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DIGITAL TRANSFORMATION AND ARTIFICIAL INTELLIGENCE IN TOURISM MANAGEMENT: OPPORTUNITIES AND CHALLENGES IN DEVELOPING NATIONS

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Abstract

The global tourism industry is changing tremendously due to technological advancement. The growing adoption of artificial intelligence (AI) is becoming a major competitive advantage. This position paper discusses the impact of AI-enabled digital transformation within the tourism sector of developing countries. It assesses the sustainable development and operational upgrade opportunities and challenges related to public infrastructure, ethics, and capacity. The analysis draws from a thorough review of published literature and other observable facts. This study recognizes gaps and prescribes frameworks for effective implementation in different situations. Artificial Intelligence provides numerous benefits, such as the ability to customize services, improve operations and increase decisions. Yet, developing country have their own challenges, such as digital divides, financial constraints, skills shortages, and data privacy and algorithmic transparency. This paper draws on implementation experiences from Lithuania, Latvia, Sweden, Vietnam, and several African countries to systematically compare and construct a contextualized framework, the AI-TOURISM-DEV Model, tailored for resource-constrained environments. The findings show that it is required to

Keywords: Digital transformation, artificial intelligence, tourism management, developing nations, sustainable development, smart tourism, ethical AI, technology adoption

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have technological innovation, human-centered approach, incremental deployment, local adaptation, sustainability to best use AI for the prosperity of users. According to this research, the policymakers, tourism associations, technology suppliers and agencies from the developing world can take advantage of the artificial intelligence option at the disposal while overcoming its concern.

Introduction

Context and Background

The tourist industry is presently undergoing a process described as international-digital. This means that services are conceived, developed, delivered and experienced internationally Bondarenko, et al, 2025. The evolution of tourism from the physical realm to a more digital world has reflected the changes society has undergone in recent years towards the Society 5.0 vision whereby the physical (real world) and cyber (digital world) dimensions of our lives are integrated to generate a human centred-technology-enhanced world or ecosystem (Verhoef et al 2021). In this transformation, AI or artificial intelligence has been a disruptive element; it enables high personalization, optimising operations, and generating strategic insights (Bulchand-Gidumal et al., 2023; Chen 2024).

Developing countries face a dilemma from this digital revolution. Countries with emerging economies have the chance to use AI technologies to their advantage and compete favourably in the tourism sector. However, these same countries also experience acute deficiencies in their infrastructure capacity, financial capacity, human capital and regulation needed for the application of AI technologies (Mpofu, 2024; Ateeq, 2025). COVID-19 pandemic will manifest and deepen the duality in the future (Ljarja et al., 2022) by highlighting the advantages of digitalization.

Most of the existing studies look at AI use in developed market settings. There is limited focus on the unique socio-economic, cultural and infrastructure conditions of developing countries (Bekele & Raj, 2025; Madzík et al., 2023). This geographical-and-contextual bias produces major knowledge gaps on appropriate implementation strategies, needed contextual adaptations, and ethical considerations in resource-constrained contexts.

Problem Statement and Research Rationale

While artificial intelligence can no doubt have a game-changing effect, there are a number of barriers to its systematic and effective application in the tourism sectors of developing countries. In many places, energy access is certainly hindered by delays in the implementation and development of technologies, along with limitations in funding (Tien et al., 2023). The challenge of data privacy, the bias of algorithms, or the digital dislocation

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of vulnerable groups remain to be sufficiently addressed in tourist contexts (Ferhataj & Memaj, 2025; Šakytė-Statnickė & Budry tė-Ausiejienė, 2025).

The academic literature demonstrates significant gaps. Although many studies are undertaken on AI applications in tourism more generally for example, Madzik et al. (2023) identified eight important research topics from the analysis of 3683 papers there is a lack of developing nation focus. There have been only a few case studies – Vietnam (Tien et al., 2023) and some select African countries (Mpofu, 2024). Moreover, many of the frameworks we already have are based on the conditions that prevail in developed markets. These conditions relate to technological development, ample capital, efficient and skilled labour, as well as robust data protection. As a result, implementation roadmaps are not often useful. In addition, there is a lack of appropriate incorporation of sustainability, in particular, the Sustainable Development Goals in tourism-focused analyses of AI adoption (Rane et al., 2023). Thus, the objective of the research is to develop contextualized framework of developing country that is targeted to Sustainable Development Goals.

