The Role of Tourism Startups in Enhancing the Tourist Experience through Artificial Intelligence Applications: A Study of Leading Experiences

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submitted:14/04/2026 Accepted:01/06/2026 published:30/06/2026

Abstract:

This study aims to investigate the role of tourism startups in enhancing the tourist experience through the application of artificial intelligence (AI) technologies. It focuses on how these enterprises utilize digital tools such as intelligent recommendation systems, predictive analytics, and chatbots to deliver personalized services and improve the overall customer experience. The study also examines leading global models, including Airbnb, TripAdvisor, in order to demonstrate the impact of artificial intelligence on tourist satisfaction and service quality. The findings reveal that artificial intelligence significantly enhances service personalization and operational efficiency, thereby creating a more seamless and enjoyable tourism experience. Furthermore, the study confirms that continuous innovation and adaptation to technological advancements are key determinants of the future success of tourism startups.

Keywords: Tourism Start-ups, Tourist Experience, Artificial Intelligence.

JEL Classification Codes: L83. O31. O33. M13. Z32**.**

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Introduction:

Since the beginning of the twenty-first century, the tourism industry has witnessed numerous technological advancements that have fundamentally transformed the dynamics of operations within this sector. Tourism and hospitality establishments have become increasingly interactive with customers and tourists, while modern technological tools have contributed to the provision of a wide range of new and innovative tourism services, thereby creating unique experiences for tourists. These developments have had a positive impact on the revenues of tourism service providers, as well as on increasing tourist satisfaction and loyalty.

Despite the importance of human resources as a cornerstone in service delivery in general, the adoption of modern technology has become an indispensable requirement, particularly with the increasing reliance of service sectors on technological applications in their operations. The tourism sector is considered one of the most significant service industries that depend heavily on the human element, both as a service provider and as a service consumer (the tourist). Nevertheless, the use of modern technology has substantially supported tourism service providers, especially tourism start-ups that rely on digital innovation to deliver more efficient and cost-effective services.

These start-ups have succeeded in developing tools that contribute to reducing costs and time while enhancing service quality. They have also enabled tourists to meet their needs and preferences at the right time, in the right place, and at an appropriate price. Tourism service providers, including leading tourism start-ups, strive to keep pace with advancements in information technology in order to increase sales and better satisfy the needs and expectations of both current and potential tourists.

Artificial intelligence represents one of the most prominent contemporary technological advancements. Numerous information technology companies worldwide, along with tourism start-ups, have begun offering applications based on artificial intelligence, which relies on machines' ability to perform logical reasoning, analyze data, and solve problems in a manner that simulates human cognitive processes. These technologies can be extensively utilized to process large volumes of tourism data and generate valuable insights and outcomes that support the development and performance improvement of the tourism sector. However, some researchers argue that such technological progress may

negatively affect employment opportunities in the tourism industry in the future.

Accordingly, the following research problem can be formulated:

In light of the rapid expansion of artificial intelligence technologies and their increasing adoption across service sectors, how can tourism start-ups leverage these technologies to enhance the tourist experience and achieve higher levels of tourist satisfaction?.

-Study Hypotheses

-The adoption of artificial intelligence applications in tourism startups positively and significantly contributes to enhancing the quality of the tourist experience and increasing tourist satisfaction .

-Tourism startups that implement advanced artificial intelligence tools, such as smart recommendations, predictive analytics, and chatbots, gain a competitive advantage over traditional tourism businesses in the market .

-Previous Studies

- ladislav muraa*, beáta stehlíkováb'' artificial intelligence and tourism in the eu: a data-driven analysis of adoption and economic contribution '2025' .This study examines the role of artificial intelligence (AI) in transforming the tourism sector within European Union countries. It highlights how AI enhances operational efficiency, improves cost management, and supports personalized tourist experiences through applications such as virtual assistants, chatbots, predictive analytics, and biometric technologies. Using data from the Global AI Index and tourism's share of GDP in 2019, the study applies principal component analysis and cluster analysis to explore patterns and disparities in AI adoption across EU countries. The findings reveal an uneven distribution of AI development in tourism, influenced by differences in infrastructure, human capital, policy frameworks, and commercial integration. The study concludes that effective adoption of AI can significantly contribute to intelligent and sustainable tourism development. Augustin Rina Herawati, Azaria Eda Pradana, Nur Shahirah Mior Shariffuddin'2025".

- Integrating artificial intelligence (AI) into sustainable tourism management in Indonesia and the impact on customer experience: a literature review'"This study examines the integration of artificial intelligence (AI) into sustainable tourism management in Indonesia and its impact on customer experience. Drawing on a review of academic

literature, reports, and governmental data, the study finds that AI contributes to improving operational efficiency, resource management, and service personalization through tools such as personalized recommendations and real-time monitoring. Despite these benefits, significant challenges persist, including data privacy concerns, ethical issues, and the digital divide—particularly affecting small and medium-sized tourism enterprises. The study concludes that enhanced government support, digital infrastructure development, and learning from regional leaders such as Singapore are essential to achieving responsible and effective AI adoption in Indonesia's tourism sector.

- Ghouse, Suhail Mohammad & Chaudhary, Monica (2024). Artificial Intelligence (AI) for Tourism Start-Up.« This study explores the dynamic intersection of artificial intelligence (AI) and the startup landscape within the tourism industry. It investigates how AI has the potential to revolutionize operations, innovation, and services for emerging businesses in tourism. Demonstrating AI's critical role in enhancing the tourism experience—ranging from personalized recommendations and chatbot-driven customer service to pricing optimization and demand forecasting—it showcases innovative solutions from notable startups like DeepL, Fetch.ai, and Lilium. The chapter includes brief case studies illustrating AI applications in tourism and emphasizes the pivotal role of investors in supporting these startups. It concludes by outlining future research directions, addressing strategies for maximizing AI benefits in tourism, managing privacy and security concerns, and navigating the evolving landscape of AI integration in travel.

