI-based tourist information systems, it can stimulate market development. Small pilot contracts can later evolve into larger procurements if the tech proves valuable.

Figure 3.6 Types of incentives offered to incentivize AI innovation in tourism



Source: World Tourism Organization (UN Tourism), 2025

Targeted incentives can also drive adoption among local destinations and allied sectors. For example, a national government might create a challenge fund for smart destinations, where cities can apply for funding on a competitive basis to implement an AI project aligned with national strategy. By making such funds available, central authorities nudge local governments to get on board with AI and share some of the financial burden. In federal countries or those with devolved tourism responsibilities, cost-sharing models, e.g., 50/50 funding between central and local for approved projects, have been effective in incentivizing action while ensuring commitment from both sides.

Furthermore, partnerships with the private sector can alleviate financing hurdles. Public-private investment models, such as co-financing an AI lab or a data platform, spread costs and benefits. In some cases, private companies may be willing to offer in-kind contributions or discounted services to pilot AI in a high-visibility tourism project, in exchange for references or data access with appropriate safeguards. Corporate social responsibility or sustainability funds of large tourism companies like airlines and hotel chains could be channelled into collaborative AI projects. For example, using AI to reduce the environmental footprint of tourism.

Finally, it is important to consider long-term financial sustainability. AI projects should ideally demonstrate a return on investment in terms of efficiency gains or increased revenues. For instance, if an AI-driven marketing campaign yields a measurable boost in tourist arrivals or spending, that success can justify budget expansions or continued funding. Tourism ministries can work with finance ministries to develop business cases for AI investments, quantifying how improved forecasting, personalization or resource allocation will pay off in economic terms. Showcasing such returns helps institutionalize funding for AI, moving it from one-off pilots to line items in recurring budgets. In summary, a mix of funding sources (public budgets, international support and private investment) combined with smart incentives can accelerate AI adoption by lowering the financial barriers and sharing the costs of innovation across stakeholders.

3.7 Cross-border and regional cooperation

The transformative impact of AI on tourism is not confined by national borders. Tourists move across countries, and so do data and digital services. Cross-border and regional cooperation can significantly amplify the benefits of AI in tourism, especially for smaller or less technologically advanced countries. By sharing knowledge, aligning standards and pooling resources, countries can tackle common challenges and ensure that AI-driven innovations spread more evenly across regions.

One key area for cooperation is knowledge exchange and capacity building at the regional level. Through organizations like UN Tourism and regional bodies, e.g., the European Union (EU), the Association of Southeast Asian Nations (ASEAN), the African Union (AU) or regional tourism organizations, countries are coming together to discuss AI trends and policies. Regional workshops or communities of practice allow tourism officials to learn from mutual experiences: for example, how the tourism board of a country implemented an AI-based visitor tracking system, or how another is regulating AI recommendations platforms. Such exchanges can prevent each country from reinventing the wheel and help establish best practices suited to regional contexts, considering cultural, linguistic or infrastructural commonalities. For instance, within the European Union, tourism administrations benefit from EU-wide forums on digital tourism and alignment with the European Digital Policy Initiative (EDPI) ,such as AI ethics guidelines or data protection laws, provides a common foundation. In Africa, regional tourism blocs and the UN Tourism Agenda for Africa 2030 emphasize innovation and digital transformation, encouraging countries to pursue AI opportunities in line with a shared vision for sustainable and inclusive tourism development.

Another critical aspect of cross-border cooperation is harmonizing data standards and sharing data. Tourists often travel through multiple countries in one trip, for instance, in regions like Schengen area, or among island nations in the Caribbean or Pacific, generating data that if combined could yield richer insights than data from any single country alone. Recognizing this, collaborative initiatives are emerging to create transnational tourism data spaces. These are agreements or platforms where countries

agree on common data formats, governance rules, and technologies to exchange tourism-relevant data securely. The aim is to enable AI applications that, for example, track visitor flows across borders helping to manage carrying capacity in multi-country circuits or analyse travel patterns at a regional scale for better marketing. The European Commission has been working on a European common data space for tourism , and the work of UN Tourism on tourism data spaces seeks to facilitate "trusted data flows across destinations, tourism providers, and government agencies". By improving interoperability and data access, these efforts lay the groundwork for AI deployment at scale, benefiting all participating countries: a small nation can plug into a larger data ecosystem rather than building everything from scratch.

Cross-border cooperation can also address regulatory and ethical dimensions of AI in tourism. Many policy issues such as data privacy, cybersecurity and AI-driven misinformation, are global in nature. Through international cooperation, countries can strive for aligned regulations that prevent loopholes and protect travellers consistently. The data of a tourist, for instance, should be safeguarded whether they are in country A or country B. if each follows radically different AI rules, it can undermine traveller trust. Bodies like the G7 and G20 Tourism Working Groups (TWG) have begun discussing common principles for digitalization and AI in tourism. By contributing to these dialogues, countries help shape a coherent global framework which they can then adapt nationally. Additionally, neighbouring countries sometimes face shared issues, e.g., managing an influx of tourists to a cross-border heritage site or coordinating emergency response in tourist regions that span borders. AI systems like early warning tools or crowd management platforms can be much more powerful if countries cooperate in deploying them regionally. For example, a mountain range or marine park managed by multiple nations using a joint AI system to monitor visitor impact and conservation status.

Finally, regional cooperation can involve joint investment and projects. Two or more countries might co-develop an AI application with mutual benefits. For example, consider the United Nations Educational, Scientific and Cultural Organization (UNESCO) cross-border heritage route: countries along the route could collectively invest in an AI-powered virtual guide that works across the entire route, providing tourists with a seamless experience and sharing the costs. In regions with disparate capacity levels, pairing up can be a win-win: a more advanced country might handle the technical development while a partner country provides the testbed and contextual knowledge, with both adopting the final product. Donor agencies often encourage such multi-country projects, as they foster regional integration. An illustration is the smart corridor initiatives in some regions, where countries jointly use digital tools (potentially AI-driven) for facilitating travel, such as shared e-visa platforms or health and vaccination verification systems; these rely on interoperability and trust between countries.
In conclusion, cross-border and regional cooperation acts as a force multiplier for AI in tourism. It ensures that innovations diffuse beyond one country, helps set common standards that reduce fragmentation and builds solidarity, so that even those with limited resources can partake in the AI-driven transformation of tourism. By working together, countries can address collective challenges such as crisis management, sustainability and inclusivity in tourism through coordinated AI solutions, while also speaking with a stronger united voice in global discussions on ethical and people-centred AI deployment.

> ***Cross-border and regional cooperation multiplies the impact of AI in tourism, enabling shared innovation, common standards, and inclusive benefits for all countries.***

04

Guidelines for public sector implementation

About this chapter:

This chapter sets out guidelines for implementing AI in the public sector with a focus on ethics, inclusivity and public value. It stresses the need for ethical frameworks, transparency, human oversight and the protection of marginalised groups. Open data and interoperability are highlighted as essential for innovation, while updated procurement practices can ensure AI projects align with public interest goals and avoid vendor lock-in. Public-private partnerships, testbeds and regulatory sandboxes are recommended to foster innovation while managing risks. This chapter also calls for sector-specific AI toolkits and pilot projects to address unique industry needs, such as tourism, ensuring solutions are culturally appropriate and accessible for people with disabilities and specific access requirements. By combining ethical governance, data readiness, strategic procurement and targeted pilots, governments can responsibly harness AI to enhance services and societal well-being.

Key words:

Ethics // inclusivity // open data // procurement // pilots

Key messages:

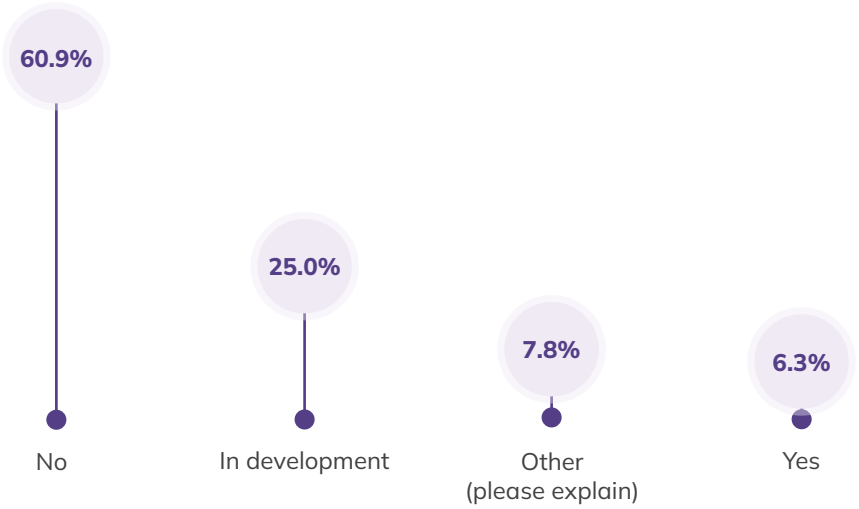
- Ethical, inclusive and purpose-driven approaches, combined with open data and interoperability, build trust and enable effective public sector AI.
- Updated procurement, strong partnerships and targeted pilots help governments innovate responsibly while addressing sector-specific needs.
- Implementing AI in the public sector requires a strategic framework grounded in ethics, inclusivity and clear public purpose. Government agencies need to build the right data foundations and processes to support AI, while updating procurement practices and regulations to manage new challenges; and
- The following guidelines outline best practices for public-sector AI implementation, drawing on insights from UN agencies and multilateral organizations.

4.1
Ethical, inclusive, and purpose-driven AI use

Public sector AI initiatives should be guided by ethical principles and a commitment to social good. It is essential to develop ethical AI guidelines that address issues like privacy, bias, transparency and accountability. The Global Survey on AI in Tourism reveals that only 6.3% of ministries currently have guidelines to ensure the ethical use of AI in tourism, with another 25.0% having guidelines in development. A significant majority, 60.9%, currently have no such guidelines (see figure 4.1). This highlights a crucial area for growth and policy development.



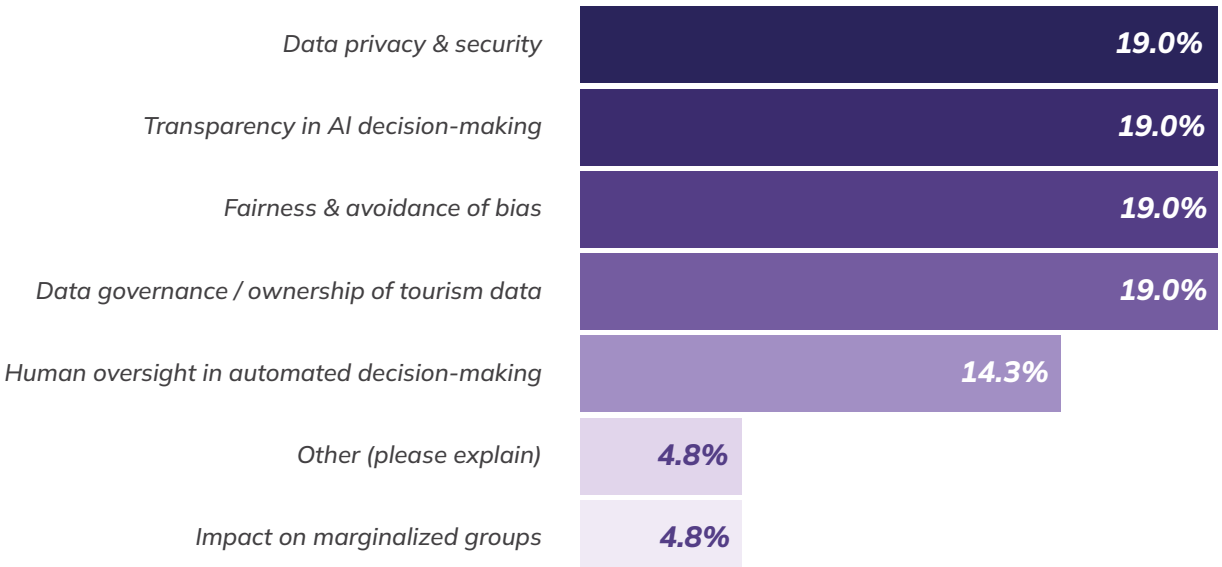
Figure 4.1 Existence of tourism authority guidelines for ethical AI use in tourism



Source: World Tourism Organization (UN Tourism), 2025.

Among those prioritizing ethical concerns in their AI policies, key areas include data privacy and security (19.0%), transparency in AI decision-making (19.0%), fairness and avoidance of bias (19.0%), and data governance/ownership of tourism data (19.0%). Human oversight in automated decision-making is prioritized by 14.3%, and the impact on marginalized groups by 4.8% (see figure 4.2). In practice, this means ensuring AI systems are transparent in how decisions are made and accountable to public oversight, so that citizens can trust automated decisions. Governments must also uphold human-centric values, maintaining a balance between AI automation and the human touch in services, to avoid a purely technocratic approach.28 Importantly, AI deployments should be purpose-driven, targeting clear public benefits such as better services, sustainable development or operational efficiency. For example, national tourism bodies are exploring AI not for its own sake but to build smart tourism destinations that enhance visitor experiences and improve management efficiency. Aligning AI projects with public interest goals, like improving accessibility or sustainability, keeps the focus on solving real problems rather than pursuing technology hype.

Figure 4.2 Prioritized ethical concerns in AI policies



Source: World Tourism Organization (UN Tourism), 2025.

Equally crucial is making AI inclusive so that its benefits are widely shared. AI systems should be designed and used in ways that ensure a level playing field for all stakeholders and protect the rights of minorities and marginalized groups. This involves proactive measures to prevent algorithmic discrimination and to respect cultural diversity in areas like tourism experiences. Many governments and international bodies emphasize non-discrimination and fairness in AI use, stressing that AI must not exacerbate biases or digital divides.[29] An inclusive approach also means improving AI literacy and access: public agencies should engage civil society and local communities so that a broad range of voices shape AI solutions. By collaborating with stakeholders and upholding international human rights standards, such as UNESCO Recommendation on the Ethics of Artificial Intelligence, governments can ensure AI deployments are equitable and aligned with core public values. In summary, ethical, inclusive and purpose-driven use of AI builds public trust and maximizes positive societal impact.

Ethical artificial intelligence in tourism must also encompass accessibility. Designing tools that serve travellers with disabilities not only ensures compliance but expands markets and demonstrates how inclusive design drives business growth. Public-sector leadership is crucial in setting standards and ensuring that accessibility is prioritized in tourism AI initiatives. In addition, emerging AI-powered assistive technologies (from personalized recommendation systems to real-time translation and descriptive audio), offer promising opportunities to make tourism experiences more inclusive.

> ***Ethical, inclusive, and purpose-driven AI in tourism ensures fairness, accessibility, and maximizes positive societal impact.***

4.3
Enabling interoperability and open data

Effective public-sector AI depends on high-quality data that can be easily shared and combined across systems. Governments should prioritize open data initiatives and data interoperability standards. Open data involves making non-sensitive government data available in usable formats, a practice that increases transparency, reduces inefficiencies and enables data-driven innovations in public services.[30] By opening datasets on tourism statistics, mobility data or public service records, agencies empower developers and researchers to create AI applications that improve service delivery and drive entrepreneurial innovation. In fact, the World Bank has noted that an open data initiative can boost efficiency and competitiveness in sectors like tourism, attracting new solutions and businesses.[31] The tourism sector, for example, stands to gain from sharing open access data of visitor data and travel patterns, which AI can analyse to inform policy and improve destination management.

Alongside openness, interoperability of data and systems is key. The Global Survey on AI in Tourism highlights that limited interoperability between public and private systems (57.8%) and a lack of data standardization (57.8%) are among the most significant barriers to accessing and using tourism-related data in countries. This underscores the critical need for common data standards and APIs so that different AI systems and databases can work together seamlessly (see figure 3.6).

As highlighted in global smart tourism frameworks, getting the most out of data requires consistent standards that ensure data from various sources remains compatible and interchangeable. A whole-of-government approach to data governance can break down silos. Inter-ministerial data platforms and standardization efforts enable agencies to share information securely and efficiently.[32] Moreover, adhering to FAIR (findability, accessibility, interoperability, reusability) data principles and using open-source or widely accepted data formats will future-proof data for AI use. Public-sector organizations are encouraged to collaborate via data sharing partnerships, such as data trusts or public-private data exchanges, to bring in external datasets while protecting privacy. Ultimately, by fostering a culture of open data and interoperability, governments create a rich data ecosystem that fuels AI innovation across sectors. This foundation is especially important in data-intensive fields such as tourism, where aggregating data from airlines, hotels, local attractions, and mobile devices can provide powerful AI insights if done in a standardized, privacy-compliant way.[33]

4.4

Guidelines for digital procurement and AI partnerships

Governments will need to update their procurement practices to effectively acquire and deploy AI technologies. Traditional procurement rules may not suffice for AI projects, which require flexibility, expertise and careful risk management. Public procurement can be a strong enabler of AI adoption; the purchasing power of the governments can drive innovation when used strategically. To this end, several governments and international bodies have published AI procurement guidelines to help navigate challenges such as the Office for Artificial Intelligence of the United Kingdom). Some best practices for AI procurement include:

Anchor procurements in an AI strategy: Tie each AI purchase to a clear public benefit goal or policy objective. Defining the public value expected from the AI system helps evaluate solutions and keep the project purpose driven. Proposals should be assessed in part on how they deliver on these public interest goals while upholding non-discrimination and proportionality.

Use diverse, multidisciplinary teams: Involve experts from the domain area, data science, ethics, and procurement when evaluating AI bids. Diverse teams understand the many facets of AI (technical, ethical and operational). Requiring vendors to also have diverse teams and to mitigate bias in their algorithms helps ensure the solution is inclusive.

Ensure data readiness and governance: Assess data availability and quality before procuring an AI system. Procurement documents should insist on robust data governance – addressing data privacy, security and any bias in training data – from the start. Agencies need a plan for sharing data with the vendor, and for handling data issues that arise.

Favor transparency and avoid vendor lock-in: Require explainable AI solutions rather than black box models. Contracts should mandate that algorithms and outputs are interpretable to your team and that data results can be ported if needed. This reduces the risk of being tied to one vendor and improves accountability. Vendors should clearly document how their AI works and allows audits for bias or errors.

Engage the market and encourage competition: Do not restrict procurement to a few big tech providers. Conduct open market consultations and reach out to a variety of suppliers, including startups, small enterprises and firms from diverse backgrounds. This widens the pool of innovative solutions and avoids excluding capable new entrants. Structure outcome-based procurements focussed on problem solving, rather than on predetermined solutions. This can invite creative approaches from bidders.

By following these guidelines, public institutions can tackle challenges unique to AI procurement, such as evaluating AI ethics and performance upfront and writing contracts that allow ongoing oversight. Leading practice also suggests integrating existing frameworks, such as government data ethics frameworks or tech codes of practice, into AI contracts to bind vendors to high standards. Overall, a transparent and outcome-focused procurement process will help governments buy AI systems that are effective, fair and aligned with public values.

Beyond formal procurement, building AI partnerships is vital. Public-private partnerships (PPPs) can leverage the strengths of government, industry and academia to deploy AI for social good. Governments bring public oversight, funding and access to data, whereas private companies contribute technical expertise and innovative capacity. Such collaboration accelerates the development of AI solutions to public challenges: for example, using tourism mobility data held by government with an AI platform developed by a to optimize city transport.