Research Objectives and Questions

Primary Objective: To develop contextually-appropriate framework for responsible AI integration in developing nations' tourism sectors that balances innovation with sustainability, equity, and ethical considerations.

Specific Objectives:

1. Systematically identify and analyze AI-driven opportunities for enhancing tourism operations, experiences, and outcomes in developing nation contexts.
2. Critically examine technological, financial, human capital, and ethical challenges constraining AI adoption in resource-limited environments.
3. Develop the AI-TOURISM-DEV implementation framework with phased roadmaps tailored to the constraints and priorities of developing nations.
4. Propose policy interventions and stakeholder-specific recommendations for responsible AI deployment.

Research Questions:

- **RQ1:** What distinctive opportunities does AI present for sustainable tourism development in developing nations?
- **RQ2:** What technological, economic, human, and ethical barriers constrain AI adoption in developing nation tourism sectors?
- **RQ3:** How can AI implementation frameworks be contextually adapted to address developing nations' unique constraints and development priorities?

Service Personalization and Experience Enhancement

As per Experts, hyper-personalization will be AI's most significant contribution to tourism. AI can improve how services and individual customer needs align with one another (Filieri et al., 2021). Machine learning algorithms examine large amounts of customer data, including website browsing, booking behavior, messaging on social networks, and location data, and they generate suggestions based on specific preferences, constraints, and contexts (Tussyadiah, 2020). The adaptability offered goes further than offering what to book next, stop overs, changing the itinerary on the go due to delays and other delays and even the coffee break!

Evidence shows that personalization can impact customer experience. A study by Ferhataj and Memaj (2025) conducted in Albania reports that 75.2 percent of the tourists agreed that AI enhances the whole travel experience, with personalization being the main benefit. Lithuania, Latvia and Sweden had more satisfied customers because of their personalisation using artificial intelligence. (Šakytė-Statnickė and Budrytė-Ausiejienė 2025) Chatbots have the capacity to provide multilingualism support according to Samala et al. (2022). In addition to that, they have a recommendation engine and predictive analytics ability. All this helps in avoiding any issues arising in the future.

Personalization capabilities can yield huge benefits for developing countries. Small and medium tourist establishments (SMEs) dominate the sectors of developing nations; they now have access to sophisticated analytics once only available to large corporations with their own in house teams of data scientists (Schönberger, 2023). This democratization is expected to even the playing field among competitors where smaller operators will be able to compete on quality. There are still substantial challenges to quality implementation. Other 30 respondents said the same as Ferhataj and Memaj (2025) lack of personalisation was a problem While AI Theory has strong potential, its personalization capability is still unproven. This means that the technical capabilities here are alarmingly low and would require targeted capacity building efforts.

Operational Efficiency and Resource Optimization

Operations run more smoothly thanks to AI technologies. They use control automated systems to predict and allocate resources. Hotel management systems for reserving a spot, varying charges, and tracking objects use cash flow, letting these solutions handle the deal, not the staff. Predictive maintenance systems can forecast equipment failures to prevent service interruptions. Demand forecasting models help ensure capacity planning and labor scheduling to meet demand on time.

Empirical research underscores the importance of operational efficiency. For instance, restaurants that fully implement digital solutions experience a 23% increase in operational

efficiency and a 31% rise in customer satisfaction. AI-based energy management systems can reduce hotel energy consumption by 15-30%. These outcomes are particularly significant in developing countries, where limited resources make operational performance critical to both profitability and environmental sustainability.

A recent article states that Artificial Intelligence can be used for sustainable resource management, such as optimizing energy use, reducing waste, improving transport efficiency, and enhancing conservation. These capabilities align well with the two major requirements of developing countries: economic development alongside care for nature. This allows them to work toward responsible consumption, climate action, and sustainable cities, which are targets under the SDGs. AI usage in tourism operations makes them more efficient. Moreover, it generates prospects for sustainable development in the green destination.