Previous studies show that artificial intelligence contributes to improving the tourism sector by enhancing operational efficiency, personalizing tourist experiences, and supporting sustainability, while also highlighting challenges such as the digital divide, privacy concerns, and inadequate infrastructure. However, most of these studies have focused on the macro level of countries or large organizations, with limited attention given to the role of tourism startups. Therefore, this study adds academic value by focusing on how these startups utilize artificial intelligence applications to enhance the tourist experience, as well as by analyzing innovation mechanisms and presenting leading cases and practices in this field.

-Significance of the Study:

The significance of this research lies in highlighting the growing role

of tourism startups in enhancing the tourist experience through the adoption of artificial intelligence applications. Additionally, it analyzes how tourist destinations can benefit from the innovations introduced by these startups and examines the challenges associated with the widespread adoption of such technologies.

-Objectives of the Study:

The objectives of this research are as follows:

-To define the concept and significance of artificial intelligence and its role as a key driver of digital transformation in the tourism sector.

-To highlight the need for tourism startups to adopt smart technologies as a lever for enhancing service quality and improving the tourist experience.

-To review the most prominent artificial intelligence applications used by tourism startups worldwide, with a focus on leading experiences.

To derive findings regarding the challenges that hinder some tourist destinations and startups from fully benefiting from artificial intelligence technologies.

Firstly. Strategies of Tourism Startups to Enhance the Tourist Experience

Tourism startups play a pivotal role in enhancing the tourist experience by adopting innovative strategies grounded in artificial intelligence and advanced digital technologies, aiming to deliver highly personalized services and to significantly enhance customer satisfaction.

1. Tourism Startups: Definition and Key Characteristics

“Understanding and defining the concept of startups is essential for every researcher in this field, as it provides a foundation for study and analysis. It is equally crucial for policymakers in designing development programs and strategic plans aimed at clarifying the concept and characteristics of startups.

"A startup, according to the technical dictionary, is defined as a newly established small project. The term 'Start-up' consists of two components: 'Start,' indicating the initiation of an idea, and 'up,' signifying strong growth potential. The term was first used immediately after World War II, coinciding with the emergence and expansion of venture capital companies. From a scientific perspective, Rousse La defined a startup as 'an innovative enterprise operating in the modern technology sector.

Entrepreneur Steve Blank defines a startup as a temporary organization that searches for a business model allowing growth. It is flexible, repeatable, and measurable, testing different business models and gradually adapting. In other words, a startup must work quickly toward the success of its project, while being influenced by the market in which it seeks to operate immediately. The idea or vision embodies the project factor, targeting a stable or dense market for launching a new product or service. (Medfouni, 2025,p704).

Accordingly, tourism startups can be defined as innovative companies within the tourism sector that originate from a novel idea or a distinctive business model. They focus on delivering unique tourism services or experiences by leveraging digital technologies, including artificial intelligence, predictive analytics, and smart applications. These startups aim to enhance the tourist experience, improve operational efficiency, and create added value for destinations through flexibility, innovation, and rapid adaptation to market changes and customer needs.

Santos and Viollin analyzed the key success factors of tourism startups during the COVID-19 pandemic. Their analysis focused on the multiple factors that contributed to the thriving of organizations during this challenging period, highlighting core characteristics such as adaptability, technological infrastructure, and scalable business models. The researchers emphasized the importance of innovation and flexibility in navigating uncertain environments, and they underscored the potential of startups to overcome crises and reshape the industry. (Santos, 2024,p-p 49-54) .

In addition to the factors highlighted by Santos and Violin, other elements contribute to the success of tourism startups, including the ability to innovate in service delivery, the utilization of data and intelligent analytics to understand tourist behavior, leveraging social networks to engage with customers, developing a seamless and integrated digital experience, and establishing strategic partnerships with tourism and technology service providers. Moreover, reputation and customer trust, flexibility in geographic expansion, and the ability to anticipate future tourism trends play a significant role in enhancing the position of startups and achieving sustainable growth.

2. Characteristics of Tourism Startups

Tourism startups exhibit several distinctive characteristics:

-They demonstrate high flexibility and adaptability to rapid fluctuations in market demand.

-Increasingly tourists are becoming environmentally conscious, which encourages startups to integrate sustainable tourism practices into their operations.

-Technology has become a fundamental element in the tourism sector, enabling the delivery of enhanced and personalized travel experiences.

-Furthermore, technological tools have allowed tourism startups to reach broader audiences and improve communication with travelers.

Accordingly, tourism startups are characterized by their ability to adapt to market changes, a strong focus on customer experience and personalized services, commitment to innovation and strategic partnerships, an organizational culture that fosters creativity, and the capacity to attract investments to support growth and expand their service offerings.

3. The Role of Startups in Developing the Tourism Sector

The relationship between startups and tourism (Gao, Gu, Niu, & Ryu, 2022) highlights a positive link between international tourist inflows and startup financing, indicating that countries with high tourist traffic attract greater venture capital investments for startups. This effect is particularly pronounced for high-tech startups and those backed by venture capital, suggesting that tourism can broaden the investment opportunities for potential investors. Moreover, the study's findings contribute to a deeper understanding of the connection between tourism and economic growth, offering valuable insights for policymakers in both sectors. (Gao, 2022 ,P12) Startups contribute to the development of the tourism sector through: (Pavlović, 2018,P324)

3.1 Developing innovative products and services:

- ✓ Startups offer unique travel experiences that go beyond traditional tourism activities.
- ✓ They develop new applications and software to facilitate travel planning and trips.
- ✓ They innovate solutions for existing travel challenges, such as hotel bookings or complex transportation services.

3.2 Targeting specific market segments:

- ✓ Cater to the needs of specific tourist groups, such as solo travelers, families, or senior citizens.

- ✓ Develop specialized services, including eco-tourism, medical tourism, or conference tourism.
- ✓ Contribute to diversifying tourism offerings and attracting new tourist segments.