The key is to structure these partnerships with clear ethical guardrails and shared goals. Governments should set the ethical and accountability standards, such as requiring partners to follow data protection laws and unbiased AI design, and industry partners should implement those guidelines in practice with mechanisms like algorithm audits. International organizations stress that multi-stakeholder engagement, including civil society and local communities in addition to companies and agencies, leads to more inclusive and culturally aware AI solutions.[34] By establishing formal collaboration channels, such as innovation hubs or memorandum of understanding with tech firms and universities, the public sector can tap into cutting-edge AI knowledge while ensuring that projects serve the public interest. In sum, agile partnerships coupled with strong public governance can help governments innovate with AI responsibly and sustainably. `





Practical Checklist: Procuring an AI Chatbot for Tourism Services

Why this matters: Chatbots are often among the first AI tools procured by tourism administrations. This checklist provides a step-by-step guide to ensure that procurement is responsible, ethical and aligned with public value.

1. Define the public value and scope

- ☐ Clearly state the problem the chatbot will solve (e.g., frequently asked questions –FAQs, multilingual visitor support, etc.).
- ☐ Ensure alignment with national or tourism AI and digital transformation strategies.

2. Engage stakeholders early

- ☐ Consult staff, visitors, accessibility groups, and civil society.
- ☐ Coordinate with legal and data protection authorities.

3. Data readiness and governance

- ☐ Verify the availability and quality of training data.
- ☐ Put in place privacy safeguards (e.g., anonymization, data ownership agreements and consent).

4. Procurement process

- ☐ Use outcome-based requirements (e.g., improve response accuracy by X%).
- ☐ Keep tenders open to SMEs and startups to broaden innovation.
- ☐ Evaluate the approaches of vendors to bias, explainability, and accessibility.

5. Technical and ethical safeguards

- ☐ Support multilingualism and accessibility (e.g., text-to-speech).
- ☐ Ensure human-in-the-loop capability for complex cases.
- ☐ Require auditability and transparent logs.

6. Avoiding lock-in and ensuring interoperability

- ☐ Include clauses allowing portability of data and models.
- ☐ Check interoperability with existing platforms (websites, mobile apps, etc.).

7. Pilot, monitor and iterate

- ☐ Begin with a limited pilot and clear KPIs (e.g., user satisfaction, cost savings, etc.).
- ☐ Gather user feedback and adapt iteratively.
- ☐ Plan an exit strategy if performance targets are not met.

4.5
Developing testbeds, sandboxes and regulatory flexibility

AI is a fast-evolving field, and governments may need to experiment with new technologies in a controlled way. Establishing testbeds and regulatory sandboxes can provide the flexibility to pilot AI initiatives while managing risks. A regulatory sandbox is essentially a safe testing space where regulators allow firms to test innovative solutions under supervision and with relaxed rules. The goal is to facilitate innovation in a responsible manner: companies can trial new AI-driven services or business models with real users during a limited period, and regulators can learn more about the technology, observe outcomes and adjust policies accordingly. By temporarily waiving or adapting certain regulations, sandboxes let public agencies and companies discover the benefits and risks of an AI innovation at an early stage, before full-scale deployment. This approach has been successful in sectors like fintech and is now expanding to AI governance more broadly. Such trials help identify what new rules or standards might be needed if the solution were rolled out widely.

Policymakers worldwide recognize the value of sandboxes in keeping regulations adaptive in the digital age. The OECD notes that many countries are exploring sandboxes to enable technology-neutral and agile regulatory environments that foster innovation while still safeguarding the public. In practice, a government agency running an AI sandbox would define a limited scope, e.g., a timeframe, a specific use-case and target users, and closely monitor the performance of the AI system, safety and fairness during the trial. Insights from the sandbox can then inform more permanent regulations or standards. [35]

Along with sandboxes, governments can set up testbeds or pilot environments, for instance, a smart city district used to test integrated AI solutions like intelligent traffic systems or AI-assisted tourism info centres. These testbeds offer realistic settings to evaluate the interoperability of the AI technologies and social impact before scaling up.

Beyond regulatory experimentation, governments must also ensure that AI adoption in tourism is anchored in robust legal and institutional safeguards. This includes data protection and privacy frameworks that guarantee responsible use of personal information collected through AI-driven applications; consumer rights protections to ensure tourists are not misled by algorithmic decisions, automated recommendations, or synthetic content; and clear rules on liability in cases where AI systems fail or cause harm. These elements are not new, as such frameworks already exist in most jurisdictions. The challenge lies in adapting these frameworks to new AI applications – which may or may not call for regulatory reforms – and ensuring that any changes are undertaken cautiously, based on evidence and practical experience, so that innovation is not unnecessarily obstructed.

For instance, the Global Survey on AI in Tourismresults show that nearly half of Member States already identify data privacy and security as key ethical concerns in their AI policies. Embedding AI initiatives within existing data, consumer protection and liability regimes helps build trust among travellers and provides clarity for businesses.

Sandboxes and testbeds can therefore serve a dual purpose: not only testing technologies and operational impacts, but also examining how established regulatory frameworks on data, consumer rights, and liability can be applied or adapted in the tourism context. By linking experimentation with these broader regulatory pillars, policymakers can strike a balance between fostering innovation and safeguarding the public interest.

Crucially, regulatory flexibility tools such as sandboxes must still uphold baseline protections and should not exempt fundamental safety or ethics norms, They must be transparent to the public. When done right, they create a win-win: innovators get clarity on how far they can experiment, and regulators learn how to update policy, regulations and frameworks in step with technological change. By incorporating sandboxes and pilot programmes, the public sector can remain adaptive and encourage responsible AI innovation rather than stifling it with outdated rules.

4.6

Creating sector-specific AI toolkits and pilots

The adoption of AI in government is not a one-size-fits-all solution, each sector (health, transport, tourism, etc.) has unique needs, data and ethical considerations. Thus, developing sector-specific AI toolkits and launching pilot projects are recommended to guide implementation on the ground. A sector-specific AI toolkit is essentially a set of tailored guidelines, best practices, case studies and even technical resources focused on applying AI in a particular domain.

Tourism officials are advised to ensure that AI systems respect cultural norms and local values, and to include tourism in national AI discussions so the voice of the sector is heard in broader policy debates. Such toolkit guidance might cover use-cases such as smart tourism destination management, AI-driven chatbots for visitor services, or predictive analytics for tourism flows, all with an emphasis on ethical use and accessibility. Indeed, the recent publication of UN Tourism on AI adoption in tourism highlights cross-cutting principles, such as data privacy and safeguarding the human touch, alongside practical applications across hospitality, transport, attractions and more.[36] Likewise, other multilateral bodies have begun producing domain-focused AI guidelines. For instance, UNESCO and the G7/OECD Toolkit for Artificial Intelligence in the Public Sector provides insights that governments can adapt to specific fields and includes examples of public-sector AI use cases with their benefits and challenges.[37] Sector-specific principles or playbooks ensure that AI adoption aligns with the terminology of each field, regulatory environment and public expectations. They serve as a resource for public administrators to confidently introduce AI tools while following proven best practices and respecting sectoral regulations.

Along with toolkits, running pilot projects in different sectors is a practical step to build experience. Governments are often advised to start small and scale gradually when it comes to AI. Pilots or proof-of-concept projects allow agencies to test AI solutions on a limited basis, evaluate their performance and impacts, and learn lessons before investing in full rollouts. For example, a transportation department might pilot an AI traffic management system in one city; or a tourism board could pilot an AI-driven visitor recommendation system at a few destinations. These pilots yield valuable insights without the high risk or cost of a nationwide implementation. They help identify any technical or ethical issues early on – perhaps the AI system had trouble with certain languages or exhibited bias in a subset of cases– so that adjustments can be made. By evaluating pilot outcomes, governments can develop sector-specific success metrics and business cases for AI, which in turn feed into the sector toolkits. Pilots also build momentum and skills among public servants. A core team from a pilot can later champion AI adoption across their entire department.

In conclusion, crafting dedicated AI implementation guidelines for each sector and investing in targeted pilot projects are smart tactics for public sector innovation. They acknowledge that deploying AI in a cultural tourism context may differ from doing so in a tax agency or a hospital. With the support of international organizations, which often facilitate sharing of best practices and even open-source AI tools for the public sector, governments can create these toolkits and pilot programmes as living resources. This sector-focused approach ensures that AI is adopted in a thoughtful, evidence-based manner, ultimately leading to scaled-up solutions that improve public services while adhering to the specific values and requirements of each domain. By following the above guidelines – from ethics to open data and from procurement to sandboxes and specialized toolkits– public sector leaders can responsibly harness the potential of the AI to enhance governance and quality of life for citizens.

05

Regional profiles and case studies

About this chapter:

This chapter presents regional snapshots and in-depth case studies illustrating how AI is being adopted in tourism across Africa, Asia and the Pacific, Europe, the Americas and the Middle East. Each regional profile identifies key enablers, priorities and challenges, while the case studies highlight practical AI applications, ranging from predictive analytics to smart visitor services, led by public institutions or partnerships. The selected cases underscore the role of strategic vision, cross-sector collaboration and policy frameworks in shaping successful AI deployment. The chapter also introduces a shared analytical framework to compare lessons across contexts, offering insights on outcomes, enabling conditions and governance. Together, these examples demonstrate that while paths vary, responsible and inclusive AI adoption in tourism is already underway, shaped by regional capacities and values.

Key words:

Regional innovation // policy frameworks // public-private partnerships // digital infrastructure // data governance

Key messages:

- Regional contexts shape how AI is adopted in tourism, with varied focuses including smart destinations, sustainability, cultural preservation and inclusive innovation; and
- Cross-sector collaboration, public leadership and strong data infrastructure are critical to scaling effective, locally grounded AI solutions in tourism.

This chapter provides an in-depth exploration of how AI is being adopted across regions, highlighting both common trends and context-specific approaches. By combining regional profiles with detailed case studies, it seeks to illustrate how diverse regulatory, institutional and market environments shape the development and implementation of AI in tourism.

Each regional profile presents an overview of enabling capacities, policy priorities and key stakeholders, followed by a case study that showcases practical applications of AI in the tourism sector. These case studies were selected based on their strategic relevance, potential for scalability and the direct participation of public sector institutions, as identified through the Global Survey on AI in Tourism responses collected for this report.

Together, the regional profiles and case studies provide actionable insights and lessons learned that can inform policymakers, industry leaders and development partners seeking to strengthen the responsible use of AI in tourism globally.

5.1

Case study selection and analytical framework[38]

5.1.1 Methodology for selecting representative cases

We identified case studies to cover each major global region, ensuring geographical balance and reflecting diverse contexts. An explicit selection criterion was that the country must have responded to the Global Survey on AI in Tourism , ensuring it features only engaged Member States. Cases involving public sector participation were also prioritized, e.g., national or city-led initiatives or public-private partnerships, demonstrating government involvement in AI-driven tourism. Additionally, scalability of the innovation and variety of innovation types, from AI chatbots to predictive analytics and augmented reality (AR) and virtual reality (VR) applications, were considered to illustrate a wide range of use cases.

5.1.2 Common analytical dimensions

Each case is examined along key dimensions to allow comparative insights:



Strategic vision and objectives:

What overarching goals or challenges is the initiative addressing? This includes the tourism strategy context of the country and why AI was adopted such as improving visitor experience, boosting sustainability and increasing efficiency.



Enabling capacity and institutional anchors:

The resources, partnerships, and institutions that support the project, such as government agencies, policies, or strategies such as digital agendas and AI strategies, and collaborations with industry or academia that provide the necessary skills and infrastructure.



Technologies and use cases:

The specific AI technologies employed, e.g., machine learning for data analytics, chatbots with natural language processing – NLP, computer vision, etc.) and their concrete applications in tourism, such as visitor trend prediction, personalized recommendations, virtual assistants or crowd management tools.



Governance, risk and sustainability measures:

How the initiative addresses data governance (privacy, security and data-sharing frameworks), ethical or regulatory compliance, especially in regions with strict AI or data laws, risk management ensuring reliability and trust in AI and long-term sustainability, including environmental and social impacts.



Outcomes and lessons learned:

The results achieved so far, such as improvements in efficiency, visitor satisfaction, inclusivity or revenue, and the insights or best practices gained, e.g., the importance of training, stakeholder buy-in and incremental implementation. This dimension highlights how these cases can inform other destinations.

Using this framework, the following regional profiles and country case studies illustrate the state of AI adoption in tourism across Africa, Asia and the Pacific, Europe, the Americas and the Middle East.

5.2

Regional chapters and case studies

5.2.1 Africa: Regional capacity landscape and priorities

The tourism sector of Africa is at an early but accelerating stage of AI adoption, with strong interest from leadership. Recent surveys show that African tourism businesses are enthusiastically embracing AI, with 85% of those surveyed by the African Travel and Tourism Association (ATTA) either already using generative AI or planning to adopt it soon. This movement is often driven from the top (senior executive leadership and government), reflecting a vision that AI can leapfrog traditional development hurdles. Key priorities for the region include building digital infrastructure and skills: while the continent is rapidly advancing, it still faces a computing deficit, underscoring the need for investment in data centres and human capital.[39] Indeed, 81.2% of African tourism organizations cite a lack of technical expertise as a primary challenge to AI adoption, alongside resource constraints. Capacity-building initiatives, from training programmes to partnerships, are therefore crucial to enable African destinations to utilize AI effectively.[40]

At the same time, African tourism stakeholders are focusing on practical, high-impact use cases of AI that address immediate needs such as marketing, customer service and resource management. According to industry research, 86.7% of African tourism businesses using AI have applied it to marketing and content creation (e.g. using generative AI to produce multilingual promotional materials).[41] This reflects the importance of low-cost, scalable solutions: AI-driven content generation and chatbots help small operators engage global travellers in multiple languages and personalize outreach, levelling the playing field. Another priority area is leveraging AI for sustainability and wildlife conservation. Governments and non-governmental organizations (NGOs) are exploring AI-driven tools, such as autonomous drones and AI-powered image recognition, to monitor species and enhance anti-poaching efforts in parks and nature reserves.[42] In sum, the regional landscape of Africa is characterized by enthusiastic adoption amid constrained capacity, with an emphasis on partnerships, training and the use of AI to enhance marketing and conservation.





Case study 1:
Kenya – AI-enhanced wildlife tourism and predictive analytics

Strategic vision and objectives

The tourism strategy of Kenya recognizes digital innovation as key to sustaining growth and conservation in tandem. The country, famed for wildlife tourism, is pursuing AI to boost marketing intelligence and protect its natural assets. In late 2024, the Tourism authority of Information, Communication, and the Digital Economy and the Tourism authority of Tourism and Wildlife announced a partnership with Google to harness big data and AI insights for tourism development.[43] The strategic objective is twofold: increase tourist engagement through data-driven marketing by understanding traveller preferences and trends, and enhance sustainability by managing wildlife and visitor interactions more intelligently. The vision of Kenya is to become a leader in AI-powered responsible tourism, where growth in visitor numbers goes together with safeguarding the very ecosystems those visitors come to experience.

Enabling capacity and institutional anchors

Kenya benefits from a growing digital infrastructure and government support for innovation. The partnership with Google and other tech companies has provided tangible capacity boosts, including support for AI education and investments in digital infrastructure . Institutional anchors include the Tourism authority of Tourism and Wildlife working closely with the Tourism authority of ICT and Digital Economy, signalling high-level coordination. Moreover, Kenya has a vibrant tech sector known as the Silicon Savannah which the government can draw on for expertise. The Kenya Wildlife Service and conservation NGOs also act as partners, piloting AI projects in national parks. An example is the use of AI-enabled surveillance using thermal cameras and AI detection systems to combat poaching, which has contributed to a reduction in rhino poaching in certain areas . These efforts are backed by policies such as the Kenya Digital Economy Blueprint and a new the Kenya National AI Strategy (2025-2030), creating an enabling environment through strategic intent and regulatory readiness. [46]

Continue →

Technologies and use cases

In the tourism sector of Kenya, AI-powered data analytics and predictive modelling are prominent. The Google partnership is leveraging AI-driven analysis of search data to uncover patterns in traveller interests, helping Kenya tailor its marketing campaigns and product offerings to match demand. Another use case is wildlife migration prediction: Pilot programmes use AI to analyse past animal movement and environmental data to forecast where wildlife will be, helping safari operators enhance tourist experiences with reliable sightings.[47] Additionally, some Kenyan parks are experimenting with AI-driven visitor management systems. For instance, the use of AI-enabled camera systems helps monitor visitor activity to prevent overcrowding and ensure safety in popular reserves.

Governance, risk and sustainability measures

Kenya is approaching tourism AI with an eye on governance and ethics, often guided by broader government AI principles. Data used in official projects is subject to privacy safeguards under the Data Protection Act, 2019.[48] The government insists on retaining sovereignty over tourism data, for example, ensuring that insights generated benefit local decision-making and are not solely proprietary to tech partners. In wildlife applications, ethical guidelines are followed to ensure AI does not disturb animals.[49] Risk management includes addressing the reliability of AI predictions, where Kenyan officials engage local experts to validate analytical outputs. On sustainability, Kenya explicitly ties AI initiatives to conservation outcomes. The government is keen to ensure that AI augments human jobs rather than replaces them, with training programmes upskilling rangers and tour guides to work with new tech.[50]

Outcomes and lessons learned

Although still early, the AI-tourism initiatives of Kenya have begun yielding positive results. The tourism tourism authority reports more effective digital marketing campaigns since employing AI insights, a factor that contributed to Kenya earning a record KES 452 billion in 2024.[51] On the conservation side, AI-powered anti-poaching systems in select parks, like a pilot in Aberdare National Park to protect rhinos, have led to quicker responses by rangers and contributed to a significant reduction in poaching in those areas.[52] A key lesson is the power of cross-sector partnership: the collaboration of Kenya with a tech giant brought expertise and infrastructure that would have been hard to develop alone, illustrating a model that other countries could follow. However, Kenya also learned the importance of local ownership: keeping control of data and building local capabilities to avoid over-reliance on external actors. By starting with marketing analytics and conservation, Kenya generated early wins that build support for AI among stakeholders.

5.3.2 Asia and the Pacific: Smart destinations and urban AI innovation

The Asia and the Pacific region is a leader in smart destination initiatives, integrating technology into tourism infrastructure and city planning. Many countries in the region view tech-enabled tourism as a path to competitive advantage and sustainable growth. For example, countries like Singapore, Japan, South Korea and China have invested heavily in smart tourism systems, from AI translators to advanced visitor management. Emerging economies like Indonesia, Thailand and Vietnam are also leveraging AI to modernize their tourism services. A unifying theme is the focus on personalization at scale and seamless visitor experiences: tourists in Asia and the Pacific increasingly expect digital concierge services and tailored recommendations, and destinations are racing to meet those expectations with AI. The region also benefits from a strong tech sector and consumer openness to new apps and platforms, which accelerates innovation diffusion in tourism.