Decision Support and Strategic Intelligence

In recent years, organisations have started using artificial intelligence (AI) tools more and more. This is due to the pursuit of better knowledge and forecasting improvement. According to Buhalis et al. (2019), information that is heterogeneous is refined as the strategic decision-making analytics enable within the field of artificial intelligence. By analyzing consumer perceptions of brands, organizations can quickly gauge market sentiment. Algorithm help to recognize a certain market and design a service for that specific market. Also, intelligent information systems analyze rivals' prices, positioning and promotional strategies to shape timely decisions.

AI assessment tools can help with longstanding problems of asymmetric information that have hampered small operators and emerging destinations. Analítica de dados fornece a base para decisões de gestão informadas. Integrated territories adopting a comprehensive approach achieve 37% greater economic and 42% greater social outcomes (Bondarenko et al., 2025). Artificial intelligence helps in decision-making with strategic advantage in resource-limited environments.

As per Leka et al. (2025), AI supports real-time visitor interactions via chatbot apps and augmented reality. Also, development of sustainable use of resources is help by AI. AI can improve the tourist experience and promote ecological sustainability which gives it a position of strength to use in developing countries in pursuit of balanced development.

Infrastructure and Financial Limitations

Many countries, especially emerging economies, suffer from a significant digital infrastructure deficit that hampers the use of aaditiive intelligence. Mpofu (2024) identified that the two barriers of limited internet connectivity and unreliable electricity

supply, as well as the inadequate penetration of digital devices, are fundamental challenges in the African tourism sector. The limitations that emerge due to these infrastructural gaps differ from developed markets, changing technology choice, implementation, and performance parameters.

Limited finances increase infrastructure-related limits. The cost to implement AI systems is often substantial, as proprietary software must be licensed, hardware must be purchased and systems must interoperate (Bulchand-Gidumal et al., 2023). According to Tien et al. (2023), the inability to pay for technological solutions was the biggest constraint of Vietnamese SMEs. It resulted in slow digital transformation and negative impacts on sustainable tourism development. The financial restriction is particularly pronounced in low-income settings where limited capital restrain investments in unnecessary technologies.

According to (2024) Eurostat data, there are large variations in AI application depending on the size of the enterprise. In Europe, for instance, 30.4 percent of large enterprises report they use AI, as opposed to just 6.4 percent of small enterprises. The gap is probably bigger in developing countries due to greater resource constraints on small and medium-sized enterprises. Ateeq (2025) asserts that to tackle these financial barriers, the focus should be on building digital infrastructure, rolling out targeted support and implementing innovative financing through public-private partnerships, development bank lending, and co-ordination of international donor.

Human Capital Deficits and Capacity Constraints

The adoption of artificial intelligence necessitates expertise in data science, software engineering, systems integration, and AI ethics. Such competencies are frequently limited within the labor markets of developing nations (Jamshed et al., 2024). Šakytė-Statnickė and Budrytė-Ausiejienė (2025) report that 59.2% of respondents support enhancing employees' technological and AI skills. However, most developing countries lack adequate systems for structured training initiatives. Skills shortages impose significant constraints on organizational performance. Customer-facing employees must be proficient in using AI tools and interpreting their outputs. Managers require an understanding of both the capabilities and limitations of AI technologies. Technical specialists are essential for implementing, customizing, and maintaining AI systems. Policymakers must possess sufficient knowledge of AI to develop regulations that foster innovation while mitigating risks. Brain drain presents a significant challenge, as many skilled professionals migrate to developed countries in search of higher salaries and better career opportunities. The loss of technical talent in South Africa, combined with reliance on foreign technology providers, restricts local innovation capacity and increases

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external dependencies. These dependencies weaken long-term competitiveness. According to Bondarenko et al., effective digital transformation requires sustained investment in education. Ongoing capacity-building in collaboration with the private sector is essential to achieving these objectives.

Ethical Concerns and Trust Deficits

Many studies show that one of the main barriers to the adoption of AI is data privacy. Ferhataj and Memaj (2025) assert that 90.8% of tourists from Albania have moderate-to-extreme concerns about the use of their data when using specific services. Moreover, 59.9% refused to use the AI-powered service if its data protection claim was said to be poor. As per the report of Šakytė-Statnickė and Budrytė-Ausiejienė (2025), the greatest challenge in the implementation of data privacy by the tourism organisation is data privacy itself.