3.3 Utilization of technology:

- ✓ They employ artificial intelligence to provide personalized recommendations for travelers.
- ✓ They use augmented reality technologies to enhance the experience of exploring tourist destinations.
- ✓ They develop customer relationship management systems to improve communication and deliver better service.

3.4 Promoting Economic Development:

- ✓ They create new employment opportunities, particularly for youth in the technology and tourism sectors.
- ✓ They attract foreign investment and contribute to increasing the GDP.

Tourism startups actively contribute to the sector by offering innovative travel experiences that go beyond traditional models, addressing the needs of specific tourist segments such as families or solo travelers, and leveraging modern technologies like artificial intelligence and augmented reality to enhance the tourist experience. These startups also play a significant economic role by creating new employment opportunities and attracting investments, thereby supporting the sustainable growth of the tourism sector.

4. The Role of Tourism Startups in Enhancing the Tourist Experience

Tourism startups play a significant role in enhancing the tourist experience through digital innovation and the provision of personalized services. By combining technology and creativity, they address travelers' needs and increase customer satisfaction, thereby improving the quality of the tourism sector and promoting its sustainability, as illustrated by the following aspects:

4.1 Tourism startups hold a central role in enhancing the tourist

Experience through the adoption of digital innovations. For example, platforms like Airbnb and Klook offer personalized travel experiences by

leveraging artificial intelligence (AI) and machine learning to provide tourism recommendations tailored to the individual tourist's preferences, such as suggesting activities or restaurants that align with their previous interests. These companies also utilize data analytics to facilitate the trip-planning process, from booking accommodations to selecting tours, thereby minimizing time and effort while maximizing customer satisfaction. (Tussyadiah, 2018 ,P-P1059–1073.)

4.2 **Startups contribute to enhancing the tourist experience by employing interactive technologies** such as chatbots and intelligent assistance services. For instance, some emerging hotels in Asia utilize AI-powered robots to provide information and respond to tourists' inquiries around the clock, thereby increasing convenience and reducing issues associated with traditional communication. This technology also enables service personalization, such as adjusting room temperature or setting food preferences in advance, reflecting the individual needs of each tourist.

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4.4 **Startups in the tourism sector also play a crucial role in advancing innovative and sustainable travel experiences**. They contribute to the development of eco-friendly travel programs and community-based tourism initiatives that not only enhance the quality of the visitor experience but also promote environmental stewardship and social inclusion. For example, platforms such as **TourRadar** design and facilitate customized tours grounded in principles of responsible tourism, thereby increasing environmental awareness among tourists and encouraging more conscious travel choices. Additionally, tourism startups are instrumental in creating niche products and services that cater to specific market segments—such as health and wellness tourism, cultural tourism, and adventure tourism—thereby enriching the diversity of tourism offerings and stimulating local economic growth.

Secondly. The Utilization of Artificial Intelligence Technologies in Delivering Tourism Services

Artificial Intelligence (AI) is a key field in computer science focused on designing intelligent systems and devices capable of performing tasks with high accuracy and efficiency, simulating human intelligence. These systems can learn from experience, adapt to changing conditions, and interact with users through voice and visual interfaces. AI has become widely applied across sectors such as education, healthcare, agriculture, and industry due to its numerous benefits. In tourism, AI is particularly important for managing and analyzing large volumes of data to produce accurate and optimal results that improve operational performance and decision-making.

1. Concept of Artificial Intelligence

Artificial Intelligence (AI) refers to the ability of computers, robots, or other machines to acquire intelligence and be capable of solving problems and performing human-related tasks, such as thinking, communicating, and carrying out defined tasks and objectives. They can improve themselves through the information they have collected. Some studies suggest that the introduction of AI into the tourism sector can provide numerous social and economic benefits, enhance the quality of tourism services offered, and assist in reaching future expectations and making accurate decisions.

Artificial Intelligence consists of two words: the first, "Intelligence," refers to the ability to understand and think, while the second, "Artificial," denotes something man-made or non-natural. Thus, the concept of AI is based on enabling an artificial entity to perform human-like cognitive skills. The human mind serves as the foundation for AI technologies, as the design of AI programs and applications fundamentally relies on studying how humans think, learn, make decisions, and solve problems, and then using the insights from this study to develop AI software .(Moussa, 2019, p. 20)

Artificial Intelligence can also be defined as the capability that enables a machine to act in a manner that simulates human intelligence, or as computer programs developed to think like humans, characterized by their ability to perform various inferences and to learn from their mistakes, thereby executing tasks with high speed and exceptional proficiency. (Mohamed, 2020, pp. 22–23) .

2. The Importance of Artificial Intelligence

There are currently 3,465 companies worldwide specializing in artificial intelligence, and AI is projected to create approximately 58 million new job opportunities by 2022. Additionally, forecasts indicate

that AI could contribute up to 15 trillion USD to the global economy by 2030. (https://tinyurl.com/x9nvma6s, s.d.) .

Artificial Intelligence (AI) represents a key form of contemporary technology that the tourism sector, as a service-driven industry, can strategically leverage. Generally, services—and tourism services in particular—rely predominantly on human intervention. Service delivery may vary across different regions and between service providers, or even for the same provider over time. This inherent variability poses a significant challenge in ensuring consistency and standardization in the quality of services rendered.

The variability in service delivery may lead to several challenges, as it becomes difficult to monitor and control service performance to ensure the consistency of service standards, particularly given that production and consumption occur simultaneously. Consequently, there is a tendency to consider equipment- and technology-based services as less susceptible to variability.

Variability in service delivery may give rise to several challenges, as it becomes difficult to conduct effective monitoring and control to ensure the consistency of service standards, particularly since the processes of production and consumption occur simultaneously. Consequently, there is a tendency to regard equipment- and technology-based services as less prone to variability.