Policy frameworks like Society 5.0 or Tourism 5.0 from the agendas of Japan and Indonesia, respectively, explicitly include AI and digital transformation in tourism. These strategies emphasize smart cities and IoT and AI integration to improve urban tourism, e.g., smart signage, crowd management in popular districts and AI-driven transit info for tourists. A notable priority across Asia and the Pacific is multilingual support and sentiment analysis. Given the diverse range of international visitors, tourism bodies use AI language tools for translation and sentiment mining from review to understand and cater to tourist feedback. The region is also pioneering AI in mega-events and transport. For instance, Japan employed AI robots and translation chatbots at the Tokyo 2020 Summer Olympics which were held in 2021 due to the COVID-19 pandemic to assist visitors. Airports in China use facial recognition for check-in and customs, streamlining travel.

Case study 2:
Indonesia – AI for tourist sentiment analysis and service personalization

Strategic vision and objectives

Indonesia, as the largest nation in Southeast Asia, has a vision to become a smart tourism leader by harnessing digital technology to boost both tourist numbers and quality of experience. Guided by its Tourism 5.0 initiative, the Tourism authority of Tourism and Creative Economy (Kemenparekraf) aims to use AI to personalize travel services and make tourism growth inclusive.[55] A core objective is improving the competitiveness of Indonesia as a destination. A goal underscored when the tourism ranking Indonesia jumped ten places globally (from 32nd to 22nd) in the 2024 Travel and Tourism Development Index.[56] Officials credit the focus on data-driven personalization and digital transformation for this leap, indicating how important tech-powered insights have become to strategic planning. In practical terms, the vision of Indonesia is to deploy AI to analyse tourist sentiment and preferences at scale using online reviews, social media and surveys. Then, feed those insights into product development and marketing, thereby aligning offerings with what travellers want. This ties into a broader government push for digital inclusion, ensuring small and medium tourism enterprises (MSMEs) benefit from AI, through tools for content creation, translation and market analysis.[57]

Enabling capacity and institutional anchors

The Indonesian government has laid the institutional groundwork to integrate AI in tourism. In 2024, Indonesia launched an Artificial Intelligence Innovation Centre in collaboration with tech institutes, signalling a commitment to build local AI expertise for sectors including tourism.[58] Indonesia also benefits from a young, tech-savvy population and a booming start-up scene, including travel-tech start-ups, which provide a talent pool and innovative solutions. Key anchors include government agencies like Kemenparekraf, which has created dedicated units focusing on digital transformation, and state-owned enterprises in telecom and IT that support necessary infrastructure (e.g. expanding broadband to tourist areas). International collaboration also plays a role: Indonesia works with partners like UN Tourism and ASEAN for knowledge exchange on smart tourism. On the data side, Indonesia has begun establishing a centralized tourism data hub to collect metrics from various sources.[59] Moreover, regulatory frameworks such as the National AI Strategy 2020-2045 and data protection laws help guide ethical AI use.[60]

Technologies and use cases

The tourism sector of Indonesia has been implementing AI across multiple touchpoints of the traveller journey. A standout application is sentiment analysis and trend forecasting using AI. The tourism authority leverages AI to analyse vast amounts of visitor feedback from sources such as social media and TripAdvisor reviews. By doing so, they extract sentiment scores and identify trending topics or concerns.[61] This insight has enabled officials to spot emerging travel preferences and respond proactively. Another tech in play is natural language processing (NLP) for multilingual chatbots and virtual guides, which have been rolled out on tourism websites to handle inquiries in several languages.[62] Perhaps most ambitiously, Indonesia is integrating AI-driven personalization into its official trip-planning platforms. The plan, which is phased through 2024–2025, is for the Indonesia.travel website to use machine learning to recommend custom itineraries based on a user profile and real-time context. For example, if a tourist indicates interest in history and is in Yogyakarta, the app might suggest a morning at Borobudur with an AR experience, since climbing the temple is restricted, followed by nearby temples, and even adjust recommendations if the AI sees that bad weather approaching. Indeed, optimizing visitor routes and experiences in real time is a key use case: Indonesia is exploring AI systems that can suggest less crowded alternatives when popular sites are over capacity, distributing visitor flow more evenly.[63]

Governance, risk and sustainability measures

As Indonesia infuses AI into tourism, it remains attentive to governance and inclusivity. Data privacy is a paramount concern: tourist data, from travel histories to social media comments, is handled under the data protection regulations of Indonesia. In accordance with these regulations, personal data used for AI-driven analysis is anonymized or aggregated tourism authority. Kemenparekraf officials have publicly emphasized that AI will not replace humans but rather assist them, framing AI as a tool for empowering staff and creating jobs. Sustainability is tightly woven into AI initiatives. A concrete example is Borobudur: the sacred temple has a cap on daily visitors to prevent degradation. To support this, Indonesia uses AI to create virtual tours and AR experiences of Borobudur. Tourists who are not physically able to get access can still experience it digitally, an approach that both satisfies tourist interest and protects the site.[64] Additionally, AI is helping promote green tourism: digital itinerary planners can be optimized for lower carbon options, suggesting eco-friendly transport.

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Outcomes and lessons learned

The use of AI in Indonesian tourism is already yielding concrete benefits. On the marketing front, conversion rates from digital campaigns have improved, and tourist satisfaction levels are reportedly up. A significant outcome is better management of popular sites; using AI forecasts, authorities at popular destinations can prepare and allocate resources on days projected to be crowded. One lesson learned is the importance of data quality and integration: Indonesia faced challenges initially with fragmented data because different provinces had their own systems but is working to standardize data collection to truly unleash the AI potential. Another lesson is building public trust in AI. By. B openly communicating successes such as how AI helped improve the world tourism ranking of Indonesia and managing expectations, acknowledging early inaccuracies in chatbots, the government has built broad support. In conclusion, the case of Indonesia shows that AI can significantly enhance smart destination efforts, but it requires vision at the top, investment in local capacity and a focus on using tech to benefit both visitors and the local community.

5.3.3 Europe: Regulation-led adoption and data ecosystems

The approach of Europe to AI in tourism is distinct for its regulation-driven ethos and robust data ecosystems. The region is home to some of the most advanced digital markets as well as some of the strictest data protection and AI governance frameworks. As a result, European tourism innovation often balances cutting-edge technology with compliance and ethics. The forthcoming EU Artificial Intelligence Act (AI Act), which is the first comprehensive AI law in the world, and existing laws like the General Data Protection Regulation (GDPR) heavily influence how AI is deployed in European tourism. Emphasis is placed on transparency, privacy and safety of AI systems. This means that European travel companies and destinations tend to implement AI with strong governance, e.g., ensuring algorithms are audited for bias, using privacy-by-design in customer-facing AI such as chatbots not storing personal data without consent, and favouring open data collaborations under clear rules.

Despite its strict regulatory frameworks, Europe has developed robust tourism data ecosystems that both comply with and benefit from these standards, enabling the growth of AI applications. . Many countries have national tourism observatories and data-sharing platforms. For instance, the European Tourism Data Space initiative encourages destinations to share anonymized tourism data to enable continent-wide insights and smarter services. Such data interoperability is a backbone for AI: cities and regions can contribute and tap into large datasets on tourist movements, spending and preferences, which AI models can then analyse for patterns. European destinations are leveraging AI for solutions like demand forecasting (predicting tourist influx to better manage resources), dynamic pricing for attractions, and personalized marketing via centralized Customer Relationship Management (CRM) systems that adhere to EU data standards.

Another characteristic in Europe is the focus on public-private partnerships to innovate with AI while maintaining public oversight. Many tourism boards in Europe have teamed up with tech firms or startups to implement AI pilots (for example, VisitScotland using an AI travel planner chatbot, or Amsterdam employing AI for crowd control in the city centre), but always with an eye on regulations and public acceptance. Furthermore, Europe's strong focus on sustainability and cultural preservation means AI in tourism is often geared towards those ends, e.g. using AI to monitor environmental impacts, or digital guides that educate tourists on heritage sites respectfully.

Case study 3:
Croatia – AI chatbots and destination management systems

Strategic vision and objectives

Croatia, a popular European tourist destination, has identified digital innovation as key to managing its booming tourism sector. The strategic vision, as outlined in national and EU-supported plans, is to use technology and data to govern tourism as a responsible, resilient, and efficient system.[65] With millions of visitors each year along its Adriatic coast and historic cities, the objectives of Croatia include improving tourist services through automation and personalization, and optimizing destination management through real-time data. One explicit objective has been enhancing tourist assistance via digital tools, which can include AI-powered chatbots to provide instant information and handle routine queries. Another objective is leveraging big data for evidence-based tourism policy: Croatia aims to use its national eVisitor system, which is a comprehensive tourist registration database, in conjunction with advanced analytics to monitor tourism flows and plan infrastructure, marketing and conservation efforts.[66] In essence, the strategy of Croatia strategy marries innovation with regulation: it wants to harness AI in a controlled, secure way that aligns with EU norms,[67] thus demonstrating how a mid-sized country can be a leader in tourism management by the smart use of technology.

Enabling capacity and institutional anchors

The notable strength of Croatia is its centralized tourism data system, eVisitor, which serves as an institutional anchor for all tourism stakeholders. Launched in 2016, eVisitor is an online platform where all tourists are registered upon arrival, providing real-time insight into tourist numbers, origin markets, length of stay, and occupancy across the country.[68] This system has created a huge, live dataset that is foundational for trend analysis and forecasting. The Croatian National Tourism Board and Tourism authority of Tourism anchor these efforts, investing in IT upgrades and data analytics to fully exploit eVisitor data. On the AI front, Croatia leverages EU funding and initiatives. The growing local tech startup scene of the country also contributes to this ecosystem, with some firms developing AI solutions for the travel sector. Additionally, all these tech endeavours operate under the implementation of GDPR[69] in Croatia and its planned alignment with the European Union Artificial Intelligence Act (AI Act),[70] which the government communicates to ensure public trust by making it clear that data is handled responsibly.

Technologies and use cases

The Croatian tourism sector is actively exploring the introduction of AI and integrating digital tools into its destination management practices.[71] One prominent use case, supported by both public and private initiatives, involves the use of AI chatbots to assist customers with travel planning. These assistants can handle inquiries in multiple languages, providing instant answers about accommodations and local regulations. The government's focus on using big data for decision-making is also a key use case: with millions of data points, data analytics on the eVisitor data can be used to detect patterns, such as seasonal shifts and emerging source markets. This enables more agile marketing: if the data reveals a spike in interest from a new country, the tourism board can quickly tailor a campaign. Similarly, predictive models can help in forecasting tourist arrivals to aid in resource allocation for destinations. In line with the AI Act, this data-driven approach is complemented by a strong emphasis on data governance.

Governance, risk and sustainability measures

Croatia places a strong emphasis on data governance and ethical AI use. All systems dealing with tourist data must comply with GDPR, which means data is primarily used in aggregate for analysis without exposing personal identities. The country is also mindful of cybersecurity, and access to data from critical systems like eVisitor is permission-based. To address the goals of the AI Act, the strategy of Croatia highlights the importance of human oversight; officials view AI as a tool to aid decision-making, not a replacement for human judgment.[72] For sustainability, Croatia aligns its AI efforts with the goal of mitigating carrying capacity and regional imbalances. By using analytics to understand tourism distribution, the country can promote visits to lesser-known areas or off-peak times.

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Outcomes and lessons learned

The measured but proactive approach to AI in tourism of Croatia has yielded several benefits. The eVisitor system, which provides real-time data, has improved efficiency in tourism management by making information that used to take weeks to compile available instantly.[73] The rich data of this system was particularly valuable during the COVID-19 recovery period, as the tourism board could quickly identify trends, such as which markets were returning or if tourists were favouring certain types of accommodation, and adjust strategies.[74] Customer service metrics have reportedly improved due to the introduction of AI-powered digital assistants. Academic research has noted that these tools can significantly reduce response times and handle routine inquiries, thus enhancing the tourist experience.[75] Operationally, academic studies indicate that hotels that adopt automation see an increase in staff effectiveness and efficiency, as employees are freed from repetitive questions to focus on higher-value guest interactions.[76]

A crucial lesson from the case of Croatia is the importance of having a central data infrastructure. The existence of eVisitor as a unified, nationwide system was a game-changer because it provided a goldmine of data that could be used as a foundation for advanced analytics. Another key lesson is the need for stakeholder buy-in, especially in a highly seasonal industry. As with many public projects, the development of an innovation ecosystem requires "concerted action from multiple stakeholders".[77] Croatia also learned to navigate regulatory constraints creatively: rather than seeing GDPR as a hindrance, it was used to build tourist trust by marketing the message that data is handled responsibly to improve the visitor experience during the holiday. This trust is partly why tourists willingly use digital services, providing more data that in turn improves the performance of AI, a virtuous cycle. Lastly, the case underlines that mid-sized destinations can innovate with AI without massive budgets by focussing on practical applications with a clear return on investment. The success is evident: Croatia is now often cited in Europe for smart tourism management, having been recognized for its sustainable policies and resilience in the face of challenges.[78]

5.3.3 The Americas: Tourism and public value – innovation and inclusion

Across the Americas, there is a diverse landscape of AI adoption in tourism, reflecting the economic range of the region. A unifying theme emerging in the Americas is positioning tourism as a sector that generates public value, leveraging AI innovations not just for profit but to drive inclusive growth and community well-being. This perspective is especially strong in Latin America and the Caribbean, where governments and industry stakeholders emphasize that tourism should benefit local communities, preserve cultural heritage, and distribute economic gains widely. As such, AI-driven tourism initiatives in the Americas often come with an inclusive innovation angle: for example, using AI to promote lesser-known destinations, bringing visitors to rural or less-developed areas, or providing AI tools to small tourism businesses to help them compete.

In North America, large travel corporations and city tourism boards are at the forefront of AI use, from AI-powered travel planning apps to sophisticated hotel revenue management systems. The ethos is very market-driven, but even there, there are efforts to open data, e.g., open tourism data portals in cities, and ensure accessibility such as AI-based translation services.

In Latin America, tourism ministries and startups are focusing on AI for destination intelligence to better understand tourism trends as data-driven tourism observatories, and chatbots for traveller information. Notably, regional organizations like the Caribbean Hotel and Tourism Association (CHTA) are actively promoting digital transformation; the CHTA has released an AI guidebook to help local hotels adopt AI in a responsible and inclusive way.[79]

The Americas region also grapples with bridging the digital divide. Governments and organizations are launching initiatives to improve connectivity and digital skills in tourism-dependent communities. This is seen in countries like Colombia, where national tourism innovation labs sponsor hackathons and pilots for AI solutions, such as chatbots that answer traveller safety questions.[80] This public-good orientation means data sharing is encouraged, some countries openly publish tourism statistics and even engage communities in data collection.

Case study 4:
Brazil – Inovatur: Catalyzing AI-driven tourism innovation

Strategic vision and objectives

Brazil, with its vast and varied tourism offerings, has begun to integrate AI as part of a strategy to modernize tourism management and foster innovation that benefits both urban and community tourism. This strategic vision is exemplified in Rio de Janeiro, where the Municipal Tourism Secretariat (RIOTUR) created the Inovatur programme to position tourism data and intelligence as a public resource. The Inovatur goal has been to incubate innovative solutions that help local tourism businesses, many of which are MSMEs, thrive through data-driven insights. The programme also seeks to improve destination competitiveness and visitor satisfaction by enabling AI tools that capture tourist feedback in real time and support more proactive decision-making.

Enabling capacity and institutional anchors

Inovatur is an incubator and competition for tourism startups, co-developed by the city of Rio de Janeiro and a national industry federation. It provides mentorship, infrastructure, and a testbed for new ideas, cultivating a culture of innovation within the tourism sector. The initiative aligns with broader digital transformation strategy of Brazil, supported by improved infrastructure in cities like Rio de Janeiro and São Paulo and by institutions such as the Serviço Brasileiro de Apoio às Micro e Pequenas Empresas (Sebrae), which trains tourism MSMEs in digital skills. Through Inovatur, several startups have been nurtured, including Konzup Hub, which went on to become a flagship success story.

Technologies and use cases

The startups incubated by Inovatur showcase how AI and data analytics can transform tourism. One notable example is Konzup Hub, an AI-driven tourism intelligence platform piloted in Rio de Janeiro. The technology aggregates large volumes of tourism-related data (social media and search trends) and applies machine learning to provide actionable insights. It functions as an AI-powered Customer Relationship Management (CRM) and marketing assistant for tourism businesses, offering dashboards on trends and consumer preferences. For example, it might highlight that adventure tourism in the favelas of Rio de Janeiro is trending, helping operators adjust offerings. Beyond Konzup, Inovatur has also supported simpler AI applications such as city chatbots for tourist information and predictive analytics to anticipate hotel occupancy during events such as the Rio de Janeiro Carnival.

Governance, risk and sustainability measures

By treating tourism data as a public asset, Inovatur emphasizes data governance and responsible use. Participating startups must comply with the Lei Geral de Proteção de Dados (LGPD), the data protection law of Brazil, and follow ethical guidelines, such as avoiding bias and respecting privacy. The programme also addresses risks like the digital divide by providing training to MSMEs so that AI tools are accessible for end-users with disability or specific access requirements and user-friendly. In terms of sustainability, Inovatur evaluates projects on their potential to support community development, disperse visitors more evenly, and reduce pressure on iconic sites.

Outcomes and lessons learned

Inovatur has demonstrated that public-sector incubators can catalyze innovation in tourism. By providing a platform for startups, it has generated solutions that directly benefit MSMEs and enhance destination marketing. The trajectory of Konzup is one example of this impact: supported by Inovatur, the platform enabled small agencies to use big data insights, previously out of reach, and quickly adjust to tourist demand. According to reports, businesses using Konzup reported stronger engagement and sales, achieving in minutes what once required days of research. The case shows that empowering small players lifts the digital maturity of the entire sector. More broadly, Rio de Janeiro now benefits from richer, real-time tourism data, improving its marketing strategies and competitiveness.

5.3.4 Middle East: Government-driven transformation

5.3.4 Government-driven and mega-infrastructure

The Middle East tourism sector is undergoing a massive, state-led transformation. This is characterized by ambitious national visions, such as Saudi Vision 2030 and the UAE Tourism Strategy 2031, where governments are heavily investing in mega-projects and see technology as a core component of building world-class destinations. In this region, AI adoption often comes as a top-down initiative, integrated into new tourism cities, airports and cultural sites from the design stage. This creates smart infrastructure powered by AI for security, customer service and operations. A key aspect of the Middle East approach is the integration of AI ecosystems, where AI is used in concert with the IoT and robotics to revolutionize how tourism is experienced and managed.

Key priorities in the Middle East include using AI for enhanced visitor services, e.g., AI concierge robots, virtual guides), crowd management (crucial for holy cities and large-scale events) and hyper-personalization for luxury tourism. The region also leverages AI and AR/VR to showcase cultural heritage in new ways, such as virtual reconstructions of ancient sites. Governance, particularly in the Gulf, is centralized and agile. Regulatory frameworks are being rapidly adjusted to encourage AI innovation, with the United Arab Emirates having an AI tourism authority and Saudi Arabia establishing the Saudi Data and Artificial Intelligence Authority (SDAIA).