Because regulatory frameworks were inadequate in many developing countries, a privacy and trust deficit created. The GDPR and AI Act of the European Union have relatively all-embracing governance frameworks. However, most developing countries do not have these. Such situations create governance vacuums, which erode stakeholder confidence. Lack of proper regulatory framework creates uncertainties for consumers and businesses alike. This creates a situation where businesses do not know whether they can operate there.

Bias and fairness make ethical challenges more complicated. As the datasets deployed to train AI systems are predominately Western, developing nations' cultural contexts, preferences and behaviours may be misrepresented or even not depicted at all (Mpofu, 2024). The use of AI for the people is known as digital colonialism. In other words, people who are already powerful will remain so and weaker people will become gradually powerless. Also, exposing them to more risk of AI.

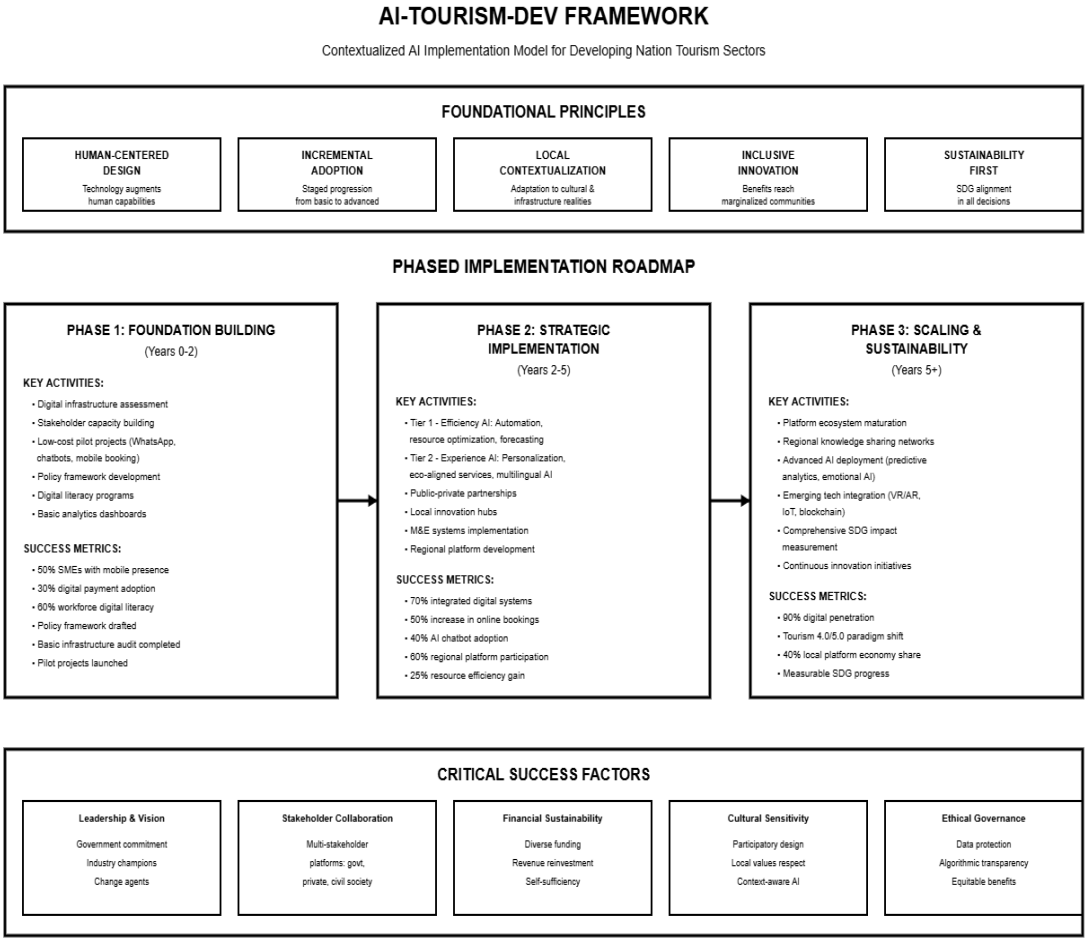
Transparency deficits further erode trust in AI systems. According to Ferhataj and Memaj (2025), 41.5% of respondents believe that AI decisions aren't transparent enough. It is often challenging to hold unidentified agents accountable for the unpredictable outcomes of complex machine learning models, which are trained on data in the real world, without the developer's knowledge. The absence of accountability is especially damaging in developing countries where there is no legal mechanism to fix negative algorithms outcomes. According to Jamshed et al. (2024), Japan shows that transparency and human-centered design are important for striking the right balance when using AI.