Accordingly, most service organizations have sought to reduce service variability by relying on automated services, such as replacing human telephone operators with computer-based voice systems, mechanizing a wide range of banking services, and adopting smart service approaches in fuel stations and other service environments. Therefore, service organizations, including tourism organizations, seek to reduce service variability by selecting, training, and motivating employees, as well as by replacing human labor with machines and automated systems in order to minimize human-induced variability. (Palmer, 2020 ,p05) .

Although a decline in global job demand is anticipated, it will not disappear entirely; the adoption of artificial intelligence (AI) and robotics is expected to revitalize the labor market as companies delegate less complex tasks to AI, allowing them to focus on new areas of production. Conversely, the emerging types of jobs within the digital economy will require advanced technical skills or higher cognitive capabilities, making the upskilling of the workforce crucial to managing this transition. New roles are expected to emerge across various sectors, including Algorithm Manager, AI Data Analyst, Machine Learning

Engineer, Data Coordinator, Digital Knowledge Manager, Cognitive Advertising Author, AI Systems Integration Designer, among others. (United Arab Emirates National Artificial Intelligence Program, 2021).

3. Artificial Intelligence Applications in the Tourism Sector

There are numerous applications of artificial intelligence in the tourism sector, including :(Bazzazo, 2018).

- Digitally managing heritage and cultural sites to ensure sustainability in development and operational processes.
- Providing diverse hotel designs that optimally meet tourists' needs and expectations.
- Assisting airports and airlines in enhancing service quality while improving safety and security standards.
- Expanding the concept of digital or virtual museums and increasing the use of virtual reality technologies, as well as multilingual digital tourist guides.

Artificial intelligence applications in the tourism sector are diverse, with one of the most prominent being chatbots, which are used by many tourism and hospitality establishments to provide immediate, 24/7 responses to tourists' inquiries. AI can also be employed to anticipate the tourism services a visitor may require by analyzing the establishment's database, which stores the tourist's preferences and needs from previous visits.

Moreover, artificial intelligence technologies are employed to accommodate all of a tourist's requirements during hotel reservations, including meal preferences, scheduling, room temperature, and more. Additionally, facial recognition technology is utilized to verify a guest's identity upon check-in. (Gidumal, 2020 ,p17).

In the domain of tourist guidance, artificial intelligence (AI) technologies can be effectively utilized by deploying robotic systems to perform the functions of human tour guides. These robotic guides offer capabilities that are difficult for human guides to replicate, such as multilingual communication for diverse visitors and navigation across multiple sites. Moreover, AI plays a critical role in enhancing the safety of tourist activities. For example, robots positioned in tourist locations can instantly transmit detailed information regarding accidents or disturbances to a central control unit. Consequently, AI systems at the control center can promptly respond to alerts, deliver timely assistance, and ensure the personal safety of tourists. (Zhang, 2019,p4) .

Smartphone applications represent one of the most prominent examples of artificial intelligence technologies, widely utilized by travelers and tourists when visiting various destinations. Among the

most notable of these applications is Google Maps, which enables tourists and travelers to navigate efficiently and effortlessly by providing information on traffic density, estimated travel time, as well as facilitating the discovery of nearby locations and insights about local residents.

Tuo et al. (2021) also highlighted additional applications of artificial intelligence technologies in the tourism sector, including: (Tuo, 2021)

- Numerous hotels have implemented AI-powered check-in systems capable of completing the process within 30 seconds through three sequential steps: scanning the guest's identification using a dedicated device, confirming the registration, and automatically issuing the room key.
- Leading online platforms for tourism service bookings utilize comprehensive databases containing information on service providers worldwide. These platforms employ artificial intelligence algorithms to efficiently fulfill travelers' preferences and requirements according to the criteria specified by each client.
- The 2WT smart headset represents one of the latest AI applications in the tourism sector, enabling travelers to communicate with individuals in unfamiliar languages, thereby delivering an enhanced and seamless travel experience without the need for a translator or human tour guide.

4. Applications of Artificial Intelligence in the Tourism Sector

The applications are diverse and varied, as artificial intelligence can be utilized to enhance tourist experiences and increase operational efficiency across different stages of the travel journey. The following are the primary entry points of AI in the tourism sector: (Jeong,2023) .

- **Intelligent Booking Systems:** These systems rely on artificial intelligence and advanced technologies to streamline and simplify the booking process across various sectors, particularly in tourism, transportation, and hospitality. They enable users to make instant, personalized reservations according to their needs, while also providing tailored recommendations based on travelers' or tourists' preferences. (Dimitra, 2017)
- **Price Prediction**: Applying machine learning techniques to anticipate price changes, helping tourists make better-informed decisions regarding booking times. Chatbots and Voice Assistants: AI-powered tools such as Alexa and Google Assistant provide instant responses to tourists' inquiries, including travel information, tourism recommendations, and assistance with hotel reservations. These

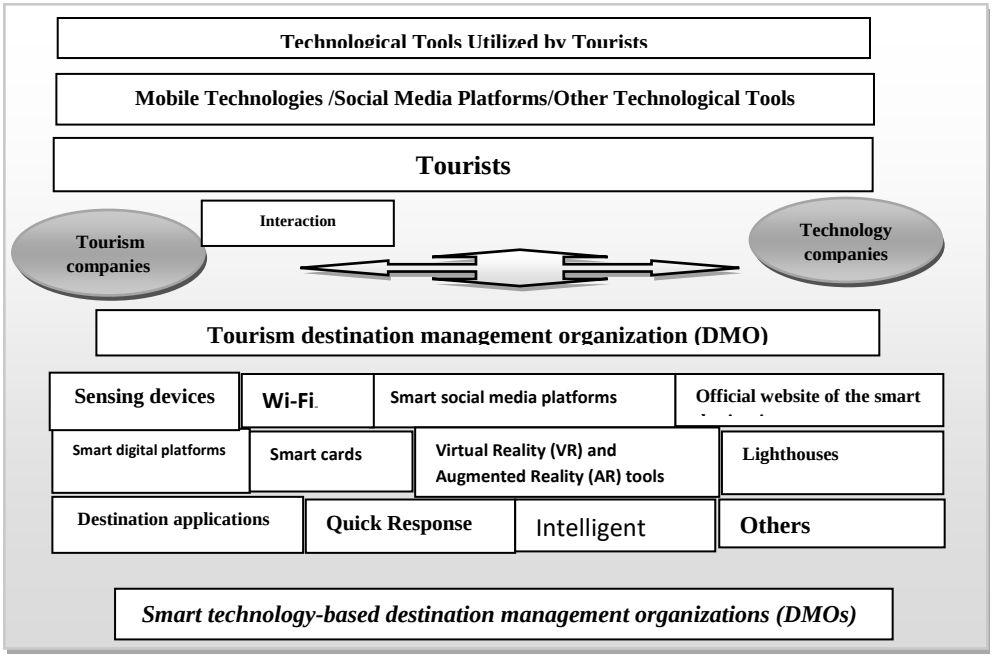
systems operate 24/7, enhancing the user experience and saving time. (Alawadhi, 2020,p32).