Case study 5:

Saudi Arabia – Vision 2030 AI ecosystem for tourism (SARA, Smart Hajj and Heritage AI)

Strategic vision and objectives

The Saudi Vision 2030 is a bold plan to diversify the economy beyond oil, with tourism as a cornerstone. Within this strategy, AI is a transformative force to build an entire tourism ecosystem from the ground up. The objectives are expansive: to position Saudi Arabia as a premier global destination by offering unparalleled, tech-enhanced travel experiences, and to handle the scale of growth efficiently and sustainably. The ambitious goal of the Kingdom is to reach 150 million visitors annually by 2030, a target that was recently updated after it achieved its initial goal of 100 million visitors well ahead of schedule.[81]

Specifically, the tourism strategy leverages AI to deliver smart, seamless travel, from visa applications to airport arrivals and touring sites. It also focusses on using AI to ensure safety and crowd control during major events, most critically the Hajj pilgrimage, where the goal is to manage millions of pilgrims in real time. Additionally, the Kingdom aims to use AI to bring its cultural heritage to life through augmented reality tours and AI-curated museums. A key part of this vision is building a world-class AI ecosystem by not only adopting technology but also developing local talent through initiatives like training Saudis in AI and setting up an AI Center for Excellence to Develop Operational Processes for Tourism.

Enabling capacity and institutional anchors

The Government of Saudi Arabia has poured immense resources into building the necessary capacity for this AI-driven vision. A prime anchor is the Saudi Data and AI Authority (SDAIA), which partners with the Tourism authority of Tourism to steer AI initiatives and ensure alignment at the highest levels. The Public Investment Fund (PIF) is channelling billions of dollars into tourism mega-projects like NEOM and The Red Sea Project, which have dedicated technology budgets and partnerships with global tech firms. The Kingdom also supports innovation hubs like the new the Tourism Grow Center, established by the Tourism Development Fund (TDF), which nurtures startups with mentorship and resources.[82]

Global partnerships are a major component. For example, Huawei, the Chinese multinational, was brought in to integrate AI and IoT at King Salman International Airport to make it a smart airport.[83] On the human capital side, Saudi Arabia has launched programmes to train youth in AI, with a new national curriculum introducing AI education in public schools from 2025 onward.[84] The high smartphone penetration and tech-savvy youth are significant assets. Furthermore, the Tourism authority of Hajj and Umrah works closely with tech entities to implement AI for crowd management, smart ID cards and pilgrim services, ensuring solutions respect cultural and religious contexts.

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Technologies and use cases

The case of Saudi Arabia is rich with headline-making AI applications. A centrepiece is SARA, the Saudi Arabia smart tourism guide. SARA is a hyper-realistic, AI-powered digital human designed to be the first travel companion in the world developed for a tourism board. Tourists can interact with SARA via a mobile app or on interactive screens at airports and museums to get personalized recommendations and information in multiple languages.[85]

Another critical use case is the Smart Hajj system. To manage the Hajj pilgrimage millions of visitors, Saudi Arabia uses AI-driven crowd analytics from cameras and sensors to predict bottlenecks and safety hazards, allowing authorities to take proactive measures. AI is also used for biometric identification to help find lost individuals and to monitor the health data of the pilgrims via wearable devices. In mega-projects, NEOM and The Red Sea Project are incorporating AI at their core. NEOM plans to use AI for autonomous shuttles and personalized hotel experiences, while The Red Sea Project is deploying AI for environmental monitoring to protect coral reefs and wildlife. At cultural heritage sites such as AlUla and Diriyah, AI and AR technologies are widely used for immersive experiences, such as overlaying reconstructions of ancient civilizations on real ruins.

Governance, risk and sustainability measures

With the government in firm control, the governance of AI in Saudi tourism is centralized yet evolving. Data governance is a core pillar of the National Strategy for Data and AI (NSDAI) and is overseen by the SDAIA, which has a sub-entity called the National Data Management Office (NDMO). This office develops policies and controls to protect personal and sensitive data, ensuring alignment with national regulations.[86] The Kingdom also introduced its Personal Data Protection Law (PDPL), which came into effect on 14 September 2023, and serves as the legal framework for how data from tourists is handled and protected.[87]

Risk management is a critical focus, especially for high-stakes applications like the Hajj pilgrimage. The AI systems for crowd management are extensively tested, with redundancies built in to ensure human monitors or secondary systems can intervene, if needed. For emerging technologies, such as the autonomous shuttles planned for NEOM, safety is a top priority, with comprehensive protocols developed in partnership with leading tech companies like the American robotics company Nuro, including simulations and supervised on-road trials before full deployment.[88]

Cultural sensitivity is also a key consideration. The design and content of AI solutions are carefully curated to respect local norms. For example, the SARA virtual guide is designed as a young Saudi woman who is a travel enthusiast, with a persona and conversational style that are friendly but culturally appropriate. The content SARA provides is also vetted to ensure it aligns with the values of the country.[89] This structured approach means that even content for AI guides and chatbots is overseen by teams that include cultural experts and religious authorities for Hajj-related information.

On the sustainability front, the Saudi Vision 2030 emphasizes that growth will be environmentally responsible. AI is a tool used to ensure this:

- **Environmental monitoring:** The Red Sea Project is deploying AI to protect coral reefs and track conditions in its eco-tourism destinations. NEOM has a goal of dedicating 95% of its land to nature preservation, and AI surveillance systems help monitor and enforce this.[90]
- **Resource management:** AI is being used for predictive analytics to manage resource use in smart hotels and resorts, particularly for energy and water consumption in an arid climate.[91]
- **Accessible tourism:** AI and augmented reality are used to make sites accessible to a diverse audience. AI is increasingly being applied to accessible tourism solutions: personalized recommendation systems suggest accommodations and attractions tailored to the accessibility requirements of the travellers; AI-powered chatbots assist travellers with disabilities by providing instant information on accessibility features; and data-driven tools analyse real-time tourist flows and accessibility needs, helping destinations better manage infrastructure and services. These applications, widely discussed in the accessibility community, highlight the potential of AI to remove barriers and enhance inclusion in tourism. While there are no specific public reports on AI-powered descriptive audio for blind visitors in Saudi museums, the broader push for digital inclusion through multilingual AI guides and AR experiences demonstrates a clear commitment to making tourism accessible to non-Arabic speakers and those with specific access requirements.[92] The governance structure also includes continuous evaluation and public-private partnerships, where accountability is shared. Projects are so high-profile that they are under both international and domestic scrutiny to show results. Research and analyses on these partnerships indicate that, although they are top-down, they prioritize cultural authenticity and community engagement.[93]

Continue →

Outcomes and lessons learned

While some Saudi Vision 2030 projects are still underway, Saudi Arabia has seen impactful outcomes. The Smart Hajj systems have improved pilgrimage operations, with officials attributing a reduction in crowd-related incidents to AI crowd management. In the broader tourism sector, the international arrivals of Saudi Arabia surged by 65% from 2022 to 2023, reaching over 27 million visitors. This digital transformation is considered a key enabler of the ability of the country to handle this influx.[94]

The launch of the SARA virtual guide attracted global media attention, effectively positioning Saudi Arabia as a tech-forward destination and helping to change perceptions. Internally, AI-driven efficiencies are saving costs and time; for example, smart airports have cut waiting times through AI check-in and biometric gates. A key lesson learned is the importance of system integration. Saudi Arabia found that having many disparate AI solutions is less effective than having a unified, interconnected platform, which is why the government is pushing for a holistic smart tourism environment.

Another valuable lesson is that the human element remains crucial. Saudi Arabia has positioned AI as a tool to augment human hospitality, not replace it. This has been a key factor in public acceptance, as workers are being retrained for higher-skilled roles in managing these new systems. The broader takeaway is that with government commitment, vision and investment, a country can drive rapid AI adoption and fundamentally transform its tourism sector in a short period.

06

Measuring impact and managing risk

About this chapter:

This chapter explores how tourism authorities can measure the impact of AI and manage related risks through responsible governance. It outlines key performance indicators such as visitor satisfaction, sustainability outcomes and inclusion of underserved communities to assess the success of AI-driven initiatives. The chapter connects these efforts to the UN Sustainable Development Goals, showing how AI can support climate action, economic growth and inclusive innovation. It also addresses key risks including algorithmic bias, job displacement, privacy concerns and over-reliance on automation. To mitigate these, it recommends governance tools such as ethical guidelines, AI audits, pilot programmes and inclusive policy development. With thoughtful implementation and oversight, AI can generate measurable, sustainable benefits for the tourism sector.

Key words:

Impact measurement // AI ethics // Sustainable Development Goals (SDGs) // Risk management // Governance tools

Key messages:

- Evaluating the impact of AI through inclusive indicators and alignment with the SDGs helps ensure that technology delivers public value in tourism; and
- Effective governance using ethical principles, audits and broad stakeholder participation is essential to manage risks and build trust in AI for tourism.

This chapter examines how tourism authorities can gauge the success of AI initiatives and ensure these technologies are implemented responsibly. It outlines the key performance indicators (KPIs) for success, explores how AI can advance sustainable tourism and the Sustainable Development Goals (SDGs), and identifies major risks associated with AI in the tourism sector. It also discusses governance tools and strategies to maximize benefits while mitigating risks.

6.1

Key indicators for success

Tourism authorities are increasingly defining KPIs to evaluate the impact of AI-driven projects. Common success metrics include tourist satisfaction, sectoral revenue growth, sustainability outcomes and reach or inclusion of underserved areas. Each KPI provides a lens on how AI is transforming tourism services and whether these transformations align with policy goals:



Tourist satisfaction

Visitor satisfaction is a core indicator of success in tourism innovation. AI applications, such as chatbots, personalized recommendation engines and smart guides, aim to enhance the traveller experience through greater personalization and convenience. High satisfaction signals that these AI tools are meeting the needs of travellers and improving trip quality. In the context of sustainable tourism, maintaining a high level of tourist satisfaction and ensuring a meaningful experience is essential. For example, UN Tourism emphasizes that satisfied tourists are more likely to understand and embrace sustainability practices during their visits. Likewise, AI-powered concierge apps and translation tools can boost convenience and satisfaction for international tourists. Many national tourism organizations now use tourist satisfaction scores, e.g. post-visit surveys, net promoter scores (NPSs) and sentiment analysis of reviews, as a key success indicator for digital initiatives.[95]



Sectoral revenue, sustainability and inclusive impact

Acritical set of KPIs relates not only the contribution of AI initiatives to tourism revenues and economic growth, but also their role in fostering balanced, inclusive, and sustainable outcomes. Tourism authorities may still track traditional metrics such as increases in tourist spending, length of stay, or visitor numbers attributable to AI-enhanced marketing and operations. AI can drive revenue gains by improving marketing efficiency, enabling dynamic pricing and enhancing cross-selling of services. For instance, AI-driven personalization in hospitality may lead to higher direct bookings and upsells, while AI adoption in other tourism businesses has helped increase efficiency, reduce costs, and improve customer satisfaction.

Equally important, however, are KPIs that go beyond revenue to capture whether AI tools are reducing inequalities, e.g., enabling SMEs to access new markets,, supporting environmental goals such as promoting low-carbon itineraries or reducing congestion at heritage sites,, and strengthening community well-being, e.g., improving accessibility for persons with disabilities or dispersing visitor flows to less visited areas.. Some authorities also monitor whether AI initiatives contribute to biodiversity protection, carbon footprint reduction, or cultural preservation.

Many governments are beginning to link these multidimensional KPIs to broader development goals, ensuring that tourism growth is not just about more but about better: balancing economic performance with social inclusion and environmental stewardship. By integrating economic, social, and environmental dimensions into a single KPI framework, tourism authorities can ensure that AI-driven initiatives advance balanced, inclusive, and sustainable development[96]

Reach and inclusion (underserved areas)

Lastly, tourism authorities are interested in the inclusivity of the AI benefits, essentially, whether AI initiatives help spread tourism benefits beyond the usual hotspots. KPIs in this domain may include the number of new or rural destinations promoted via AI, increased tourist arrivals and spending in less-visited regions, or greater inclusion of local SMEs and minority-owned businesses in digital tourism platforms. The goal is to ensure AI does not just reinforce well-trodden tourist paths but rather helps include underserved areas and communities in tourism growth. For example, the use of AI recommendation systems can nudge travellers toward secondary cities or community-based tourism experiences, thereby improving geographic distribution of tourism. Such efforts can be evaluated by tracking tourist traffic to off-the-beaten-path locations before and after AI deployment, or the percentage of tourism revenue accruing to rural areas. While harder to quantify, inclusion remains a qualitative success factor noted in many national AI and tourism strategies.

Table 6.1. Common KPIs to evaluate the impact of AI-driven projects.

Tourism experience

Visitor satisfaction with AI-enabled services, e.g., chatbots, personalization.

Potential data sources
Visitor surveys and platform reviews.

Sustainability

AI-supported measures reducing congestion or carbon footprint.

Potential data sources
Destination management systems.

Economic impact

Increase in tourism revenue linked to AI-driven marketing or dynamic pricing

Potential data sources
Tourism boards and private sector reports.

Inclusivity

Accessibility improvements via AI translation or voice-enabled tools.

Potential data sources
User analytics and accessibility audits.

Operational efficiency

Reduction in service response times through AI automation.

Potential data sources
KPIs of the tourism authority.

Reach

Share of SMEs using AI solutions or connected to data platforms.

Potential data sources
Digital economy statistics.

In practice, tourism authorities use a combination of these KPIs to get a balanced view of the impact of AI. For example, a destination marketing organization might report that an AI-driven campaign led to a 10% increase in off-season tourist spending (revenue KPIs), a notable uptick in visitor satisfaction ratings (quality KPIs), and evidence of reduced overcrowding at major attractions (sustainability KPIs). By defining clear indicators from the outset, governments can better measure the return on investment (ROI) of AI projects and ensure they deliver not just on economic outcomes but also on improving visitor experiences and supporting sustainable development. The use of well-chosen KPIs thus helps public authorities demonstrate the public value of AI innovations in tourism and adjust policies if the desired benefits are not being realized.

6.2
Aligning AI with sustainable tourism and the SDGs

As tourism agencies implement AI, there is a strong impetus to align these efforts with sustainable tourism principles and the SDGs. Tourism is recognized as a sector that can advance multiple SDGs, provided growth is managed responsibly97 In particular, AI initiatives in tourism can contribute to goals such as decent work and economic growth (SDG 8), responsible consumption and production (SDG 12), climate action (SDG 13), and others, while also posing challenges that need careful management.

This section discusses how leveraging AI in tourism can support key SDGs:

- **SDG 8 (decent work and economic growth):** The role of tourism in job creation and economic growth is explicitly highlighted in SDG target 8.9, which calls for policies to promote sustainable tourism that creates jobs and promotes local culture. AI has the potential to amplify the economic contributions of tourism by boosting productivity, creating new kinds of jobs and fostering innovation in the sector. For example, AI-driven efficiencies in marketing, operations and customer service can help tourism businesses – particularly SMEs – to grow, thereby supporting inclusive economic growth. At the same time, to truly align with decent work objectives, AI adoption needs to be accompanied by workforce development and protections. The United Nations Global Compact observes that while AI can support job creation in several sectors, it also poses risks to vulnerable workers that must be addressed.[98] In the tourism context, this means using AI to complement and up-skill employees rather than simply replace them, thus creating higher-value jobs. Many repetitive or laborious tasks, e.g., data entry and basic customer queries can be automated, freeing workers to focus on more interpersonal and creative aspects of hospitality. Some destinations are already training their tourism workforce in AI skills, creating new specialist roles, such as data analysts for tourism trends or AI system managers, which contributes to decent employment. Ultimately, aligning with SDG 8 requires that AI-driven productivity gains translate into fair wages, improved working conditions and opportunities for local entrepreneurs. Governments know the importance of preparing workers for the AI era through reskilling programmes, so that the tourism labour force can transition into new roles and continue to thrive. When implemented thoughtfully, AI in tourism can strengthen competitiveness while creating better jobs, supporting the SDG 8 mandate of inclusive and sustainable economic growth.[99]
- **SDG 12 (Responsible Consumption and Production):** The potential of tourism as the largest human-to-human economic and social activity is reflected in SDG 12. The need to accelerate sustainable consumption and production patterns and to use the unique catalytic function of the tourism sector is at the heart of the tourism growth model committed to sustainability. Target 12.b specifically encourages developing and implementing tools to monitor sustainable tourism impacts, an area where AI can be transformative. By deploying AI for resource optimization, waste reduction and impact monitoring, tourism authorities can significantly improve the sustainability performance of the sector. For instance, AI is used to analyse big data from satellites, sensors and social media to monitor environmental indicators such as beach cleanliness, foot traffic on trails, or wildlife disturbances in real time. This improved monitoring allows quicker action to prevent degradation. Moreover, AI-powered analytics can encourage responsible consumption by tourists by providing feedback and nudges. For example, apps that show a visitor their carbon footprint for different activity choices, or recommender systems that promote eco-friendly tours and locally owned businesses. All these applications help integrate sustainability into tourism consumption patterns. UN Tourism has highlighted that tourism can only be sustainable if the needs of visitors, the environment and host communities are balanced, and AI offers new tools to achieve that balance.100. By reducing waste and optimizing resource use, AI-driven solutions in tourism embody the principles of SDG 12. Importantly, AI can also assist in measuring progress on sustainable tourism, providing the data needed for indicators under 12.b, which tracks how well destinations monitor sustainable impact.

- **SDG 13 (Climate Action):** The tourism sector is both impacted by and contributes to climate change. AI can support climate action in tourism in several ways, helping to mitigate emissions and build resilience. On the mitigation side, AI enables smarter energy management, efficient transportation logistics and optimized routing, all of which can cut the carbon emissions associated with tourism. For example, airlines and cruise companies are experimenting with AI for route optimization to reduce fuel burn, and destinations are using AI to manage traffic flows to decrease congestion-related emissions. In hospitality, AI systems that intelligently control lighting, heating and cooling can significantly lower energy use. The result is a direct contribution to climate change mitigation goals. Additionally, AI can aid in climate adaptation for tourism by improving forecasting and early warning systems, e.g., AI-driven climate models can predict extreme weather events that might affect tourism regions, supporting SDG 13.1 on resilience. By integrating such AI tools, tourism authorities can better protect tourists and assets from climate-related disasters. Overall, aligning tourism AI with SDG 13 involves using technology to decarbonize tourism operations moving toward low-carbon destinations, and to safeguard destinations in the face of climate impacts. Some countries are beginning to include carbon reduction metrics in their tourism strategies and looking at AI as an enabler to achieve those targets. For. F example, using AI to optimize tour itineraries for minimal travel distances, or to manage visitor levels at sensitive natural sites in line with carrying capacity to protect ecosystems. These efforts tie directly into global climate action commitments.

