

Role of Uses & its Impacts on Artificial Intelligence & Digital Skill Tools in Tourism Development

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Abstract

With the emergence of the Artificial Intelligence (AI) and the digital skills-based tools rapidly developing, the tourism industry has been changed radically in terms of destination planning, service delivery, and the entire tourism development. This paper discusses how AI and its digital skills tools are applicable in the tourism field and their outcomes and applications. Chatbots and various virtual assistants, recommendation engines, big data analytics, and virtual and augmented reality are increasingly implemented to help tourist enhance their experiences, streamline business operations, and aid in making informed decisions. The tools mentioned in the article promote customized travel, intelligent marketing, real-time information support, sustainability of destinations, and importance of digital abilities among professionals in the tourism industry including data analysis, managing AI systems, digital communication, and innovation of technologies-based services. The effects of AI introduction can be described by such improvement in tourist satisfaction, destination competitiveness, cost-reduction in operations, as well as adoption of sustainable tourism practices. Nevertheless, such issues as digital disparity, data security concerns, and ethics are critical. The study concludes that successful application of AI tools as well as the maintenance of digital skills is critical in ensuring the achievement of inclusive as well as sustainable development of tourism in a digital era.

Keywords: Artificial Intelligence, Digital Skills, Tourism Development, Smart Tourism, Sustainable Tourism

Introduction

Integration of digital technologies in the tourism industry has led to a deep transformation of the industry that has taken place over the past few years. One of them has become Artificial Intelligence (AI), which has turned out to be a key driver of change in the manner tourism products and services are designed, delivered, and experienced. The contribution of AI can be further enhanced with the assistance of similar digital skills instruments, which contribute to practices that allow the stakeholders, tourists, the service providers as well as the destination managers to keep pace with technology

changes. The effects of AI are either the improvement of customer experiences and operational efficiency or the development of new business models that can promote the growth of sustainable tourism.

Conceptual Framework of AI & Digital Skills Tools in Tourism

The concept of Artificial Intelligence is the process of imitating the capabilities of a human brain in computers that are programmed to think, learn, and act. AI in the tourism sector would involve natural language processing (chatbots and virtual assistants), machine learning (to make personalized suggestions), and computer vision (to perform smart surveillance and automate services) (Tussyadiah, 2020).

Objectives of the Study

The main objectives of the study are:

1. To explore the issue of Artificial Intelligence in the tourism sector.
2. To examine how AI-based digital skills tools can be applied to the development of tourism.
3. To determine the economic, societal, and environmental effects of AI on tourism.
4. To establish the significance of digital capabilities in the successful implementation of AI.
5. To outline weak points and future opportunities of AI-inspired tourism development.

Scope of the Study

The scope of the study is broad and interdisciplinary, covering technological, economic, and social dimensions of tourism development.

Specializes in AI application in the tourism industry: hospitality, travel agencies, destination management, and marketing.

- The role of digital skills in tourism professionals and stakeholders.
- Scans world and third world approaches to AI adoption.
- Insists on environmentally friendly and intelligent tourism.
- Does not involve fieldwork, the study is restricted to the secondary data.

Methodology

Primary and secondary data that the present study will employ as part of its data collection methods is based research because it entailed carrying out a needs analysis on-the-field on VYbrax Technology Pvt. Ltd, Madurai branch, concerning the role of AI tools and digital skills applications and their effects on the tourism development. The research problem was addressed by using a content analysis and comparative analysis approach that helped to determine trends, patterns, benefits, and challenges. Findings of different studies were incorporated to help create a general awareness of the research problem.

Digital Skills & its Tools Uses in Tourism

Enhanced Customer Experience

With the help of AI-based chatbots and virtual assistants, customers can now enjoy 24/7 customer support, get the necessary answers to their travel questions, and make a booking without a person. As an example, there are also 24/7 AI chatbots implemented by big hotel chains and airlines that have enhanced response and boosted customer satisfaction (Ivanov and Webster, 2019).