- **Customer Services:** Enhancing customer service by utilizing artificial intelligence to respond to frequently asked questions and resolve issues.
- Tourist Behavior: Analyzing visitor data to understand their preferences and behaviors, enabling destinations to enhance their services and overall experiences.
- Smart cities, such as Singapore and Barcelona, utilize artificial intelligence to analyze tourist flows at attractions in real time and to direct visitors to less crowded areas, thereby reducing pressure on infrastructure. This technology enhances the tourist experience and mitigates congestion at popular sites.
- Artificial intelligence can analyze users' history and behavior while browsing tourism applications to provide personalized recommendations. For instance, apps such as TripAdvisor or Google Travel can suggest accommodations, restaurants, and activities that align with the tourist's interests and budget based on their interaction history.
- Travel agencies and tourism platforms utilize artificial intelligence to analyze users' online behavior and to direct targeted marketing campaigns based on their interests and preferences. This contributes to attracting more tourists in a more cost-effective manner.
- Improving Urban Planning: The use of artificial intelligence to analyze data and enhance the management of infrastructure and public services.
- Security Monitoring: The use of artificial intelligence to analyze data from cameras and surveillance systems in order to enhance security in tourist areas. (Gretzel, 2018,p173).
- **Smart Robots**: Intelligent robots are used to provide guest reception services, food delivery, and even visitor guidance in airports and hotels. For example, at Singapore Changi Airport, robots are employed to assist tourists with navigation inside the airport, while some hotels rely on robots for room service.
- **Crisis Management**: The development of artificial intelligence systems to monitor and analyze potential crises, thereby supporting rapid and effective decision-making.
- Augmented Reality (AR) and Virtual Reality (VR) technologies are employed to enhance tourists' experiences by offering virtual tours of tourist attractions prior to visiting them. These technologies enable tourists to explore landmarks and museums interactively and

engagingly, while also providing real-time supplementary information during the tours. (Tussyadiah I. 2019 ,P39)

- These approaches contribute to enhancing visitors' experiences and improving the efficiency of the tourism sector, highlighting the significance of artificial intelligence in the future of tourism. This has led to the emergence of smart cities, which collect and distribute data from infrastructure, social networks, government resources, and human intelligence, transforming it through advanced technologies into valuable tourist experiences and offerings, with a focus on efficiency, sustainability, and enriched experiences. According to Avila, a smart city represents an innovative tourist destination that relies on the latest technologies to ensure sustainable development, enables visitor interaction with their surroundings, improves the quality of the experience and residents' quality of life, and measures the intelligence of the destination through information technology, mobile applications, business innovation, smart transportation, and clean energy. (Jabeel, 2023 ,p24)

Figure 01: Technology and Interaction Classification in Smart Tourism Destinations



Source: Samir Jbeil, Nassima Lakhdari, Smart Tourism Destinations and the Adoption of Artificial Intelligence Applications (A Case Study of Dubai), Journal of Management and Development for Research and Studies, Vol. 12, No. 01, June 2023, University of Blida, p. 349.

This can be primarily attributed to the capacity of artificial intelligence to enhance the performance of hospitality operations, with its critical role becoming increasingly apparent in recent years. AI is capable of executing tasks traditionally performed by humans at any time of day, thereby enabling hotels to achieve significant cost savings. Furthermore, it facilitates the provision of higher-quality services, minimizing human errors and improving overall service standards.

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- Artificial intelligence significantly contributes to the development of the tourism sector, which relies heavily on human labor. Since service quality can vary between individuals or over time, maintaining a consistent standard of service is challenging. AI addresses this issue by providing automated and intelligent services that reduce dependence on human interaction, such as replacing call center personnel with automated voice systems, and automating banking services and fuel stations. This approach helps ensure greater consistency in service quality and enhances operational efficiency within tourism organizations.

Thirdly. Applications of Artificial Intelligence in Emerging Tourism Enterprises and Their Role in Advancing Tourism Services

Artificial intelligence serves as a key driver for the development of emerging tourism enterprises, as it is leveraged to create intelligent services that enhance the quality of the tourist experience. By examining models of startups that have implemented these technologies, their role in improving service quality, increasing the efficiency of the tourism sector, and enhancing the overall tourist experience can be highlighted.

1. Airbnb Case Study

Founded in 2008 in San Francisco, Airbnb has become a global phenomenon the growing popularity of which has been reported and boosted by the global media. The business press and economic columnists in particular have celebrated it as ‘the most prominent example of a huge new “sharing economy”’ . Airbnb has been widely acknowledged for its contribution to this rising new economic paradigm

and, more concretely, its capacity for quietly turning millions of people into part-time entrepreneurs. As its relevance and impacts at the local level grow, the debate also starts embracing the legal and social issues related to the application of the Airbnb model in the tourist field. (Airbnb, 2024).