- **Other SDGs (Community, Innovation, etc.):** AI in tourism can also advance aspects of SDG 11 (Sustainable Cities and Communities) by making cities smarter and more liveable for both residents and visitors. Smart tourism initiatives, like real-time crowd management, intelligent public transport scheduling, or augmented reality (AR) and virtual reality (VR) guides for cultural heritage, improve urban sustainability and preserve cultural assets (supporting SDG 11.4 on safeguarding heritage). Likewise, AI can help ensure that tourism growth benefits local communities, touching on SDG 10 reduced inequalities and SDG 1 no poverty. For example, AI-driven platforms that connect rural artisans or homestay owners with tourists can generate income in poorer communities, fostering more inclusive growth. However, there is a risk of a digital divide (see next section on managing risks), ensuring that all countries and communities have access to AI tools is crucial so that AI does not inadvertently widen inequality, an issue related to SDG 10. Furthermore, SDG 9 (industry, innovation and infrastructure) is inherently supported by the digital transformation of tourism: adopting AI is part of innovating the industry and upgrading infrastructure, e.g., smart destination infrastructure with IoT sensors. Many tourism authorities view AI as a pathway to modernize the sector, improve data infrastructure and stimulate innovation by startups, aligning with the SDG 9 call for fostering innovation. Indeed, UN Tourism and United Nations Development Programme (UNDP) have argued that tourism, as a multi-faceted sector, can accelerate progress towards all 17 SDGs by harnessing new technologies and approaches.101 The bottom line is that aligning AI with sustainable tourism means deliberately designing AI projects to support broad development objectives, creating decent jobs, empowering local communities, protecting the environment and improving governance. By keeping the SDGs in focus, tourism stakeholders can ensure that AI investments yield not just tech upgrades, but real social and environmental dividends.

In summary, AI offers powerful tools to advance sustainable tourism if applied thoughtfully. It can help balance the triple bottom line – economic (profit), social (people) and environmental (planet) – which is the essence of sustainable tourism development. Nevertheless, unlocking the positive contributions of AI to the SDGs requires proactive governance to avoid potential downsides. The next section discusses the risks that must be managed to keep AI deployments on a sustainable, equitable track.

6.3
Managing risks

While AI holds great promise for tourism, it also introduces a range of risks and challenges that tourism authorities must actively manage. Left unchecked, these risks could undermine trust, exclude certain groups, or cause harm to the very people and places tourism is meant to benefit. Key risks linked to AI in tourism include labour displacement, algorithmic bias, misinformation, surveillance and privacy concerns and over-reliance on automation, the environmental footprint of AI, the homogenization of tourist experiences, and the risks of both overregulating and underregulating the sector. Recognizing and mitigating these issues is vital for responsible AI adoption.



Labour displacement and skills gaps

Perhaps the most frequently cited concern is that AI and automation could displace workers in the tourism sector. Many tourism and hospitality jobs, from travel agents to front-desk clerks and tour guides, are susceptible to partial automation by AI systems, such as chatbots handling bookings or robots assisting with cleaning. If AI adoption is pursued with a pure cost-cutting mindset, it could lead to job losses or the devaluation of certain skills. For example, if an AI concierge system replaces the need for multiple hotel concierges, those employees might be laid off unless they are moved into new customer experience roles. Additionally, a skills gap can emerge tourism employees may lack the digital skills to work effectively alongside AI. According to the Global Survey on AI in Tourism, 17.2% of respondents said that AI is 'automating jobs and reducing workforce needs''. However, 37.5% also said AI is 'increasing job opportunities in AI-related fields'', and another 34.4% said it is 'changing required skill sets for existing jobs'. This risk is especially pronounced in developing countries where digital skills training is limited.

On the flip side, if handled well, AI could create new employment avenues in tourism (as mentioned under SDG 8). The mitigation lies in education and training: governments are advised to protect and prepare workers as AI is used to improve operational efficiency. This means upskilling the current workforce, e.g., training tour guides to use AI tools to enrich their storytelling rather than be replaced by them, and ensuring new entrants have digital competencies. Governments are helping workers adapt through reskilling and upskilling programmes (42.2%) and AI-focused university programmes and certifications (31.3%), as the Global Survey on AI in Tourism shows. The overall message is that human talent remains central; AI should augment human workers, not simply replace them, to preserve the role of the sector role as a job creator. Policies like job transition support, lifelong learning initiatives and social protection for affected workers are critical to manage this risk.

Algorithmic bias and discrimination

Another significant risk is that AI systems might inadvertently perpetuate bias or unequal treatment among tourists or destinations. AI algorithms learn from data, and if that data is skewed or unrepresentative, the resulting recommendations or decisions can reflect and even amplify existing biases. According to the perspectives of surveyed public-sector respondents in the Global Survey on AI in Tourism among the primary data sources used to train AI applications are social media data (51.6%), visitor satisfaction surveys (46.9%), and mobility data (50.0%). If these data sources are not curated and representative, they can lead to bias. In tourism, this could manifest in several ways. For example, an AI-driven travel recommendation platform might mostly promote well-known destinations and ignore small community attractions because the training data has more information on popular sites, effectively biasing visibility against lesser-known locales; or a facial recognition system at airports might perform worse for certain ethnic groups, leading to longer wait times or intrusive checks for those travellers, which is a form of discriminatory impact.

UNESCO has cautioned that AI technology risks reproducing real world biases and discrimination, fuelling divisions and threatening fundamental human rights and freedoms.102 In tourism contexts, biases could also affect hiring – if AI is used in recruitment –, marketing – if algorithms target ads only to high-income travellers and overlook others –,– or customer service – if AI chatbots struggle with certain languages or accents –. A practical example of this risk is that an AI itinerary planner might consistently direct tourists to businesses run by larger firms, which have more online data, rather than those run by minorities or local families, thus skewing economic benefits. Moreover, so-called "digital redlining" could occur if, say, an AI-based pricing tool offers better deals to certain nationalities or demographics based on their data profile. Such outcomes would conflict with the inclusivity goal of tourism.

To manage them, it is crucial to implement checks on AI systems such as rigorous testing with diverse data, inclusion of diverse stakeholders in AI design and ongoing audits of AI decisions. However, a significant challenge is that 60.9% of tourism authorities surveyed do not have guidelines to ensure the ethical use of AI in tourism. For the few that do, the key ethical concerns being prioritized are data privacy and security, transparency in AI decision-making, fairness and the avoidance of bias and data governance. For example, a tourism board using an AI recommendation engine should periodically audit which businesses and areas are being recommended and ensure a fair representation. The UNESCO Recommendation on the Ethics of Artificial Intelligence similarly calls for regular evaluation to detect biases and recommends that AI outcomes be explainable and corrected if biased. In summary, preventing AI bias in tourism is about both better data governance (curating high-quality and inclusive datasets) and ethical oversight so that AI serves all groups fairly, rather than entrenching existing inequities.



Privacy, surveillance, and trust

The increasing use of AI in tourism often involves large-scale collection of personal data such as travel histories, facial images, location tracking, spending patterns, etc. This raises significant privacy and surveillance concerns. Tourists and residents may feel uneasy or have their privacy violated if AI systems monitor their movements or preferences too intrusively. For instance, smart destination projects may deploy cameras and sensors to track visitor flows, or hotels might use AI to analyse guests' social media to personalize services. While these can improve experiences, they cross into sensitive territory regarding personal data protection. Additionally, technologies like facial recognition at airports or attractions, if not carefully governed, could lead to a sense of surveillance. The Global Survey on AI in Tourism found that data privacy and security concerns are a key challenge for 48.4% of governments when implementing AI strategies.

Beyond privacy, cybersecurity is a related risk. AI systems could be hacked or manipulated. For example, imagine an attack on an AI system that manages the tourist transport of a city, causing chaos. If tourists lose trust that their data is safe, e.g.,., if a tourism app suffers a data breach, they may be reluctant to use those digital services.

Managing this risk involves robust data protection measures and governance. Many governments are strengthening legal frameworks, aligning with instruments like the European Union General Data Protection Regulation (GDPR), to ensure that personal data collected via tourism AI apps is stored securely, used only for intended purposes, and deleted when no longer needed. For tourism authorities, conducting privacy impact assessments before rolling out AI systems is now considered best practice. Techniques like data anonymization and opt-in consent mechanisms can help balance innovation with individual rights. Furthermore, communicating clearly to tourists about what data is being collected and how it improves their experience can increase trust. In short, without addressing privacy and surveillance concerns, AI projects risk public backlash. Successful destinations will be those that leverage the benefits of AI while upholding strict standards on privacy and digital ethics, thereby maintaining the trust of travellers and residents alike.



Misinformation and authenticity

The risk of misinformation extends to how AI might affect the authenticity of tourism information and experiences. With AI-generated content becoming more prevalent, there is potential for tourists to encounter fake reviews, AI-fabricated images of destinations, or misleading content that distort expectations. If a generative AI tool produces a very idealized description of a destination, a tourist might arrive and feel disappointed, impacting satisfaction. There is also the risk of deepfake audio or video being used in scams targeting travellers.

For destination marketers, maintaining authenticity is crucial. Over-reliance on AI to generate text or images could lead to generic or culturally insensitive marketing materials if not reviewed by humans. Misinformation can also circulate through AI-driven recommendation engines if they propagate user-generated content that has not been fact-checked.

This risk underscores the need for human oversight and curation. Tourism boards are advised to use AI as a support tool, not an infallible oracle, and to implement content verification processes. Thus, maintaining authenticity and accuracy in tourism content is an active area of risk management. Some. S solutions include AI tools that detect deepfakes, or collaborative efforts in the industry to verify online information, e.g., verified reviews badges.



Over-Reliance on automation and technological dependency

There is the risk of becoming over-reliant on AI and automation, potentially undermining the human elements of travel and making the sector fragile in case of tech failures. Tourism is fundamentally a human-to-human industry: personal hospitality, cultural exchange and spontaneity are key to its appeal. If destinations lean too heavily on automation such as fully automating visitor information centres or using only AR and VR for interpretation at heritage sites, they might erode the human touch that many travellers seek. Over-reliance might lead to a homogenization of experiences, as algorithms homogenize recommendations, and tourists end up following the same AI-recommended paths. Moreover, tourists themselves might become too dependent on digital guides, losing the sense of adventure or serendipity in travel.

From an operational perspective, heavy reliance on AI means that any system outage or glitch could disrupt services at scale. For instance, if an AI-powered booking platform goes down, a destination could see widespread booking failures. There is also a loss of skills issue. If. I staff become overly dependent on AI, e.g., always using translation apps instead of learning basic phrases, or relying on route-finding apps in wilderness tourism without traditional navigation skills), resilience can suffer.

To mitigate over-reliance, experts recommend maintaining a hybrid approach: keep humans in the loop and preserve traditional knowledge and ways of doing things alongside AI systems. For example, a nature park that introduces an AI trail guide might still encourage ranger-led hikes and ensure maps and signage are available, so that the experience is not solely tech-driven. Diversifying technology providers and conducting regular drills for manual overrides can also help. In essence, tourism authorities should view AI as a powerful assistant, but not a replacement for human judgment or authentic hospitality. Striking this balance will help maintain the resilience of tourism systems, so that if one AI tool fails, the destination can continue to operate smoothly, and guests still feel cared for.



Environmental footprint of AI

Training and operating AI systems can consume large amounts of energy and water, particularly when models are hosted in data centres. This can contribute to carbon emissions and resource pressures, raising questions about the sustainability of AI adoption. Tourism authorities that are positioning AI as a driver of sustainable development must also ensure that AI solutions themselves are energy-efficient and environmentally responsible.

To manage this risk, destinations should prioritize green AI practices: selecting cloud providers powered by renewable energy, using lightweight or local AI models where possible, and monitoring the carbon footprint of AI projects. Similar to sustainability standards already applied in other industries, governments can also establish guidelines that encourage suppliers to report on the environmental impact of their AI systems.



Homogenization of experiences

AI recommendation engines can inadvertently standardize travel by suggesting similar attractions, restaurants or itineraries to large groups of tourists, leading to a loss of diversity and uniqueness in travel experiences. This algorithmic sameness risks undermining the richness of tourism, where serendipity, local culture and unique discoveries are part of the value.

To manage this risk, authorities should design AI tools to promote variety and inclusivity, ensuring algorithms highlight diverse destinations, niche cultural offerings, and local businesses. Mechanisms like “diversity quotas” in recommendation systems, rotating features of lesser-known sites, and collaborations with SMEs can help preserve the richness of tourism.

Regulatory risks

Governments face a delicate balance. Excessive regulation can stifle innovation and discourage experimentation with AI in tourism, while weak or absent regulation can create risks around safety, privacy, consumer protection, and trust.

This dual challenge reinforces the need for adaptive approaches such as regulatory sandboxes and testbeds, which allow controlled experimentation while safeguarding public interest. Regular review of rules, stakeholder consultation, and phased implementation of regulations can help avoid both extremes. By calibrating oversight dynamically, governments can ensure AI governance remains protective yet enabling.

Table 6.2. Managing risks

Labour

Risk of job displacement in customer service or operations.

Mitigation strategies
Upskilling programmes and AI-human collaboration models.

Ethics and bias

Algorithmic bias leading to exclusion of smaller destinations.

Mitigation strategies
AI audits, diverse datasets and human-in-the-loop.

Privacy and surveillance

Excessive tracking of the tourists movements.

Mitigation strategies
Privacy-by-design and anonymization protocols.

Deepfakes and misinformation

Fake tourism content is impacting destination reputation.

Mitigation strategies
Verification frameworks and trusted content labels.

Environmental footprint

High energy and resource use from AI systems contributes to emissions and pressure on sustainability goals.

Mitigation strategies
Green AI practices, such as renewable-powered cloud providers, lightweight and local models, and carbon footprint monitoring.

Homogenization of experiences

AI recommendations create sameness in tourist flows, reducing cultural diversity and uniqueness.

Mitigation strategies
Algorithm design promoting diversity, support for SMEs, rotating lesser-known sites and fairness checks.

Regulatory extremes

Risk of stifling innovation through overregulation or creating harms through under-regulation.

Mitigation strategies
Adaptive approaches: sandboxes, phased rules, stakeholder consultation and periodic regulatory review.

In conclusion, managing the above risks is an integral part of any strategy for AI in tourism. By proactively identifying risks, from job impacts to digital ethics, and implementing safeguards, destinations can reap the benefits of AI while avoiding pitfalls. The final section of this chapter will discuss the concrete governance tools and strategies that can help achieve this balance.

6.3

Governance tools and mitigation strategies

Effectively governing AI in tourism is about putting in place the right policies, standards and practices to maximize benefits and minimize risks. Governments have a critical role in steering AI deployment in a direction that is ethical, inclusive and aligned with public interest. This section outlines practical tools and strategies, from ethical guidelines and regulatory sandboxes to stakeholder engagement and AI audits, that public authorities can use to ensure AI contributes positively to tourism development.



Adopt ethical guidelines and principles

A foundational step is to adopt clear ethical guidelines for AI in line with international best practices. The OECD Principles on AI provide a baseline, emphasizing values such as inclusiveness, fairness, transparency, accountability and respect for human rights in AI systems.103 For tourism ministries, aligning with these principles means, for example, ensuring that an AI-driven visitor management system is transparent in how it makes decisions, or that a smart tourism app is accessible to people with disabilities (inclusiveness principle). Similarly, UNESCO Recommendation on the Ethics of Artificial Intelligence adopted in 2021 offers a comprehensive global standard. It underscores that the protection of human rights and human dignity is the cornerstone of AI governance, and calls for human oversight, transparency, fairness, and sustainability in AI design and deployment.[104]

Tourism authorities can localize these high-level principles into sector-specific codes of conduct, for instance, developing AI ethics recommendations for tourism that all tourism tech projects must adhere to. Some countries have already released AI ethics guidelines for public sector use of AI; these often cover things like algorithmic transparency, e.g., explaining AI decisions to the public, data privacy mandates and avoidance of bias. By formally adopting such guidelines, tourism departments signal a commitment to responsible AI and provide public assurance that technology will not be used recklessly.

Importantly, ethical principles need to be operationalized. This. T could involve training for staff and stakeholders on AI ethics and integrating ethical checkpoints in project lifecycles: for example, an ethics review before launching a new AI-based tourist information system. In summary, a principled approach to AI provides the guardrails to keep innovation on a responsible path.



Regulatory sandboxes and pilot programmes

To foster innovation while managing risks, governments can use regulatory sandboxes or pilot programmes for AI in tourism. A sandbox is a controlled environment where companies or public agencies can test new AI solutions under supervision, with regulatory flexibilities and oversight. For tourism, this might mean allowing a trial of autonomous shuttles in a resort area or testing an AI-driven translation earbud for tour guides, within defined parameters. The benefit of a sandbox is that regulators and stakeholders can observe the technology in action and identify any issues (safety, ethical and practical) before wider deployment. For instance, a national tourism board could run a sandbox for AI-powered drone tours of natural parks: researchers and regulators work together to monitor impacts on wildlife, privacy of visitors and quality of interpretation. If successful, regulations can then be adjusted to allow broader use; if problems arise, the project can be revised or halted without large-scale damage.

Tourism being a cross-cutting domain, collaboration between tourism authorities, tech developers and regulators, such as data protection authorities or transport regulators, in a sandbox is especially useful. Sandboxes serve as learning labs as they produce evidence on what guidelines or standards might be needed. Policymakers can require that sandbox participants share results transparently, helping build knowledge in the sector. Overall, this approach demonstrates a commitment to evidence-based regulation rather than blanket bans or unregulated deployment.

Stakeholder participation and multi-stakeholder governance

Governing AI in tourism should not be top-down only. It thrives with inclusive, multi-stakeholder participation. Tourism impacts many groups: government, businesses (from big airlines to small tour operators), local communities, civil society and the tourists themselves. Including these voices in AI governance ensures diverse perspectives on what risks and benefits matter. For example, involving local community representatives when designing a smart tourism initiative can surface concerns about cultural impacts or equitable benefit sharing that technologists or officials might overlook.

One practical mechanism is establishing advisory councils or working groups on AI in tourism that include academia, industry experts, community leaders and ethicists to guide government strategies. Public consultation is another tool: when drafting policies for, say, the use of AI surveillance cameras in tourist areas, authorities can hold public forums to gather input and address anxieties. Some countries have launched national AI strategies with specific chapters on sectors like tourism; these often emphasize stakeholder engagement as a principle. Additionally, educating stakeholders is important so they can effectively participate. For instance, small businesses need awareness of AI opportunities and challenges so they can voice their needs.

Multi-stakeholder governance also extends to international cooperation. Sharing. S best practices through organizations like UN Tourism, or bilateral exchanges, helps countries learn from mutual successes and mistakes in tourism AI projects. Finally, empowering travellers is an emerging idea; giving tourists more control over how their data is used (via consent dashboards) or channels to provide feedback on AI-driven services can make governance more user-centric. In summary, broadening the governance process beyond government alone leads to more robust and accepted solutions. It embodies the governance by the people ethos. Since tourism is ultimately about people-to-people connection, its AI governance should likewise be participatory.