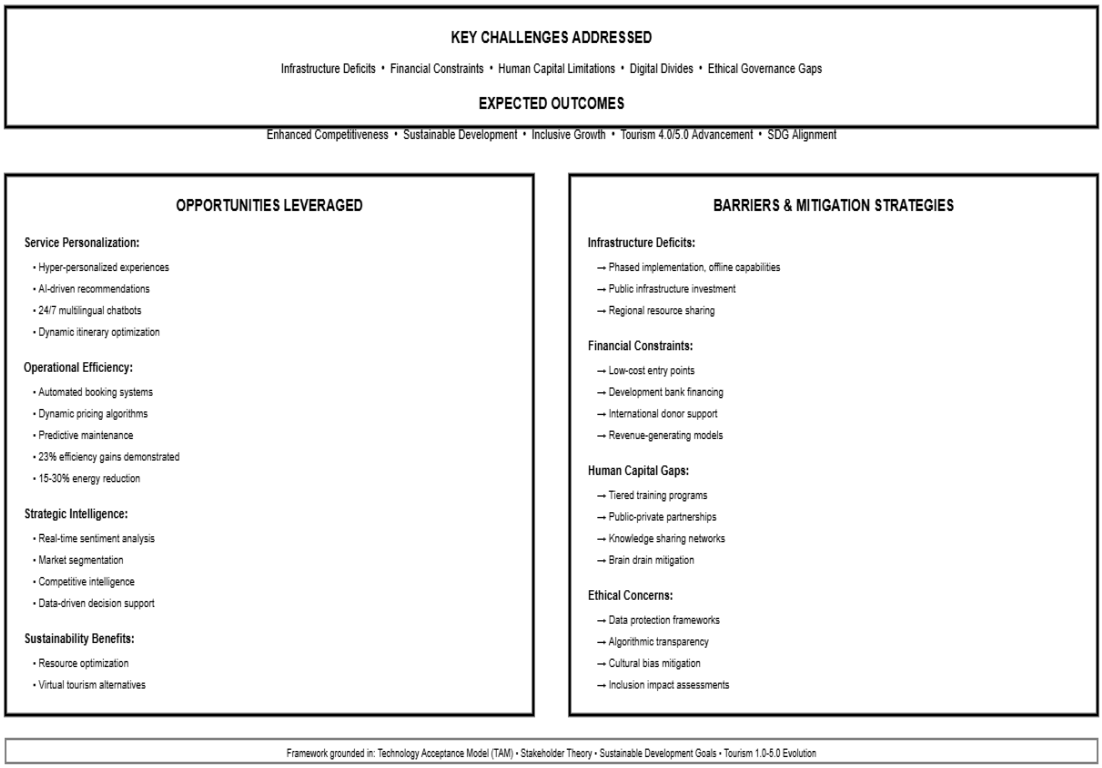
Digital Divides and Inclusion Challenges

AI can be misused to enable ever greater disparities in effects on people, cities, and communities by university vs industry; rich vs poor countries; urban vs rural; old vs young etc. These differences have important distributional impacts that need to be taken

seriously. Leka et al. (2025) note that unequal access to technology continues to exist and that the benefits are usually restricted to privileged groups unless implementation processes include measures for inclusion. These can be found especially severe in the developing world. Operators of rural tourism, who increasingly serve communities most dependent on tourism income, face the greatest adoption barriers. According to Ateeq (2025), casual labourers usually do not have the necessary resources, specialist knowledge, and institutional linkages to connect with AI. They may not benefit from the digital transformation or get excluded altogether due to this effect.

Ateeq (2025) states that priority policies for reducing the digital divide are essential for inclusion of and preventing marginalization of vulnerable groups. To achieve this, we need to support rural operators, build capacity within firms in the informal sector, and be intentional in designing AI applications that can cater to diverse levels of literacy and connectivity. In the absence of these inclusion mechanisms, existing inequalities may worsen with the adoption of AI.