Since its establishment in 2008, Airbnb became one of the largest online accommodation providers and an epitome of platform economy. It offers for rent more than 7 million homes, apartments and rooms in almost all countries. The platform has gained public and scholarly attention due to its disruptive effects on hospitality industry, impacts on housing markets, and legal conflicts over housing, taxation and consumer regulations. (https://doi.org/10.1080/1368350., 2019) Researchers tend to identify Airbnb as a qualitatively new form of accommodation, associating it with peer-to-peer rental of flats or rooms by non-commercial providers through direct interaction.

However, Airbnb does not own the rooms or the property listed on its webpage. It operates as a peer-to-peer platform for vacation rentals, enabling secure transactions between hosts and guests. It thus allows people to make money from renting out a spare room. In other words, the company proposes itself as a necessary intermediary between strangers for building up trust between them, a critical principle of collaborative consumption (or a sharing economy). Airbnb perfectly exemplifies what Germann Molz (2011) defines as 'network hospitality' – the way a new generation of travellers turns to online network systems to connect with other members offering accommodation 'as well as to the kinds of relationships they perform when they meet each other offline and face to face'. Staying in a private dwelling with the co-presence of non-professional hosts would be seen as an opportunity for the tourist to create new ties with locals, 'engaging in very close, oftentimes intimate face-to-face relationships, (Bialski, 2012,p125) these reports argue that the Airbnb model promotes a more suitable form of tourism, more respectful and compatible with citizens.

Founded in 2008 in the United States, the company is a global startup operating in the ourism and hospitality sector. It functions as an online platform that connects hosts who offer rental accommodations (apartments, houses, and rooms) with travelers seeking short-term lodging. Airbnb has become one of the most prominent examples of the sharing economy in tourism, as it enables individuals to monetize their real estate assets and generate additional income, while providing travelers with diverse and personalized accommodation options, often at

lower prices than traditional hotels The company operates by: (Calatayud M., 2020).

- ✓ Developing a user-friendly digital platform for booking and management.
- ✓ Enabling the sharing economy by connecting millions of users worldwide.
- ✓ Offering local tourism experiences (Airbnb Experiences), such as guided tours and cultural and artistic workshops.
- ✓ Utilizing artificial intelligence technologies to provide personalized recommendations for travelers, thereby enhancing the experience of both guests and hosts**.**

Airbnb has several competitors on the global market but particularly important is the competition with Chinese platforms due to the size of the largest tourism market, and the partial separation of Chinese internet economy from global firms. Even though Airbnb has adhered to Chinese internet regulations and considers China as the principal market for future expansion, it faces strong native competition of Tuija and Xiaozhu platforms. (Soo, 2019).

2. Types of accommodation sold by Airbnb

Airbnb's market success is based on the creative development of a few recent ideas of tourism accommodation distribution. First, like online travel agencies (e.g. Booking.com), Airbnb exploits a two-sided market model, where platform attracts both providers of accommodation and tourists. Dvantages of flexibility, efficient mechanisms of risk mitigation, transaction handling and micro-segmentation enabled Airbnb to quickly increase the base of customers on both sides and leverage positive network effect, Airbnb entered the growing market of holiday rental of homes and apartments, previously concentrated in coastal and mountain resorts, and since the 1990s utilizing online rental platforms (e.g. Vrbo). Airbnb's innovation was the introduction of internet-mediated short-term rentals to the cities. Finally, Airbnb's development coincided with the spread of the idea of the sharing economy, implemented by non-profit online hospitality networks such as HomeExchange or Counchsurfing By emphasizing personal character of transactions and the use of underutilized assets, Airbnb marketed itself as providing more authentic, diverse, inclusive and sustainable tourist services than hotels. The platform used the same sharing narrative to present its use as a new form of economic activity, which should not be subject to existing regulations on hospitality industry and housing market.(https://www.tandfonline.com/doi/full/10., 2019).

The company relies on machine learning algorithms to analyze users' behavior and preferences in order to provide personalized recommendations for accommodation options and tourism activities. Artificial intelligence is also employed in automated pricing evaluation, search optimization, and the detection of fake or inappropriate content, thereby enhancing security and trust within the platform. Furthermore, AI contributes to improving communication between hosts and travelers by suggesting predefined messages and providing rapid support services, making the travel experience smoother and more comfortable. (Camatti, 2024,p21) Heo and Blengini looked for the factors affecting the numbers of listings in almost 100 capital cities of the world. They concluded that the presence of Airbnb correlates with high level of technological development of the country and high share of tourism in country economy. However, the use of simple regression might have obscured impact of collinear predictors, particularly the level of economic development which is correlated to the level of information and communication development. In the current study, the limitations of that study are addressed by using country-wide Airbnb data and principal component regression.

Active Airbnb listings are most numerous in regions where the platform started its global expansion: North America and Europe (Figure 2). United States with 624 thousand active listings accounts for 17.4% of the global offer (Figure 3, upper graph), followed by France and China. Europe concentrates nearly half of Airbnb supply. Other large Airbnb markets are countries of East Asia, Oceania, South and Central America. The platform is relatively little active in Africa (apart from South Africa and Morocco) and Middle East.

Figure 2. Distribution of active listings in 167 countries.