AI audits, impact assessments and accountability mechanisms

To ensure that AI systems in tourism remain trustworthy over time, governments are increasingly instituting audit and assessment requirements. An AI audit involves reviewing the algorithms, data and outcomes of an AI system to check for issues like bias, errors or compliance with standards. For example, if a destination uses an AI system for dynamic pricing of attractions, regulators or independent auditors could inspect it to ensure it is not price-gouging or unfairly discriminating, e.g., charging higher prices to certain groups. Audits can be technical, such as code review, algorithmic and impact evaluations, and ethical, such as evaluating whether the system uphold stated values. The UNESCO recommendation calls for regular monitoring and assessment of AI impacts on human rights, well-being, and the environment.[105] Likewise, the OECD principles promote accountability – meaning there should be someone responsible if an AI causes harm.[106]

Some jurisdictions are introducing the European Union Artificial Intelligence Act (AI Act)frameworks as a structured process to evaluate the potential impact of an AI system before and after deployment. Tourism ministries could adapt such tools to their context, ensuring that a new AI visitor forecasting system is assessed for data quality and privacy risks before being implemented. Another accountability measure is creating clear redress mechanisms. For instance, if a tourist or employee believes an AI decision was unfair, e.g., a visa rejected by an AI-powered system or an automated hotel charge made in error, there should be a way to appeal or have a human review the decision. This is aligned with the principle of human oversight. In terms of governance structure, some countries are establishing independent bodies or ombudspersons specializing in digital or AI ethics who can handle complaints and enforce accountability. For the tourism sector, working with existing consumer protection agencies to extend their remit to AI-driven travel services is one approach.

Proactively, tourism boards can simulate worst-case scenarios, e.g., an AI giving dangerously wrong advice, and ensure contingency plans are in place. The focus is to create an environment where AI systems are transparent (explainable AI – XAI), regularly evaluated, and have "accountability and human-centric design" baked in.[107] By doing so, destinations can avoid incidents that erode public trust and can correct course if an AI tool is not performing as intended. In short, continuous oversight through audits and impact assessments helps maintain public accountability of AI in tourism, aligning with broader governance trends in tech.

Regulatory and policy frameworks

In addition to soft measures like guidelines and audits, formal regulatory frameworks are evolving. Tourism authorities should ensure that their policies sync with national and international regulations on AI, data and digital services. For example, data privacy laws, such as GDPR in Europe, or equivalents elsewhere, set boundaries on how tourist data can be collected and used, tourism organizations must comply by design when implementing AI systems. Some countries might introduce specific regulations for biometric AI in public spaces, which would directly affect things like facial recognition for tourists. It is wise for tourism ministries to coordinate with justice, ICT, or interior ministries on such matters.

Another tool is standards and certification. For instance, governments can encourage or mandate adherence to technical standards for AI quality, interoperability and safety, such as ISO standards on AI. Tourism tech providers that get certified for following these standards could be given preference in public contracts. Furthermore, using procurement as leverage is effective. If a tourism board only procures AI systems that meet certain ethical criteria, it pushes the industry toward responsible innovation. Each country will tailor its approach, but sharing knowledge is key.

Education, capacity building, and digital inclusion

A softer but crucial governance strategy is investing in capacity building so that all stakeholders can engage with AI effectively and ethically. This includes training government officials in tourism ministries about AI so that they understand its capabilities and limitations when crafting policy, educating tourism business owners so that SMEs are not left behind in AI adoption due to lack of knowledge, and raising awareness among the public and tourists so that they understand how AI is used in services they encounter and their rights around it. Some countries are launching digital literacy campaigns in tourism hubs or offering grants for tourism SMEs to obtain AI training and tools. Others are integrating ethical AI modules in hospitality education. Such initiatives help mitigate the risk that the advantages of AI are concentrated only in big companies or advanced economies; , addressing equity concerns related to unequal access to technology, skills, and opportunities across different regions and business sizes.

Digital inclusion ensures that the AI revolution in tourism does not sideline certain groups or destinations. For example, ensuring AI interfaces are multilingual and culturally adapted aligns with the UNESCO call for diversity and inclusiveness in AI. Governments can support the development of open-source AI tools for tourism in local languages or create innovation hubs that pair tech developers with small tourism operators. By broadening who can create and benefit from AI, governance strategies contribute to more inclusive growth.

In conclusion, governing AI in tourism is a multi-faceted endeavour. It requires a blend of policy instruments, from high-level ethical frameworks to on-the-ground regulatory experiments, and the involvement of a broad coalition of stakeholders. International principles like the OECD AI Principles and the UNESCO Ethical AI Recommendation give a valuable overarching compass, highlighting the need for trustworthy, human-centric AI. The onus is now on national and local authorities to implement these principles through concrete actions: setting guidelines, enacting protections, building capacity and constantly iterating governance approaches as technology evolves. In the tourism sector, this means ensuring AI is deployed not as a marketing novelty , but as a tool to improve governance, enhance experiences responsibly and distribute benefits widely. By using the tools discussed – ethics codes, sandboxes, audits, stakeholder engagement and more – policymakers can maximize the upside of AI (innovation, efficiency and personalization) while minimizing the downside (bias, job loss and privacy invasion). Effective governance will help build public trust in AI-enabled tourism services, creating a stable environment for ongoing innovation. Ultimately, the destinations that succeed in this new era will likely be those that couple technological advancement with strong ethical oversight and an unwavering commitment to the public good. As this chapter has detailed, measuring the impact of AI and managing its risks go hand in hand. With. W thoughtful governance, AI can be guided to truly augment sustainable tourism rather than undermine it.



07

Global guidelines for AI-enabled tourism

About this chapter:

This chapter presents global guidelines to support responsible AI adoption in tourism, offering tailored recommendations for national governments, local authorities and multilateral organisations. It highlights the role of governments in setting ethical standards, strengthening data governance and enabling inclusive innovation, particularly for small businesses and underserved communities. Local destination managers are encouraged to use AI to improve visitor experiences, enhance sustainability and engage residents. The chapter also outlines how international agencies can promote global alignment, provide technical support and invest in infrastructure and capacity building. A tiered action framework helps stakeholders at different stages of AI maturity – exploring implementing and consolidating – advance in practical, context-specific ways. Together, these guidelines support a globally coordinated effort to ensure AI in tourism is ethical, inclusive and aligned with sustainable development goals.

Key words:

Global guidelines // Stakeholder coordination // Sustainable tourism // AI maturity // Policy alignment

Key messages:

- Responsible AI in tourism requires coordinated action across governments, industry and international partners, guided by shared values and inclusive practices; and
- A tiered framework enables destinations at different levels of readiness to adopt AI in ways that build capacity, protect cultural integrity and promote sustainability.

AI technologies offer unprecedented opportunities to reimagine the tourism landscape, from optimizing visitor flows and mitigating environmental impacts to preserving cultural heritage and engaging communities. Realizing these benefits sustainably requires clear guidelines and coordinated action by stakeholders at every level. This chapter outlines global guidelines for key actors in the tourism ecosystem —national governments and tourism ministries, local governments and destination managers and multilateral agencies and donors— to facilitate AI-enabled tourism that is responsible, inclusive and aligned with sustainable development goals. Finally, it presents a tiered framework of actions for destinations at different maturity levels (exploring, implementing and consolidating) to tailor these recommendations to their stage of AI adoption.

7.1
Guidelines for national governments and tourism ministries

National governments and tourism ministries set the vision and policy environment for AI adoption in tourism. They play a pivotal role in ensuring that AI innovations advance public interests, safeguard values and spread benefits across the sector. Key guidelines for national authorities include:

Establish a national AI and tourism strategy: Develop or update national strategies to integrate AI into tourism development plans. This should include ethical AI guidelines addressing privacy, bias, transparency and accountability in tourism contexts. Tourism must be included in broader national AI policy discussions so that sector-specific needs, such as cultural nuances and seasonality, are not overlooked. A clear strategy signals government commitment and provides direction for all stakeholders.

Strengthen data governance and privacy: Put in place robust data protection and consumer privacy measures as AI is used to create personalized travel services. Governments should update laws or guidelines on data security, data sharing, and AI transparency specific to tourism, e.g., ensuring that traveller data used by AI systems is handled securely and with consent). Clear regulations build trust among travellers and businesses using AI.

Build human capacity and skills: Invest in education and training programmes to prepare the tourism workforce and government officials for an AI-enabled future. As AI-driven automation is introduced, ministries should monitor impacts on tourism jobs and implement upskilling or reskilling initiatives so that workers can transition into new roles alongside AI. This is critical as the Global Survey on AI in Tourism found that while 37.5% of respondents said AI is 'increasing job opportunities in AI-related fields'', another 34.4% said it is 'changing required skill sets for existing jobs and 42.2% of governments still have no specific initiatives to help workers adapt. Encouraging university programmes and public-private training partnerships in tourism analytics, data science and AI ethics will cultivate the needed expertise.

Support industry innovation and SMEs: Governments should actively help tourism businesses, especially SMEs, to adopt AI. This can include funding pilot projects, offering tax incentives or grants for AI solutions, and creating innovation sandboxes or competitions that recognize AI best practices in tourism. Since many tourism SMEs lack the resources to experiment with AI, ministries can facilitate knowledge-sharing platforms or bulk procurement of AI services to lower costs. The aim is to ensure a level playing field so that AI benefits are accessible to large and small players alike.

Ensure inclusivity and cultural sensitivity: Any national AI tourism initiative should protect minority rights and local cultures. For instance, AI-driven marketing or services must respect cultural heritage and avoid one-size-fits-all approaches. Governments are urged to ensure a level playing field and protect cultural sensitivity when promoting AI in tourism. This might involve guidelines for content localization, so that AI tools accommodate local languages and customs, and involving community stakeholders in the design of AI projects.

Facilitate infrastructure and open data: Laying a strong digital foundation is critical for AI-readiness. Tourism ministries should invest in digital infrastructure, such as broadband connectivity in tourist areas, open data portals and smart sensors in destinations, which AI applications can leverage. Promoting open tourism data, while respecting privacy, can enable startups and researchers to build AI tools that benefit the sector. Some countries have created national tourism data hubs or digital ID systems for travellers. Such initiatives can accelerate AI innovation in a secure manner.

By implementing these guidelines, national authorities can create an enabling environment where AI solutions enhance competitiveness and sustainability in tourism, while minimizing risks to society.

7.2
Guidelines for local governments and destination managers

Local governments, city authorities and destination management organizations (DMOs) are on the front lines of tourism management and thus crucial for implementing AI at ground level. They can improve visitor experiences and resource management by becoming smart destinations. Smart destinations are generally conceived as data-driven initiatives, built on strong systems for collecting and managing information. Within this context, AI does not replace the data-driven foundation but builds upon it, adding an additional layer of analysis and decision-making that can enhance visitor experiences and strengthen resource management. Key guidelines for local authorities and DMOs include:

Leverage AI for smart destination management: Embrace AI tools to optimize daily tourism operations and long-term planning. For example, destinations can use AI for real-time crowd management in popular sites, traffic control during peak tourist seasons, or predictive analytics to anticipate visitor demand. Deploying AI-driven smart tourism systems helps enhance visitor experiences and improve operational efficiency in destinations. Successful examples include chatbots for tourist information, AI-powered translation apps for multilingual assistance, and algorithms that redirect visitors from overcrowded areas to lesser-known attractions.

Integrate AI in local marketing and services: DMOs should incorporate AI into destination marketing strategies, such as personalization of travel recommendations on websites or using AI to analyse social media trends for marketing campaigns. Local tourism offices can also use AI chatbots or voice assistants to answer visitor queries 24/7. Importantly, such systems must be kept accurate and culturally appropriate. AI can help tailor services to visitor preferences, for instance, recommending nearby restaurants based on individual dietary needs, and thereby increase visitor satisfaction and spend.

Foster community and SME engagement: Local authorities should act as facilitators so that smaller tourism operators and the community benefit from AI. This includes running workshops or AI in tourism training for local businesses, sharing data insights, e.g., anonymized tourism statistics, with entrepreneurs, and possibly pooling resources for shared AI services, like a jointly funded reservation system with AI analytics. Coordination between city leaders and DMOs with local industry associations is key to ensure even small family-run tourism businesses can participate in the AI transformation. By building local capacity, destinations ensure that AI adoption is inclusive and not limited to big companies.

Use AI for sustainability and resilience: Destination managers should harness AI to support sustainable tourism goals. For example, monitoring environmental indicators, such as crowding in natural parks, water or energy usage by tourism facilities. can already be done with conventional methods. The added value of AI lies in reducing the complexity of such analysis and helping overcome resource limitations, enabling managers to process larger, more diverse datasets more efficiently. In this way, AI can generate timely insights and suggest actions to mitigate negative impacts. It can also improve crisis management: AI predictive models might assist in disaster preparedness for tourism hotspots or in managing health and safety information (as seen during COVID-19 pandemic). Local governments can partner with tech providers to pilot such solutions, ensuring that AI becomes a tool for conserving heritage and environment rather than stressing them.

Maintain ethical standards and transparency: When deploying AI at a destination level, transparency with the public is essential. Residents should be informed about how AI is being used in managing tourism, for instance, use of closed-circuit television (CCTV) with AI for crowd control, to prevent misunderstandings or privacy concerns. It is advisable to establish local guidelines or ethics committees to review AI projects, aligning with national laws. Additionally, destination managers must ensure AI-driven visitor services do not inadvertently reinforce biases. For instance, an AI recommendation engine should showcase diverse local businesses, not only those with more data or reviews. Keeping a human-in-the-loop for critical decisions like security or emergency responses is important to maintain accountability.

In essence, local governments and DMOs should adopt a human-centric approach, using AI to enhance efficiency and experience, while engaging their communities and upholding the unique values of the destination.



7.3
Guidelines for multilateral agencies and donors

International organizations, development agencies, and donors have a unique role in setting global direction and supporting countries in AI-enabled tourism. Their actions can ensure that AI benefits are shared globally and aligned with sustainable development objectives. Key guidelines for multilateral agencies and donors include:

Develop and disseminate global principles: Multilateral organizations should lead in formulating high-level principles or frameworks for responsible AI in tourism, drawing on international best practices. These can mirror broader AI ethics agreements such as the OECD AI Principles or UNESCO Recommendation on the Ethics of Artificial Intelligence but tailored to tourism context, addressing issues such as cultural preservation, equitable access to AI tools and tourist rights in the digital age. By providing a common reference, global guidelines help align countries and industry to a shared vision of trustworthy AI in tourism.

Provide technical assistance and capacity building: Agencies should support countries, especially developing states, in building the foundational capacities for AI in tourism. This may involve funding training programmes, toolkits and digital platforms to help tourism ministries and businesses implement AI responsibly. Such efforts ensure no country is left behind due to lack of expertise.

Facilitate knowledge sharing and collaboration: Donors and international bodies should create forums for exchanging experiences, research, and case studies on AI in tourism. This could include global conferences, regional workshops, or online platforms where policymakers and practitioners share what works. Peer learning networks, pairing advanced AI consolidating destinations with exploring ones, can accelerate adoption through mentorship. Multilateral agencies might also publish periodic reports on AI trends in tourism to disseminate insights broadly.

Fund pilot projects and infrastructure: Grants and development financing can be directed towards pilot projects that demonstrate AI applications in tourism with high development impact. AI might be using to improve destination planning in least-developed countries, or AI-driven platforms that empower indigenous communities to market their cultural tourism products globally. Likewise, donors can invest in critical digital infrastructure in tourism regions, such as data centres, internet connectivity or open data repositories, which are prerequisites for effective AI solutions. By financing these public goods, donors catalyse private innovation that might not emerge in resource-constrained settings.

Ensure alignment with SDGs: All multilateral-supported AI initiatives in tourism should be screened for their social and environmental impact. Agencies have a responsibility to promote AI that advances sustainability. For instance, AI that helps reduce the carbon footprint of tourism, or that improves inclusion of marginalized groups as employees or entrepreneurs. They should develop safeguards so that funded AI projects adhere to ethical standards, avoid harm (no violation of privacy or human rights) and truly benefit host communities. Encouraging gender equality in tech, e.g., programmes to train women in tourism AI skills, or supporting local language AI solutions are ways to align with the SDGs. Donors can require such considerations in grant criteria and project evaluations.

Coordinate policies and measurement: At the international level, organizations should work together on common metrics and frameworks to measure AI readiness and impact in tourism. A global AI in tourism index or readiness assessment toolkit can help countries benchmark progress and identify gaps. This also ties into policy coordination, for example, aligning efforts on AI governance so that regulations in different countries are interoperable and not conflicting for tourism operators. Multilateral agencies can convene policy dialogues to harmonize approaches, as well as encourage the adoption of open standards for AI systems and data in travel and tourism.

By following these guidelines, multilateral agencies and donors will act as enablers and guardians of AI-enabled tourism development, ensuring resources, knowledge and norms are in place for all countries to benefit while minimizing global risks.

7.4
Tiered actions by maturity level

Not all countries and tourism organizations are at the same stage in their AI adoption journey. A small developing destination just beginning to explore AI will need a different approach than a tech-savvy nation already deploying advanced AI solutions at scale. Tiered actions by maturity level ensure that stakeholders take appropriate, realistic steps that match their context. Broadly, it can be categorized maturity in AI-enabled tourism into three tiers:



Exploring

Little to no AI currently in use. The focus is on building foundations and awareness.



Implementing

Some experience with AI (pilot projects or moderate adoption). The. T focus is on scaling up and formalizing what works.



Consolidating

Advanced AI adoption across many aspects of tourism. The. T focus is on innovation, refinement and sharing knowledge.

Each tier has recommended priority actions, as summarized in Table 7.1 below.

Destinations and organizations can identify their maturity level and use these tiered actions as a roadmap to progress to the next level.

Table 7.1 Recommended actions for tourism stakeholders at different stages of AI adoption

Data



- **Exploring:** Begin improving basic data collection (tourist surveys and visit statistics).
- **Implementing:** Invest in integrated data platforms or collaborations, e.g., a national tourism data hub, to enable secure data sharing and analytics.
- **Consolidating:** Support advanced research and development (R&D) and startup incubation in tourism tech, e.g., predictive models for managing heritage site impacts.

Governance and regulation



- **Exploring:** Formulate an initial AI strategy or roadmap for tourism (even a simple action plan).
- **Implementing:** Refine regulatory frameworks and ethical guidelines, ensuring ensure compliance with emerging global standards, appoint an AI ethics officer and unit.
- **Consolidating:** Act as a mentor internationally: share best practices, case studies, and contribute to global AI governance in tourism.

Workforce



- **Exploring:** Conduct awareness workshops and basic training on AI for tourism officials and local industry.
- **Implementing:** Incorporate AI training into workforce development, e.g., advanced analytics, partnerships with universities for research.
- **Consolidating:** Champion global talent exchanges and continuous upskilling; host international AI-in-tourism fellowship or training hubs.

Interoperability



- **Exploring:** Start building minimal digital infrastructure (internet access and website portals) to prepare for future AI use.
- **Implementing:** Ensure interoperability by developing national data standards, APIs, and technical guidelines to connect tourism systems across agencies.
- **Consolidating:** Lead in adopting interoperability frameworks globally; convene coalitions to promote cross-border standards. Also go beyond framework: continuous innovation, global leadership, bias audits, and transparency tools.

In applying this tiered framework, it is important to remain flexible: a country might be a exploring overall but still undertake a few advanced projects, or a consolidating might need to shore up a basic area like data quality. The tiers provide a general pathway. Exploring should focus on getting the fundamentals right so that early AI experiments are successful and build momentum. Implementing should solidify gains and avoid pitfalls, such as unchecked algorithm biases or tech investments without staff training. Consolidating tourism authorities have the opportunity and responsibility to push the frontier of what AI can do for sustainable tourism and to help guide global norms.