Framework Foundations and Principles

Correct any grammar mistakes in this sentence without changing its meaning to 'The AI-TOURISM-DEV model was designed based on the study of key socio-economic constraint and priorities of tourism of developing nations.' The concept embraces a staged architecture that allows the responsible adoption of Artificial Intelligence in different sectors. The main concepts are based on worldwide best practices and site-specific customised changes.

A seamless human experience: Technologies and solutions must facilitate efficient and continuous human interactions. According to Jamshed et al. (2024), the balancing of technology and humans is a universal concept. This unique concept happens in both developed and developing settings. Ferhataj and Memaj (2025) point to its significance in poor countries where there is a marked preference for human-assisted service delivery, especially in complicated and emotional matters.

It starts with easy and cheap applications and is implemented in phases. Company funding limits but eventual growth in ability and confidence of all parties, thus preventing overinvestment in unproven tech. According to Bondarenko et al. (2025), small businesses can operate on platforms being able to do business without incurring significant costs

associated with infrastructure. The platform business model lowers entry barriers for new businesses.

Local Contextualization: Global technologies typically require adaptation to local culture, language, infrastructure and regulatory contexts. Research from Bondarenko et al. (2025) shows that solutions that do a good job of being culturally adapted get a 42% bump in engagement and a 56% bump in satisfaction. AI models trained in the West will need to be modified heavily to show the conditions, preferences and behaviour of people in the developing world.

Benefits should not go to influential actors. Instead, they should go to marginalized communities and small firms. Setting specific inclusion targets makes sure that the digital gap does not increase due to AI use. The principle is intended to counteract the points made by Mpofu (2024) and Leka et al. (2025) concerning unequal access and the risks of digital exclusion.

Sustainability is the key principle. We assess technology decisions based on their contribution to the Sustainable Development Goals. Artificial intelligence reduces travel through virtual experience which increase engagement in conservation management while optimally using our resources. However, intentionally designing them rather than automatically believing them to arise naturally is required (Khan et al., 2024; Rane et al., 2023).

Phase 1: Foundation Building (0-2 Years)

The first phase is concerned about enabling the basic conditions for sustainable AI adoption through a set of 04 activities. To assess the digital infrastructure of the project site, the bandwidth availability from local service providers, power availability, existing digital tools with users and total digital literacy in the final population can be examined. A diagnostic tool is provided to assess the position of organizations by Bondarenko et al. (2025). The model is evolutionary and it looks at the levels of development adopted in tourism especially between 1.0 and 5.0.

Enhancing the abilities of stakeholders entails making investments in education that provide three levels of digital literacy for frontline staff, strategy level understanding of AI for management and technical competencies for implementation specialists as a means of human capital investments, which enable the next stage of technology investments. (Bondarenko et al., 2025). Pilot Projects: Target "low-hanging fruit" applications with high payoffs but minimal technical needs and cost. For instance, booking systems that work on mobile phones such as bookings from your website and simple dashboard analytics for best fit. These pilots achieve early success which strengthens stakeholder confidence while reducing financial risk.

Policymakers should focus on the building of digital infrastructure, increasing inclusion and regulatory frameworks that enhance innovation while ensuring welfare: Ateeq (2025). This phase develops data protection guidelines, AI ethics principles, and tourism-tech partnership incentives, laying the foundation for governance. Success criteria are more than 50% of tourist SMEs having functioning mobile presence, 30% of SMEs having adopted some form of digital payment system, a minimum of 60% of the tourism workforce possessing basic digital literacy, and a policy framework established and under review.

Phase 2: Strategic Implementation (2-5 Years)

This stage focuses on expanding pilot initiatives, advancing digital integration, and strengthening established core competencies. AI adoption is structured in tiers. Tier 1, implemented during Years 2 and 3, introduces Efficiency AI to automate repetitive tasks, optimize resource allocation, improve reservation and inventory management, and forecast demand. Tier 2, active in Years 3 and 5, introduces Experience AI, which leverages consumer history for personalization, delivers environmentally aligned experiences, and addresses language barriers through multilingual AI assistants. Public-private partnerships are essential for workforce development and infrastructure investment (Bondarenko et al., 2025). Financing mechanisms include development bank loans, international donor contributions, tax incentives for digital transformation, and shared regional infrastructure such as cloud services, cybersecurity frameworks, and collaborative training centers.