Personalization and Recommendation Systems

AI swarmed algorithms learn the preferences and behaviours of customers and past travel pattern and provide personalized suggestion of: accommodations, tours, and attractions. These personalised experiences boost customer interest and loyalty (Li et al., 2021).

Smart Destination Management

Based on AI-powered predictive analytics, destination management organizations (DMOs) can anticipate tourist demand, crowd control, as well as resource optimization. This involves dynamic pricing and demand forecasting and sustainable distribution of loads among attractions (Gretzel et al., 2015).

Digital Marketing and Promotion

Digital skills tools like social media analytics and search engine marketing platforms enable tourism businesses to target potential tourists more effectively. AI enhances campaign performance through automation and audience segmentation.

Operational Efficiency

AI helps back-end functions by automation of Monte routine functions like in processing reservations, customer feedback analysis, and inventory management. This enables the human staff to attend to high value services.

Impacts of Artificial Intelligence on Tourism Development

Economic Impacts

AI enhances profitability by saving costs as well as increasing revenue. Higher returns are contributed by dynamic pricing and effective strategies of acquiring customers. Another significant use of AI-based systems is the widening of the market to the small and medium tourism enterprises. AI enhances efficiency in operations at a low cost, and boosts the revenue generation process due to efficient demand forecasting and price determination strategies. It also helps developing tourism related startups and digital solutions which helps to develop the economy.

Employment and Skill Development

AI automatization takes away some jobs, but new workplaces with a high level of digital skills like data analysis, system management, and digital marketing require new skilled workers. This transition insists on the necessity of the skills and training of tourism workforce.

Social & Cultural Impacts

AI has captured work place transformation due to its integration. Monotonous work is being automated and jobs of high skill which are new as digital workers are in demand. This change highlights the relevance of digital skill development. AI enhances access and inclusivity through delivering multilingual services and personalized services to a variety of tourist groups. It is also used in preserving cultural heritage by digitalizing documents as well as through virtual tourism.

Environmental and Sustainable Impacts

AI can also be applied to help in sustainable tourism by enabling managing resources more efficiently, preventing unnecessary losses by streamlining their demand, and ensuring tourist traffic in eco-friendly operational planning, ensuring more accurate data insights. Intelligent systems are useful in reducing the degradation of the environment and enhancing responsible tourism.

Challenges and Risks

Although AI has good things, it also has challenges such as:

1. **Digital Divide:** The difference in technology and capabilities can also contribute to the increase of inequalities among and between regions.
2. **Data Privacy and security:** Mass data collection is one of the main characteristics of the tourism activities that raises the question about misuse and violation.

3. **Ethical Considerations:** With no proper audits, AI decision-making and automation can be biased with horrendous consequences.

The Critical Role of Digital Skills

For AI to realize its full potential, tourism professionals must possess relevant digital competencies. These include:

- Data literacy: Capacity to read and use data.
- AI System Management: Knowledge on AI application to manage and maintain.
- Digital Communication: The ways to involve audiences by using a digital platform.
- Innovation Technology: A skill to adapt and develop with the use of new tools.

Investment in education and training is the crucial element to comprehensive and inclusive benefits to realize the benefits of the digital transformation and digital inclusion and equity.

Case Examples

1. Hotel AI Chatbots Hotel brands all over the world use AI bots to facilitate the process of communication with the guests and reduce the cost of operations, manage the responsiveness of the service.
2. Online Travel Agent (OTA) Tour Recommendation Engines Travel agencies that use AI to offer individual travel services and packages are the ones that achieve higher conversions.
3. Smart City Tourism Platforms – Singapore and Barcelona use AI to track visitor numbers and provide smart transport services to tourists by improving sustainable tourism of the city.

Conclusion

AI and digital skills usage are altering the tourism industry because it has provided an excellent opportunity in interacting with customers, efficiency, and sustainable development of the destination. However, in order to realize these benefits, one must address such problems as skills gaps, data confidentiality, and equitable allocation. There should be a strategic collaboration between policymakers, industry stakeholders and learning institutions in a bid to harness the opportunities of the AI in developing inclusive tourism.

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