By following the global guidelines laid out in this chapter, stakeholders at all levels can ensure that AI in tourism develops in a balanced way, fostering innovation and efficiency while safeguarding ethical, inclusive and sustainable practices. The collective effort of national governments, local destination managers and international agencies will shape an AI-enabled tourism sector that truly redefines the future of travel for the better.





08

Conclusions and global call to action

About this chapter:

This final chapter presents a global call to action for AI in tourism, drawing on lessons from regional experiences and emerging trends. It highlights the importance of building institutional, human and technical capacity to unlock the full value of AI, alongside the need for strong data governance and ethical safeguards. The chapter outlines the risks posed by algorithmic bias, misinformation, surveillance and over-reliance on automation, and urges proactive governance to mitigate them. Looking ahead, it identifies future priorities such as generative AI, extended reality (XR), sustainability and international cooperation. It proposes five strategic recommendations for governments, industry, civil society and international organisations to ensure AI is deployed in ways that promote inclusive innovation, respect human rights and advance sustainable development across the tourism sector.

Key words:

Call to action // Capacity building // Responsible governance // Global cooperation // Future trends.

Key messages:

- Strong capacity and ethical frameworks are essential to ensure AI in tourism delivers value without compromising rights, sustainability or inclusion; and
- Global cooperation and inclusive governance will shape whether AI becomes a force for shared progress or deepened divides in the tourism sector.

As this report concludes on AI and tourism, it is evident that the transformative potential of artificial intelligence in the sector comes with complex challenges and responsibilities. Drawing on cross-cutting findings from regional case studies, this chapter distils key lessons that have emerged across different parts of the world, discusses the critical role of capacity in unlocking the value of AI in tourism, explores future trends and priorities that demand attention, and finally outlines a global call to action for inclusive, accountable and responsible AI-driven tourism governance.

8.1
Key lessons from across regions

Across diverse regions and contexts, a set of common themes has emerged regarding the integration of AI in tourism. These key lessons highlight the foundational elements that determine whether AI adoption in tourism can deliver equitable benefits:



Data governance and infrastructure: A recurrent lesson is the importance of robust data governance frameworks and digital infrastructure in the tourism sector. Reliable data and systems to collect, share and secure it form the backbone of AI applications. Many countries reported that inadequate data practices, e.g., fragmented datasets and weak privacy protections, hinder the effective use of AI. Addressing this requires establishing clear data standards, investing in data infrastructure, and ensuring strong data protection rules in line with global best practices. In essence, better data governance enables better AI outcomes, whereas poor data management and privacy risks can undermine trust and effectiveness.



Public-private collaboration: Effective public-private partnerships have been identified as a critical success factor for AI innovation in tourism. The tourism ecosystem is highly interdependent: governments, tech companies, destination management organizations (DMOs) and local businesses each possess pieces of the AI puzzle. Case studies across regions demonstrated that when the public sector provides an enabling environment through supportive policies, funding and open data, and the private sector contributes technological expertise and agile innovation, AI initiatives tend to scale more successfully. Collaboration helps bridge resource gaps, for example, startups and SMEs often need public support to access data or research, while governments rely on the know-how of the industry to implement AI solutions. Conversely, siloed efforts lead to duplication and missed opportunities. An enabling environment for collaboration – including forums for exchange, regulatory sandboxes and legal frameworks for data sharing – is therefore a cross-cutting priority.



Capacity building and skills: Institutional, human and technical capacity emerged as a linchpin in determining AI readiness across all regions. Even where awareness of the AI potential is high, many tourism administrations and businesses struggle with limited capacity to design, implement and sustain AI-driven projects. A major barrier is the skills gap: tourism SMEs and organizations often lack employees or leaders with sufficient digital and data expertise to procure or manage AI solutions. Similarly, if institutions do not have units or experts dedicated to digital transformation, AI initiatives remain ad-hoc. Several case studies highlighted successful capacity-building efforts, such as training programmes, knowledge exchange partnerships and the creation of cross-disciplinary digital teams within tourism boards, which significantly improved project outcomes. Another aspect is technical capacity: AI in tourism demands reliable internet connectivity, cloud services and access to quality datasets, which are unevenly distributed across regions. This has led to an AI readiness divide whereby advanced economies and larger firms surge ahead, while many developing destinations and small operators lay behind. Bridging these gaps through targeted capacity building was a unanimous recommendation. In summary, investing in people – in terms of skills and literacy – and institutions is as important as investing in technology.

Ethical and responsible AI safeguards: A final cross-cutting lesson is that ethical governance is not an afterthought but a precondition for responsible AI adoption in tourism. Stakeholders across regions expressed the need for safeguards to ensure AI is deployed in alignment with fundamental values: protecting privacy, ensuring fairness and inclusivity, and avoiding harmful outcomes. Without clear ethical guidelines and accountability, the rapid adoption of AI can lead to issues such as algorithmic bias in travel services, threats to cultural heritage (through misrepresentation or carrying capacity driven by AI recommendations), or invasive surveillance of visitors in the name of security. There is growing consensus that tourism-specific AI strategies should incorporate the broader principles of trustworthy AI being discussed globally. Notably, governments are beginning to adapt global AI ethics frameworks to tourism contexts, promoting principles of transparency, human oversight and bias mitigation in tourism applications. A clear message from the regions is that building public trust in AI, among both tourists and industry workers, is essential. This means putting in place measures like ethical charters, evaluation of AI tools for compliance with privacy laws and community consultations for AI projects that impact local populations. One concrete red line echoed from global norms is that AI systems should not violate human rights standards; for instance, UNESCO explicitly warns against AI being used for social scoring or mass surveillance, practices incompatible with human dignity. In essence, responsible AI use, guided by ethics and oversight, is considered fundamental to ensuring AI innovations benefit societies and do not erode the social license to operate in tourism.



8.2

The role of capacity in unlocking value

Throughout this report, the importance of the institutional, human and technical capacity has been repeatedly highlighted as the key to unlocking the full value of AI in tourism. Even the most advanced AI strategies would falter if the stakeholders tasked with implementing them lack the requisite capacities. This section examines how different dimensions of capacity shape the effectiveness of AI initiatives in the tourism sector:



Institutional capacity: Institutional capacity refers to the ability of government agencies, tourism boards and related organizations to formulate and execute AI strategies. It includes having appropriate policies, regulatory frameworks, inter-agency coordination mechanisms, and leadership committed to digital innovation. We found that countries or regions with strong institutional capacity, for example, those that have integrated AI into national tourism strategies or established dedicated innovation units, are better positioned to pilot and scale AI solutions. These institutions can set clear objectives, align stakeholders around a common vision, and mobilize resources accordingly. In contrast, where institutional capacity is weak, efforts remain piecemeal. A telling insight was that tourism-specific AI policies remain scarce in many places, which means general digital economy policies may not address sector-specific needs. This is further supported by the survey data, which shows that only 17.2% of governments are developing an AI in tourism strategy and a mere 3.1% have created an AI in tourism cluster. To remedy this, policymakers need a stronger engagement in AI as it relates to tourism, working closely with ministries of technology, education and infrastructure. Institutional capacity also encompasses the legal and ethical frameworks that govern AI use, for instance, laws on data privacy, cyber security or AI ethics committees in the public sector. Without these, even well-meaning AI projects may face public backlash or legal hurdles. Strengthening institutional capacity might involve training government officials on AI, creating multi-agency task forces on AI in tourism, and developing clear guidelines, such as protocols for AI-driven tourist data usage. Ultimately, robust institutions provide the enabling environment in which technical tools can be deployed effectively and responsibly.



Human capacity: The human element – skills, knowledge and awareness – is equally vital. Tourism is a service-driven industry, and its workforce now needs new competencies to work alongside AI. From front-line service staff using AI-powered translation or recommendation tools, to managers making data-driven decisions, to policymakers evaluating AI proposals, building human capacity is a linchpin of success. Many Member States indicated that digital skills shortages are a primary bottleneck: employees in tourism and hospitality often have limited training in data analytics or AI, and there is a need for upskilling programmes to make AI literacy widespread. Moreover, retaining tech talent in tourism agencies, as opposed to the tech sector, has been challenging in some regions, leading to reliance on external consultants. The case studies showed that when tourism organizations invest in their people, through workshops, certifications or collaboration with universities, they demystify AI and empower staff to identify and implement AI solutions proactively. On the leadership level, improving human capacity means raising awareness among decision-makers about both the opportunities and risks of AI in tourism. Only with informed leadership can appropriate resource allocation and risk management decisions be made. In short, human capital development (education, training and peer learning networks) is fundamental. AI is not a plug-and-play solution, and its value is unlocked by people who know how to harness it.



Technical capacity: Technical capacity covers the physical and digital resources necessary for AI deployment. This includes ICT infrastructure like high-speed internet, cloud computing services, and access to digital devices across tourism sites. It also includes data infrastructure, for instance, tourism satellite accounts, visitor databases or platforms that integrate data from airlines, hotels and attractions. Regions with advanced technical capacity, e.g., widespread connectivity and well-maintained tourism data systems, have a head start in implementing AI solutions like real-time crowd management or AI chatbots for tourists. On the other hand, destinations lacking in this area face a double handicap: not only is it harder to deploy AI, but the gap between them and more tech-enabled competitors can widen. The global AI readiness indices consistently show much higher scores for high-income countries compared to low-income countries, reflecting disparities in infrastructure and innovation ecosystems. As a result, developing countries often rely on external platforms or vendors for AI tools, which can be costly and create dependencies. Bridging this gap will require strategic investments, for example, expanding broadband to tourist regions, supporting open data platforms for tourism, and encouraging local tech entrepreneurship so that home-grown AI solutions can emerge. Encouragingly, international support is growing to help less advanced nations build digital infrastructure and capacity; for instance, multilateral initiatives emphasize solidarity so that AI benefits are shared and not confined to tech-leading countries. Technical capacity-building may also include creating testbeds or innovation hubs in tourism hotspots where new AI applications, such as like augmented reality guides or smart mobility solutions, can be piloted in a controlled manner. In summary, without the proper technical foundations, AI strategies remain on paper; thus, shoring up these foundations is a strategic priority globally.

In combination, these dimensions of capacity form the ecosystem that determines AI readiness in tourism. The interplay is important: a country might have good infrastructure (technical capacity) but still falter if its institutions and people are not prepared and vice versa. The findings underscore that capacity is not a static prerequisite but an evolving asset. Continuous capacity development is needed as AI technologies advance. Building capacity is thus not a one-time effort but a long-term investment in resilience and innovation.

8.3 Future trends and emerging priorities

Looking forward, the intersection of AI and tourism is poised to evolve rapidly. The landscape in the next few years will be shaped by emerging technologies, new governance frameworks and a set of global risks and priorities that are coming to the forefront. Building on the technological foundations highlighted in the earlier report of the UN Tourism in 2023, which emphasized the role of machine learning, recommendation systems, and predictive analytics, this section expands the lens to newer frontiers while recognizing that these core technologies remain central to many tourism applications. Issues such as digital sovereignty, infrastructure readiness, and dependency on large tech providers, also flagged in the earlier report, continue to be relevant considerations.

8.3.1 Emerging technologies: generative AI and XR

The rise of generative AI stands out as a game-changer for tourism. Recent advances in AI that can create content, such as text, images and videos, are opening unprecedented possibilities for personalized and immersive travel experiences. For instance, generative AI systems can design tailor-made itineraries, automatically write travel guides customized to the preference of a tourist and even generate realistic visual previews of destinations.108 Chatbot travel assistants powered by large language models are becoming capable of engaging with travellers in natural conversation, offering on-the-fly recommendations or customer service in multiple languages. n sum, the future priorities identified here build upon, and complement, the technological perspective of earlier UN Tourism research (pp. 35–37 of the 2023 report), while bringing forward the most recent developments such as generative AI, XR, sustainability concerns, and risk-based governance. . In parallel, extended reality (XR) technologies, encompassing virtual reality (VR) and augmented reality (AR), are maturing and converging with AI. VR can offer virtual tourism experiences, e.g., try-before-you-travel virtual tours of heritage sites or resorts, while AR can enhance on-site experiences by overlaying information or interactive content onto the physical world. AI plays a role in powering these experiences, for example, AI algorithms that personalize AR content based on user data. The XR market in travel is projected to grow significantly as headsets become more affordable and content more sophisticated. These technologies present opportunities for destinations to showcase themselves in new ways and for travellers to have richer experiences, including greater accessibility through features such as descriptive audio for blind visitors, captions and sign-language overlays for deaf travellers, or mobility previews to help visitors with physical impairments plan their journeys... However, these advances also raise questions, notably around content authenticity and quality. If an AI can generate a photorealistic image or video of a place that is indistinguishable from reality, how does it ensure tourists are not misled by simulations? It will be important to develop norms (or even regulations) about disclosure of AI-generated content in marketing and to ensure that virtual experiences complement rather than substitute responsible physical tourism.

8.3.2 Governance frameworks and AI risk classification

As AI becomes more embedded in society, governments worldwide are developing new governance approaches, many of which will affect the tourism sector. A notable trend is the move toward risk-based frameworks for AI regulation. For example, the European Union proposed the AI Act that introduces a system of classifying AI applications by risk levels (unacceptable risk, high risk, limited risk and minimal risk) and imposes requirements accordingly. Under this model, certain AI uses, such as those that could endanger safety or rights, will face stricter controls or even be prohibited; a concept that could impact tourism-related uses like biometric surveillance at airports or AI systems used for visa processing. Other jurisdictions are likely to adopt similar risk-based approaches, guided by the principle that the level of governance should match the potential harm of the AI application. Additionally, international bodies are working on ethical guidelines and standards that, while voluntary, set important benchmarks. The G7, for instance, launched the Hiroshima AI Process in 2023 to deliberate on generative AI governance in an inclusive way, reflecting recognition at the highest levels that new AI tech needs new rules.[109] We anticipate that AI governance in tourism will increasingly involve sector-specific considerations, for example, classification of certain tourism AI systems like dynamic pricing algorithms or tourist facial recognition for security as higher-risk, requiring transparency and human oversight. Destination regulators might issue guidelines for AI-enabled services, as some cities have begun doing for ridesharing and accommodation platforms. Another emerging priority is AI governance capacity: ensuring that tourism ministries and DMOs have the expertise to evaluate AI proposals, conduct risk assessments and enforce compliance with data protection or non-discrimination laws. In line with global recommendations, integrating AI ethics into tourism policies will help align the sector with international norms on human rights and sustainability.[110]

> ***Ethical, inclusive, and purpose-driven AI in tourism ensures fairness, accessibility, and maximizes positive societal impact.***

8.3.3 Global risks: deepfakes, misinformation and surveillance

The flip side of the AI potential are the global risks that accompany its misuse. Two prominent concerns are deepfakes and broader AI-generated misinformation, and surveillance and privacy abuses. In the tourism context, deepfakes and synthetic media could undermine trust in what it is seen and read about destinations. There are already instances of AI-generated fake travel reviews and guides proliferating online, which can deceive consumers or unfairly damage reputations. A recent analysis warned that the travel industry is facing a fake review storm, with AI-generated reviews on major platforms surging; for example, TripAdvisor has reportedly seen nearly double the number of fraudulent reviews in 2022 compared to a few years prior.[111] Such fake content can distort travellers' decision-making and erode confidence in online recommendations. Combating this will require improved detection mechanisms, platform accountability and possibly new regulations treating certain AI-driven deceits as fraud. Meanwhile, the increasing use of AI-driven surveillance tools poses a dilemma between security/convenience and privacy. Airports and popular tourist cities are experimenting with facial recognition, behaviour-tracking cameras and other AI systems to enhance safety or streamline services. While these can improve efficiency, e.g., seamless biometric check-ins at hotels or faster security screenings, they raise serious privacy and civil liberties issues if not carefully governed. International human rights standards caution against unchecked surveillance: UNESCO Recommendation on the Ethics of Artificial Intelligence explicitly state that AI systems should not be used for mass surveillance that infringes on fundamental rights.[112] Thus, a future priority is establishing clear boundaries and oversight for AI deployment in public tourism spaces, ensuring that technologies like facial recognition are subject to transparent evaluation, proportional use and community consultation. In addition to deepfakes and surveillance, other emerging risks include bias and discrimination, such as AI systems unintentionally favouring certain groups or destinations over others, cybersecurity threats, such as AI systems becoming targets of hacks that could disrupt tourism services, and loss of human touch, such as over-reliance on automation diminishing the personal intercultural experience that is at the heart of tourism. Each of these issues will need proactive strategies so that AI advance does not inadvertently harm the very goals that tourism is meant to foster, like mutual understanding and sustainable development.

8.3.4 Emerging priorities: sustainability and resilience

Another future-oriented priority is leveraging AI for the broader goals of sustainable and resilient tourism. As climate change and environmental pressures intensify, the tourism sector must adapt and mitigate its impacts. AI offers powerful tools for optimizing resource use, e.g. AI systems that manage energy and water in hotels efficiently, or predictive analytics to manage visitor flows and reduce overcrowding at natural sites, but these must be pursued intentionally. The next generation of AI in tourism should be aligned with climate goals and the preservation of cultural and natural heritage. This includes monitoring and limiting the carbon footprint of AI itself; AI computation can be energy intensive, and the industry will need to balance digital innovation with green practices[113]. We foresee increased attention to the role of AIin climate adaptation for tourism, such as early warning systems for extreme weather affecting destinations, and sustainable mobility, for instance, AI-optimized public transport for tourists. Ultimately, the future trend is a holistic one: integrating AI into tourism not as an end, but as a means to achieve a smarter, more sustainable and inclusive tourism sector that can weather future challenges. This will require continuous innovation coupled with forward-looking governance, guided by the principle that technology should serve people and the planet, not the other way around.

In sum, the future priorities identified here build upon, and complement, the technological perspective of UN Tourism's 2023 report on Artificial Intelligence and Tourism, while bringing forward the most recent developments such as generative AI, XR, sustainability concerns, and risk-based governance.

> ***Integrating AI into tourism not as an end, but as a means to achieve a smarter, more sustainable and inclusive tourism sector.***

8.4

The way forward for AI and tourism governance

Considering the findings and lessons compiled in this report, this concluding section issues a global call to action. The aim is to chart a way forward for harnessing AI in tourism through collaborative governance that emphasizes inclusivity, accountability and sustainability. The following strategic recommendations are proposed for governments, industry stakeholders, international organizations, and civil society as they collectively navigate the AI era in tourism:

Foster inclusive AI development and deployment: It is imperative that the benefits of AI in tourism are shared broadly, and no country or community is left behind. This means actively working to bridge digital divides: supporting lower-income countries, small island developing states and rural regions to access AI technologies and knowledge. The most technologically advanced nations and companies have a responsibility to assist those with less capacity, in a spirit of global solidarity. Concretely, this could involve twinning programmes between destinations, funding for digital infrastructure in emerging markets, and open sharing of AI tools for the common good, for example, open-source translation models for minority languages to aid tourism communication. Inclusivity also calls for involving a diverse range of stakeholders in AI design and governance: Women, youth, local and indigenous communities, and SMEs should have a voice in how AI is adopted in tourism. By ensuring broad participation and access, AI can contribute to a more equitable tourism sector rather than widening existing gaps.