Innovation hubs nationwide will support indigenous start-ups in developing solutions tailored to local needs, thereby reducing reliance on foreign technology providers. These hubs will generate employment opportunities at the intersection of technology and tourism and foster solutions that address specific local requirements. As Bondarenko et al. (2025) note, lower barriers to entry in the platform economy enable smaller enterprises to launch without significant infrastructure investment, democratizing innovation.

Monitoring and evaluation systems will assess the return on investment for digital initiatives, evaluate impacts on sustainability indicators, establish feedback mechanisms for tourists, businesses, and communities, and develop performance dashboards featuring digital maturity scorecards and Sustainable Development Goal alignment metrics (Bondarenko et al., 2025). Key success indicators include integration of digital systems by 70% of tourism businesses, a 50% increase in online bookings and revenue, 40% adoption rate of AI chatbots, establishment of a regional tourism platform with 60% market participation, a 25% improvement in resource efficiency, and digital skills training for 80% of the tourism workforce.

Phase 3: Scaling and Sustainability (5+ Years)

This advanced stage reaches a digital maturity with a continuous innovation ecosystem. This advanced stage achieves digital maturity, characterized by a continuously evolving innovation ecosystem, models that create scalable ecosystems. These scalable ecosystems have a basic configuration in which increasing the number of participants increases the value. Some common strategies that can be used for this purpose: This includes developing local/regional platforms competing with international OTAs, implementing API integrations creating unified service ecosystems, deploying advanced AI including predictive analytics and emotional AI, and integrating emerging technologies including VR/AR for cultural heritage experiences, blockchain for secure transactions, and IoT-enabled smart destinations (Bondarenko et al., 2025).

Regional knowledge sharing can be facilitated through South-South cooperation networks, digital tourism forums, and shared learning platforms that disseminate both successes and failures. Harmonizing standards for regional interoperability and establishing cross-border digital tourism corridors with unified quality frameworks will further support collective learning and capacity building.

The continuous innovation mechanism is a combination of public funds for tourism technology research, university-industry partnerships, innovation competitions, and international technology transfer. Various tourism tools open-source initiatives make proven use cases available to all (Bondarenko et al., 2025).

Impact Measurement Aligned with SDGs offers a holistic evaluation covering economic impacts (revenue growth, job creation, poverty alleviation- SDG 8), environmental impacts (carbon footprint reduction, resource conservation- SDG 12, 13), social impacts (gender equality, reduced inequalities, community empowerment- SDG 5, 10), and cultural effects (heritage preservation, authentic experiences- SDG 11). Bondarenko et al. (2025) found that territories adopting integrated approaches experienced 37% higher economic growth and 42% better social outcomes, demonstrating the value of comprehensive assessments.

Critical Success Factors

The successful implementation relies on several important factors.

The government must prioritize digital transformation as a national initiative. The government seeks assistance from champion organizations in the tourism sector to accelerate digital transformation.

Bondarenko et al. (2025) states that stakeholder collaboration is critical to success that requires multi-stakeholder platforms that bring together government (policy, infrastructure, regulation), private sector (implementation, innovation, investment), civil

society (community voice, equity advocacy), academia (research, training, evaluation), and international partners (finance, expertise, technology transfer).

Money stability: funding from different sources prevents reliance on single donors; revenue-generating digital services are put toward building the system; gradual transition from external funding to self-sustaining (Tien et al., 2023)

Participatory design processes that involve local communities, respect cultural values when introducing technology, and ensure that AI systems understand the local context and language have been shown to generate solutions that have 42% higher user engagement and 56% higher satisfaction (Bondarenko et al, 2025). A comprehensive set of regulations and practices focused on data protection and privacy, as well as algorithm transparency, bias mitigation, and the equitable distribution of benefits across society, fosters trust and ensures responsible use (Ferhataj & Memaj, 2025).