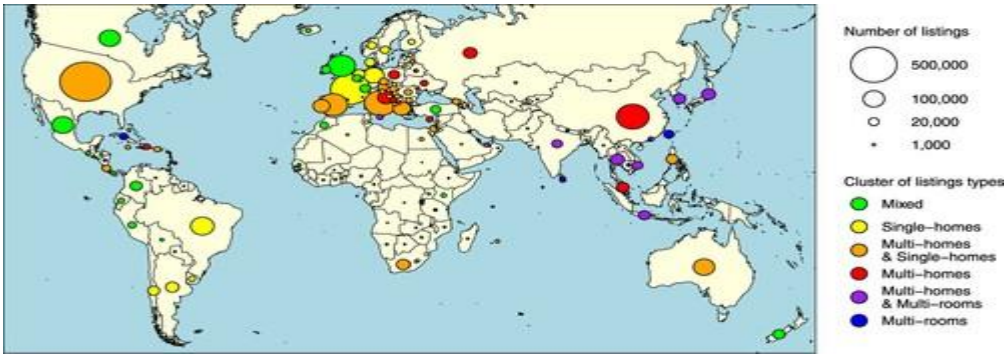
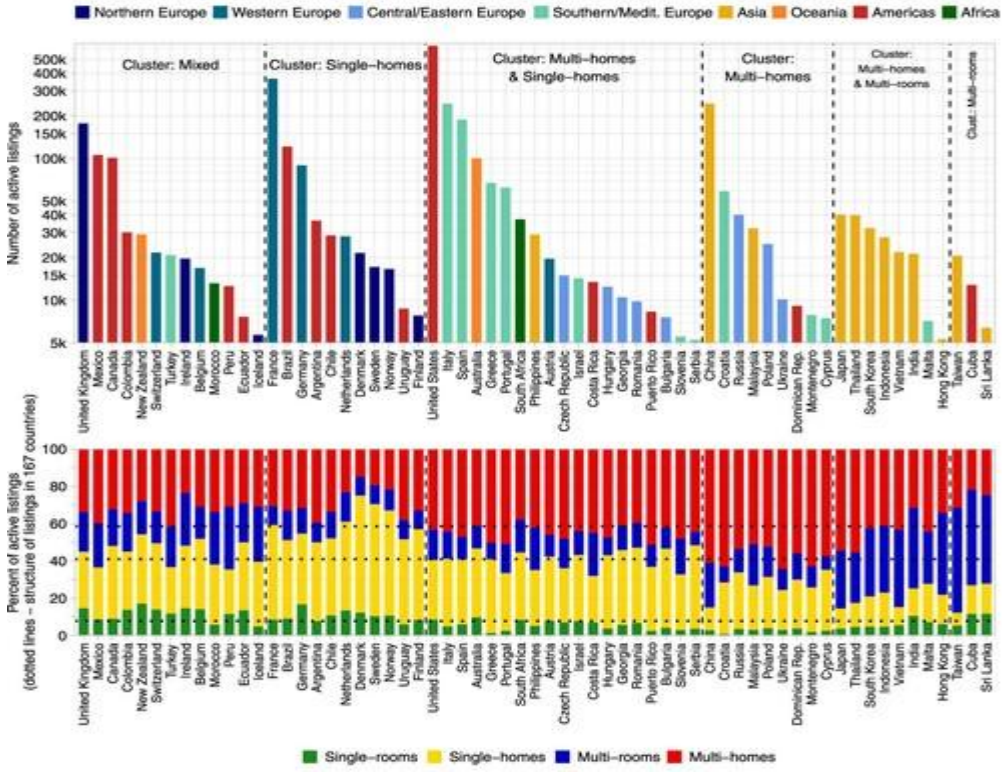


Figure 3 : Number and structure of active listings in 63 countries with more than 5000 active listings.



3. **GetYourGuide** is a German travel technology startup Headquartered in Berlin. The platform enables users to search for and book tours, activities, and tickets for tourist destinations worldwide. Founded by Johannes Reck and Martin Sopper, the company employs between 501 and 1,000 people. The platform provides customers with access to over 60,000 travel experiences globally and collaborates with more than 12,000 suppliers worldwide.

GetYourGuide was founded in 2009 and has since raised over USD 190 million in unding from leading investors such as Battery Ventures, KKR, and Insight Venture Partners. The company is considered one of the fastest-growing travel technology firms in Europe, focusing on providing enjoyable and efficient travel experiences for travelers by offering a wide range of activities to choose from, along with detailed information about the experiences and tourist destinations. The platform also supports instant payment through various electronic cards to facilitate the booking process for users.

4. TripAdvisor

TripAdvisor is a leading American travel and technology company, founded in 2000. It is one of the largest global platforms for travel reviews and ratings of hotels, restaurants, and tourist activities. The company enables users to search for travel destinations, read experiences shared by other travelers, and book hotels, trips, and tourist activities directly through its website or mobile application. early on TripAdvisor opened itself up to and was able to generate profits by becoming an advertising platform for big tourism companies. These entities bid for the attention of TripAdvisor's user base. TripAdvisor as platform and multisided market thus assembles a specialised touristic service and becomes embedded in diverse tourism landscapes, bringing several different types of actors and their wills together, and in doing so governs these interrelationships and the spaces they traverse.

When TripAdvisor was launched in 2000 as a travel search engine, the company was concerned with amassing the 'official words from guidebooks' newspapers, magazines, and other travel media, attempting to make these accessible based on the specific places referenced. Here, developers generated 'place pages' for an array of points of interest (POIs). They also included a button which read 'add your own review', a feature which was so popular that TripAdvisor pivoted and began developing the platform in ways that centred this content. For example, starting in 2005, TripAdvisor began ordering these 'place pages' based on its own users' ratings/reviews, instead of external web references. (https://www.bbc.co.uk/programmes/).

However, TripAdvisor is not just an interactive spatial informational resource, but a digital platform and 'multi-sided market' in which 'different types of participants trade their interests under a set of rules and conditions which are shaped by the nature of each platform (type of product or service traded) and the ways it is governed (platform owners) The company has undertaken the following initiatives: (TripAdvisor, 2014)

- Acquisition of Viator: In 2014, TripAdvisor acquired Viator, a platform specializing in tours and tourist activities. This acquisition allowed TripAdvisor to expand its "Experiences" offerings and enabled users to book tours and attractions directly through the platform.
- **Advertising and Business Partnerships**: The company relies on advertising and sponsored

- listings to generate part of its revenue. It also maintains partnerships with numerous businesses, including hotels, tourist destinations, and agencies, to increase the reach of its content through tools such as TripAdvisor widgets, which companies can embed on their websites.
- **Viator Experiential Tourism Platform**: Viator allows users to book a wide range of tourist activities, offering thousands of tours and experiences worldwide. TripAdvisor generates revenue from these bookings through commissions from local providers.
- **Restaurant Booking Platform – TheFork**: TripAdvisor also owns
- TheFork, a restaurant reservation platform that enables users to book directly at restaurants while providing tools for restaurants to manage reservations and enhance their visibility.