Strengthen capacity building and literacy: Building on the critical role of capacity discussed earlier, stakeholders should make capacity development an ongoing priority. International organizations can coordinate capacity-building initiatives that provide training, resources and mentorship on AI for tourism officials and businesses. This might take the form of e-learning programmes on AI ethics and data governance, workshops for tourism SMEs on implementing AI solutions, or AI for tourism accelerator programmes that pair tech experts with tourism entrepreneurs. Enhancing institutional capacity could include creating toolkits for drafting AI-inclusive tourism policies or establishing regional centres of excellence that advise on AI projects. A key part of capacity is also AI literacy for the public and tourists; helping people understand the AI presence, for instance, disclosure when AI is used in customer service or security, so they can engage with it knowledgeably. By investing in human and institutional capacity, countries will unlock innovation at all levels and ensure that AI solutions are appropriately tailored to local contexts. This capacity emphasis aligns with international calls for addressing knowledge and skills gaps as a prerequisite to harnessing AI for sustainable development.

> ***"Harnessing AI in tourism through collaborative governance that emphasizes inclusivity, accountability and sustainability."***

Embed ethics, accountability and human rights in AI governance: The way forward must be rooted in responsible AI governance. All stakeholders should embed ethical considerations and human rights due diligence into the life cycle of AI systems in tourism. Governments are encouraged to develop or adopt guiding principles for AI in tourism that echo global frameworks. For example, committing to fairness, transparency, privacy protection and human oversight for all AI applications in the sector. Concretely, this could mean implementing assessment processes to classify the risk of AI systems used in tourism, similar to emerging international best practice, and requiring higher standards, such as algorithmic impact assessments or third-party audits for high-risk uses like biometric identification or AI-driven decision-making that affects individuals' travel rights. Legal and regulatory measures should be updated or enacted to hold AI providers and users accountable, ensuring there are avenues for redress if AI causes harm or discrimination, and clarifying liability when AI is involved in incidents. Collaboration with oversight bodies (data protection authorities, consumer protection agencies, etc.) will help enforce these safeguards.

The private sector, for its part, should adopt ethical AI codes of conduct and be transparent about their AI systems. For instance, clearly informing customers when an AI, rather than a human, is making recommendations or decisions. At a global level, adopting a rights-based approach in AI governance means aligning with instruments like the Charter of the United Nations and international human rights law when deploying AI. By proactively setting "guardrails" — that is, clear principles and safeguards to ensure responsible AI use —, as the UN system recommends, stakeholders can maximize the positive impact of AI while mitigating risks.[114] In summary, accountability should be a cornerstone: AI must remain under human oversight and control, with clear lines of responsibility to prevent abuse and preserve public trust.

Promote responsible and ethical use of AI for sustainable tourism goals: As AI is integrated into tourism, it must ensure that it advances not only economic sustainability, but also social and environmental sustainability. This entails using AI in service of the SDGs and the objectives of the global sustainable tourism agenda. For example, AI can be directed to optimize resource efficiency, help monitor environmental impacts and support heritage conservation. But equally, stakeholders must monitor and minimize the environmental footprint of AI, such as by encouraging energy-efficient AI solutions and sustainable data centre practices. It is recommended to establish metrics and conduct regular assessments of how AI adoption is impacting various sustainability indicators in tourism (community well-being, carbon emissions, decent work, etc.). Ethically, responsible AI also means AI that respects cultural diversity and local values, for instance, ensuring that AI-driven content about destinations is culturally sensitive and that benefits from AI, such as like revenue from enhanced efficiency, are shared with local communities. In governance terms, this could involve requiring that any AI project in tourism undergo an ethics and sustainability impact review before scaling up. International cooperation can facilitate sharing of best practices on green AI and responsible tourism tech. By aligning AI initiatives with the broader sustainability and climate commitments of nations, it ensures that technological innovation does not come at the cost of our planet or social fabric but rather contributes positively to resilient and regenerative tourism.

Enhance global and regional cooperation for AI in tourism: No country can single-handedly address all the challenges or capture all the benefits of AI in tourism. Therefore, a concerted effort is needed to enhance cooperation at bilateral, regional and multilateral levels. Such cooperation can accelerate learning so that successful AI solutions in one place can be adapted elsewhere, and help harmonize standards so that travellers and companies face consistent rules and ethical norms across destinations. Joint research and development initiatives could be promoted, pooling expertise to solve common problems like AI for multilingual tourism information or crisis management. It is also worth exploring the development of global guidelines or a toolkit specifically for AI in tourism governance, building on cross-cutting principles identified in this report. Additionally, public-private partnerships at the international scale, such as alliances between tech companies, airlines, hotel chains and governments, could be established to tackle issues like data sharing or combating AI-driven fraud. Regional collaboration is equally important: Tourism often has transboundary dimensions, e.g., multi-country travel circuits, so neighbouring states stand to gain by aligning their AI-driven marketing or visitor management systems for mutual benefit. Finally, as AI governance is a rapidly moving target, global cooperation should include a strong emphasis on continuous dialogue, consensus-building and updating of norms as technology evolves. Through multilateralism and partnerships, the international community can ensure that the integration of AI into tourism is guided by collective wisdom and a shared commitment to the global good.

Looking ahead, UN Tourism could also play a catalytic role by facilitating knowledge sharing and long-term monitoring of AI in tourism. One option under consideration is the establishment of a global observatory for AI in tourism, which would serve as a platform to track emerging practices, disseminate lessons learned, and provide continuity to the recommendations of this report. In line with the recent launch of a self-assessment tool of the UN Tourism, the observatory could also help Member States measure and monitor their maturity levels in relation to AI in tourism, offering a structured mechanism to benchmark progress and guide policy adjustments over time. Such an initiative, if endorsed, could help ensure that progress in AI adoption remains aligned with the principles of inclusivity, accountability and sustainability, while fostering international cooperation.

In conclusion, the intersection of AI and tourism presents a historic opportunity: It can dramatically enhance how tourism is managed and experienced and contribute to economic development and cultural exchange on an unprecedented scale. Yet, as this chapter has underscored, realizing that opportunity requires conscious effort to learn from diverse experiences, to build the necessary capacities, to anticipate future trends and to govern the technology wisely. The global call to action articulated above emphasizes that the way forward is one of inclusive collaboration: aligning innovation with values of inclusivity, accountability and sustainability. By heeding these lessons and recommendations, policymakers and stakeholders can steer the digital transformation of tourism in a direction that not only boosts efficiency and growth but also upholds the principles of ethical governance and sustainable development that are the hallmarks of a responsible global community. The journey of AI in tourism is just beginning, and it is our collective responsibility to ensure it becomes a journey that benefits all, strengthening the tourism sector as a driver of peace, prosperity and respect among peoples in the years to come.

> ***The way forward is one of inclusive collaboration: aligning innovation with values of inclusivity, accountability and sustainability.***

Annex:

Does your country have a national AI strategy?

	Frequency	Percentage
Yes	31	**48,4%**
No	21	**32,8%**
In development	11	**17,2%**
Other (please explain)	1	**1,6%**
		Total 64

f yes, how long has your tourism AI strategy been in place?

	Frequency	Percentage
Less than 1 year	6	**54,5%**
1-3 years	4	**36,4%**
More than 3 years	1	**9,1%**
		Total 11

Does your ministry have a specific AI strategy for tourism?

	Frequency	Percentage
No	53	**82,8%**
Yes	11	**17,2%**
		Total 64

How would you describe the level of AI adoption by the private tourism sector in your country?

	Frequency	Percentage
Low	33	**51,6%**
Moderate	26	**40,6%**
High	4	**6,3%**
Very High	1	**1,6%**
		Total 64

How is your ministry currently using or planning to use AI to improve tourism governance and operations?

	Frequency	Percentage
Tourism promotion & marketing	51	**79,7%**
Forecasting visitor numbers & economic impact	48	**75,0%**
Improving data-driven policy decisions	40	**62,5%**
Managing tourism crises and emergencies	21	**32,8%**
Measuring tourism's effect on environment & heritage	20	**31,3%**
Monitoring sustainability initiatives	15	**23,4%**
Other (please explain)	12	**18,8%**

What are the main barriers to AI implementation in government-led tourism initiatives?

	Frequency	Percentage
Limited skilled professionals	51	**79,7%**
High costs of implementation	48	**75,0%**
Lack of infrastructure	40	**62,5%**
Data privacy & security concerns	21	**32,8%**
Regulatory/legal challenges	20	**31,3%**
Lack of startups and national companies with AI capabilities and services	15	**23,4%**
Resistance from internal stakeholders	12	**18,8%**
Other (please explain		

Which AI applications are private tourism businesses implementing in your country?

	Frequency	Percentage
Chatbots/Virtual assistants	44	**68,8%**
Enhancing customer experience	36	**56,3%**
Augmented/Virtual Reality for tourist experiences	30	**46,9%**
AI-powered translation services	28	**43,8%**
Operational efficiency	27	**42,2%**
Predictive analytics for tourism trends and promotion	24	**37,5%**
No consolidated information available on this topic	17	**26,6%**
Security & safety	14	**21,9%**
Revenue management	14	**21,9%**
AI-driven mobility & tourism flow optimization	10	**15,6%**
Accessibility improvements for travelers with disabilities	8	**12,5%**
Sustainability & reducing environmental impact	6	**9,4%**
Other (please explai	2	**3,1%**

Which collaboration between the government and the private sector in AI-driven tourism initiatives?

	Frequency	Percentage
Innovation programs or AI events	29	**45,3%**
Public-private partnerships	28	**43,8%**
Think tanks & research collaborations	15	**23,4%**
Not sure	13	**20,3%**
No collaboration	11	**17,2%**
Policy co-creation on AI in tourism	7	**10,9%**
AI-focused tourism clusters	2	**3,1%**

Which AI applications does your ministry plan to prioritize?

	Frequency	Percentage
Digitalization of tourism data and analytics	50	**78,1%**
AI-powered marketing & tourism promotion	49	**76,6%**
Tourism forecasting & trend prediction	44	**68,8%**
Smart destination management	37	**57,8%**
Workforce training & reskilling programs	23	**35,9%**
Sustainability monitoring & climate impact reduction	21	**32,8%**
Other (please explain)	6	**9,4%**

Does your ministry plan to increase funding for AI initiatives in tourism over the next five years?

	Frequency	Percentage
Yes	32	**50,0%**
Undecided	28	**43,8%**
No	4	**6,3%**
		Total 64

Is your government providing financial incentives for AI innovation in tourism?

	Frequency	Percentage
In planning	27	**42,2%**
No	25	**39,1%**
Yes	12	**18,8%**
		Total 64

If yes, what type of incentives are available?

	Frequency	Percentage
Grants/Subsidies	9	**47,4%**
AI-focused research and development (R&D) funding	3	**15,8%**
Other (please explain)	3	**15,8%**
Investment matching programs	2	**10,5%**
Public-private partnership funding	2	**10,5%**
		Total 19

What impact is AI having on tourism jobs in your country?

	Frequency	Percentage
No significant impact yet	34	**53,1%**
Changing required skill sets for existing jobs	24	**37,5%**
Increasing job opportunities in AI-related fields	22	**34,4%**
Automating jobs and reducing workforce needs	11	**17,2%**

How is your government helping workers adapt to AI-driven changes in tourism?

	Frequency	Percentage
No specific initiatives yet	27	**42,2%**
Reskilling & upskilling programs	27	**42,2%**
AI-focused university programs & certifications	20	**31,3%**
Public-private programs for workforce transition (e.g., retraining or inclusion of displaced tourism workers)	13	**20,3%**
AI-driven digitalization of traditional tourism roles	7	**10,9%**

Does your ministry have guidelines to ensure the ethical use of AI in tourism?

	Frequency	Percentage
No	39	**60,9%**
In development	16	**25,0%**
Other (please explain)	5	**7,8%**
Yes	4	**6,3%**
		Total 64

Which ethical concerns are prioritized in your AI policies?

	Frequency	Percentage
Data privacy & security	4	**19,0%**
Transparency in AI decision-making	4	**19,0%**
Fairness & avoidance of bias	4	**19,0%**
Data governance / ownership of tourism data	4	**19,0%**
Human oversight in automated decision-making	3	**14,3%**
Other (please explain)	1	**4,8%**
Impact on marginalized groups	1	**4,8%**

Total 21

What types of data are used to train or support AI applications in tourism?

	Frequency	Percentage
Social media data	33	**51,6%**
Mobility data (GPS, apps)	32	**50,0%**
Visitor satisfaction surveys	30	**46,9%**
Administrative data	28	**43,8%**
Other (please explain)	11	**17,2%**

What are the key barriers to accessing and using tourism-related data in your country? (Select all that apply)

	Frequency	Percentage
Lack of centralized data infrastructure	38	**59,4%**
Limited interoperability between public and private systems	37	**57,8%**
Lack of data standardization	37	**57,8%**
Low data quality or reliability	27	**42,2%**
High cost of acquiring or processing data	27	**42,2%**
Legal restrictions on data use	20	**31,3%**
Other (please explain	9	**14,1%**

Glossary

Artificial intelligence (AI)
A field of computer science that enables machines to perform tasks that normally require human intelligence, such as problem-solving, decision-making, and language understanding.

Algorithm
A set of rules or steps used by computers to process data and perform calculations, often forming the basis of AI models.

Application programming interface (API)
A software tool that allows different applications or systems to communicate and exchange data seamlessly.

Augmented reality (AR)
Technology that overlays digital information, such as images or text, on the real world through a device like a smartphone or smart glasses.

Bias (algorithmic bias)
Systematic errors in AI outputs that unfairly favour or disadvantage certain groups due to skewed data or flawed design.

Big data
Extremely large datasets that can be analysed by computers to reveal patterns, trends, and associations, often too complex for traditional methods.

Black Box (AI):
A term used to describe an artificial intelligence system whose internal decision-making processes are not transparent or easily understood by humans.

Chatbot
An AI-driven programme that interacts with users through text or voice, often used in tourism for answering visitor questions or providing travel information.

Cloud computing
Delivery of computing services (servers, storage, databases, software, etc.) over the Internet, enabling scalable AI applications.

Data governance
Policies and practices that ensure data is managed securely, ethically, and effectively throughout its lifecycle.

Data Lake:
A centralized repository that allows organizations to store large volumes of structured and unstructured data in its raw format. Data lakes enable flexible storage, integration, and analysis of information from multiple sources, supporting advanced analytics and AI applications.Data hub
A central repository where data from different sources is collected, integrated and shared for analysis.

Artificial intelligence (AI)
A field of computer science that enables machines to perform tasks that normally require human intelligence, such as problem-solving, decision-making, and language understanding.

Algorithm
A set of rules or steps used by computers to process data and perform calculations, often forming the basis of AI models.

Application programming interface (API)
A software tool that allows different applications or systems to communicate and exchange data seamlessly.

Augmented reality (AR)
Technology that overlays digital information, such as images or text, on the real world through a device like a smartphone or smart glasses.

Bias (algorithmic bias)
Systematic errors in AI outputs that unfairly favour or disadvantage certain groups due to skewed data or flawed design.

Big data
Extremely large datasets that can be analysed by computers to reveal patterns, trends, and associations, often too complex for traditional methods.

Black Box (AI):
A term used to describe an artificial intelligence system whose internal decision-making processes are not transparent or easily understood by humans.

Chatbot
An AI-driven programme that interacts with users through text or voice, often used in tourism for answering visitor questions or providing travel information.

Cloud computing
Delivery of computing services (servers, storage, databases, software, etc.) over the Internet, enabling scalable AI applications.

Data governance
Policies and practices that ensure data is managed securely, ethically, and effectively throughout its lifecycle.

Data Lake:
A centralized repository that allows organizations to store large volumes of structured and unstructured data in its raw format. Data lakes enable flexible storage, integration, and analysis of information from multiple sources, supporting advanced analytics and AI applications.Data hub
A central repository where data from different sources is collected, integrated and shared for analysis.

Deep learning
A subset of machine learning that uses multi-layered neural networks to recognize patterns in large and complex datasets.

Digital twin
A virtual representation of a physical object, system, or destination that can be used for simulation and real-time monitoring.

Ethical AI
Approaches to AI development and deployment that prioritize values such as fairness, accountability, transparency, and respect for human rights.

Explainability (explainable AI)
The ability of an AI system to make its decision-making process understandable to humans.

Extended reality (XR)
An umbrella term for technologies that combine physical and digital environments, including virtual reality (VR) and augmented reality (AR).

Fintech:
Short for financial technology, the term refers to the use of digital tools, software, and innovative business models to improve or automate financial services. In the tourism context, fintech solutions can include digital payments, online booking platforms, and AI-powered financial management tools that enhance efficiency and customer experience.

Generative AI
AI systems that can create new content, such as text, images, video, or audio, often based on large datasets and advanced models.

Geographic Information Systems (GIS):
Computer-based tools that capture, store, analyze, and visualize spatial or geographic data. In tourism, GIS supports destination management, infrastructure planning, and environmental monitoring by enabling decision-makers to map and analyze visitor flows, resources, and impacts in specific locations.

Hackathon:
A collaborative event, typically lasting from a few hours to several days, where participants (such as developers, designers, policymakers, and innovators) work intensively to design, prototype, or propose solutions to a specific challenge.

Human-centric AI
AI designed with people's needs, rights, and well-being at the core, ensuring that technology serves humans rather than the other way around.

List of acronyms and abbreviations

AI	Artificial Intelligence
AI Act	European Union Artificial Intelligence Act
AI Readiness Framework	UN Tourism framework for assessing national AI capacity in tourism
AM	Affiliate Members (UN Tourism Department)
API	Application Programming Interface
AR	Augmented Reality
Big Data	Large and complex datasets analysed computationally for insights
Data Hub	Central platform integrating and sharing data across systems
Digital Twin	Virtual representation of a real-world system or destination
ECSR	Ethics, Culture and Social Responsibility (UN Tourism Department)
EU	European Union
GDP	Gross Domestic Product
GIS	Geographic Information System
G7	Group of Seven industrialized nations
HPC	High-Performance Computing
ICT	Information and Communication Technologies
IoT	Internet of Things
ITU	International Telecommunication Union
KPI	Key Performance Indicator
LLM	Large Language Model
ML	Machine Learning
MIPC	Market Intelligence and Competitiveness (UN Tourism Department)
MSME	Micro, Small and Medium-Sized Enterprise
NLP	Natural Language Processing
OECD	Organisation for Economic Co-operation and Development
OECD.AI	OECD Artificial Intelligence Policy Observatory
OECD/G7	OECD and Group of Seven joint policy collaboration
PPP	Public–Private Partnership
R&D	Research and Development

SDG / SDGs	Sustainable Development Goal(s)
SDT	Sustainable Development of Tourism (UN Tourism Department)
SaaS	Software as a Service
Smart Destinations	Technology-enabled destinations promoting sustainability and innovation
SME / SMEs	Small and Medium-Sized Enterprise(s)
Testbed	Controlled environment for testing new technologies
Tourism Data Spaces	Interoperable, secure environments for sharing tourism data
UN	United Nations
UN Tourism	United Nations Tourism (formerly UNWTO)
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UN DESA	United Nations Department of Economic and Social Affairs
UNESCO	United Nations Educational, Scientific and Cultural Organization
VR	Virtual Reality
WTTC	World Travel & Tourism Council
XR	Extended Reality

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