Conclusion

The tourist industries in third-world countries face many problems or challenges in using or implementing artificial intelligence. A contextual approach other than that of industrialized nations is needed. The developing world faces several challenges that stand in the way of developing AI. which include infrastructure gaps, money shortages, a lack of human capital, relative underdeveloped ethical governance, and the risk of digital divides exclusion. The AI-TOURISM-DEV methodology provides a human-centered, gradual, locally contextualized, inclusive and sustainability focus response to these challenges. The concept talks about balancing tech with human needs, adopting appropriate technologies, which are relevant to local conditions, etc. With this principle, there should be sincere pledges to assure equitable sharing of benefits. Another focus of this is exclusion of all non-supportive technology. For success, a coordinated implementation involving government, industry, civil society, academia, and foreign partners is required. Prioritize the financial sustainability of the enterprise, especially when you have various financing sources.

To be responsive to the local culture and language, the design approach must engage the local community and be respectful of cultural values. Robust frameworks for data protection, algorithmic transparency, and bias prevention can engender stakeholder confidence in ethical governance. Future research must fill critical gaps. Longitudinal studies should link short- and long-term impacts. Comparative studies should look at other stages of development. Participatory methodologies should more actively engage practitioners as co-producers of information and assessments of sustainability benefits. Research into these areas would not only enhance the theoretical basis but also lend practical support to those interested in the use of AI in developing countries while

mitigating risks. The implementation of AI in tourism industries of developing nations does not rest solely on the technology but also implementation choice, governance structure, capacity-building processes and values. The AI-TOURISM-DEV framework presents a framework for prioritising Responsible Innovation, human-centred values and sustainable development so as to help tourism.

Policy Recommendations

"Before investing in artificial intelligence, developing countries should first focus on their connectivity infrastructure, as this technology may be limiting where there is insufficient infrastructure available (Ateeq, 2025)." Policy proposals must focus on enhancing network accessibility and digital resources to a variety of underserved communities and bolster the electrification's reliability while providing targeted subsidies. Regulatory frameworks should promote innovation and protect against risks. According to researchers (2025), data privacy governance is the biggest challenge. Developing countries are advised to design data protection policies compatible with their institutional capacities and in accordance with international norms to enhance cross-border data flows. As Tien et al. (2023) noted, small- and medium-sized tourism enterprises (SMTEs) were hindered in their adoption and deployment of innovation by financial constraints. Subsidized technology access programs and adequate financing mechanisms must be set up. Public-private partnerships help to share implementation costs between government, business and international development organizations for greater financial sustainability.

Industry Recommendations.

Tourism companies must select tried and tested low-cost application technology and follow a phased implementation in which complex applications come later. The AI-TOURISM-DEV framework allows governments and stakeholders to build capabilities in phases. We should use human-centered design principles to make our choices about the use of technology and artificial intelligence, combining human judgement and empathy with the power of artificial intelligence. For instance, Japan has had success with this method (Jamshed et al., 2024). Ferhataj and Memaj (2025) found that out of 51 respondents, 51 explained that the biggest difficulty that these technology usually have is a lack of human connection because they prefer mediation to a human in complicated services. It is necessary to invest in employee development to make the most of your technology. According to Šakytė-Statnickė and Budrytė-Ausiejienė (2025), more than a half (59.2%) of the questioned tourism industry professionals claim that skills should be strengthened, although formal training has not been implemented yet. Companies should encourage learning and build on staying power for knowledge and expertise.

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Research Agenda

Brand recognition, brand loyalty and get new customers, according to my understanding, advertising is usually used for this purpose. Nevertheless, most of the current literature consists of cross-sectional studies, leading to a weak understanding implementation processes and long-term effects (Bekele & Raj, 2025). Comparative studies of countries at different levels of development, including low-income, lower-middle-income, and upper-middle-income, help clarify the incidence of economic factors on AI adoption. Such analysis provides more personalised actions. Research is often on China and Vietnam, but the issues are the least developed countries are more severe. When researchers work with tourism practitioners instead of on them, findings become relevant and applicability is high. Further, local capacity increases (Madzík et al. 2023). In developing countries where the local research is lacking, collaborative inquiry is useful. If we could assess and see the impact of deploying AIs on sustainability and how they contribute to specific SDG targets, then the now hot rhetoric of sustainability could become useful for operationalisation. According to Rane and others (2023), AI has the capability to achieve sustainability, but the translation mechanisms for tourism and empirical validation are in nascent stages.

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