By January 2012, Airbnb bookings and listings had grown tenfold, spreading rapidly beyond the United States. By August 2016, more than 2 million Airbnb listings were located in 34,000 cities and 191 countries across the world with the highest numbers concentrated in Paris, France (78,000), London, United Kingdom (47,000), New York (46,000), Rio de Janeiro, Brazil (26,000), Los Angeles, California (23,000), and Sydney (more than 20,000 by August 2016; McCarthy, Airbnb's property and room listings now rival the world's largest hotel firms & Byers, although its assets remain dispersed and virtual.

5. HolidayMe :

is an emerging travel agency specializing in providing travel packages and deals for destinations worldwide? Founded in 2012 in Dubai, United Arab Emirates, the company offers a wide range of travel products and services, including flights, hotels, car rentals, and tourist activities. HolidayMe primarily focuses on the Middle Eastern market, while also offering travel packages for global destinations. The company's website is available in multiple languages, and it also provides a mobile application that facilitates booking and allows users to explore available options. The company has undertaken the following initiatives: (https://www.holidayme.com).

-Secured Significant Funding: HolidayMe raised USD 16 million in a Series C funding round from investors such as Accel, Algebra, and Gobi.

-Received Multiple Awards: The company has won several awards, including "Startup of the Year" from Entrepreneur Middle East and "Online Business of the Year."

-Transitioned to a B2B Model: In 2024, HolidayMe was relaunched as a company providing solutions for travel agencies and service providers

through tools such as APIs, dynamic package building, and white-label platforms.

-Offers an Advanced Technological Platform: HolidayMe provides access to over 1 million hotels worldwide, more than 400 airlines, and customized solutions for creating travel package.

Emerging tourism companies such as GetYourGuide, TripAdvisor, Airbnb, and HolidayMe focus on enhancing the tourist experience by integrating technology and artificial intelligence. They offer flexible and diverse booking platforms that facilitate access to tourism services, including hotels, activities, and tickets, while providing personalized recommendations for each traveler based on their preferences and behavior. These companies also contribute to improving operational efficiency within the tourism sector, support innovation in trip and destination management, and attract substantial investments while expanding their markets globally.



Conclusion:

Today, emerging tourism enterprises are considered among the most dynamic components of the modern economy, offering innovative and flexible models to address growing developmental challenges, particularly in the context of rapid digital transformation and the transition toward a knowledge-based economy. In this regard, artificial intelligence represents a forward-looking trend shaping a new global paradigm driven by scientific and technological advancement. This evolution calls for creative innovators, entrepreneurs, and all actors committed to progress and development to enhance human well-being and improve the quality of experiences, especially in tourism services such as travel and hospitality. As artificial intelligence continues to advance rapidly, securing a competitive position in this field has become essential. Overall, the following conclusions have been reached:

- Implementing artificial intelligence applications in the tourism sector represents an investment in the future of travel, ensuring more enjoyable and enhanced travel experiences for travelers worldwide.

- AI applications in tourism are not limited to a specific segment of the industry but extend across all sectors, including travel companies, hospitality establishments, airlines, and others.
- Artificial intelligence enables organizations to provide personalized services based on travelers' preferences and interests, thereby increasing satisfaction levels and creating positive impressions.
- The use of AI technologies helps improve the management of bookings, transportation, and tourist activities, reducing errors and saving time.
- Through technological innovation and data-driven approaches, these emerging tourism enterprises are able to offer non-traditional services and experiences that distinguish them from conventional competitors.
- Artificial intelligence tools provide precise and rapid analytics, enabling emerging tourism enterprises to adapt efficiently to changing market conditions.
- The adoption of artificial intelligence by these emerging tourism enterprises contributes to integrating the tourism sector into the knowledge-based economy and supports the digital transformation of the industry.

Recommendations:

- A robust digital infrastructure, including high-speed networks, databases, and cloud computing systems, should be established to ensure the effective implementation of AI applications and to provide tourists with a seamless and continuous experience.
- It is essential to utilize AI tools to analyze tourist behavior and needs while ensuring privacy and personal data protection, enabling the delivery of customized services without compromising customer trust.
- The capabilities of tourism teams should be developed to effectively use AI technologies, including training staff on data analysis, operating intelligent applications, and understanding how to integrate technology effectively with the tourist experience.
- Emerging tourism enterprises should adopt modern artificial intelligence (AI) solutions, such as personalized recommendation systems, big data analytics, and intelligent assistants, to tailor the

tourist experience according to individual preferences, thereby enhancing customer satisfaction and fostering loyalty.

- It is essential to establish a robust digital infrastructure, including high-speed networks, databases, and cloud computing systems, to ensure the effectiveness of AI applications and provide tourists with a seamless and continuous experience.
- Utilizing AI tools to analyze tourist behavior and needs while respecting privacy and data protection is crucial, as this enables the delivery of personalized services without compromising customer trust.
- The capabilities of tourism teams should be developed to effectively leverage AI technologies, including training staff in data analysis, operating intelligent applications, and understanding how to integrate technology effectively with the tourist experience.

List of references:

1. Alawadhi, R., & Abu Latifa, D. (2020). The impact of employing artificial intelligence on the development of administrative work in light of governance principles: A field study on Palestinian ministries in the Gaza Governorates. Proceedings of the First International Conference on Information Technology and Business, University of Gaza.

2. Bazzazo, I. (2018). Artificial intelligence techniques in the international tourism industry. Al-Masalla Newspaper.

3. Bialski, P. (2012) Becoming Intimately Mobile. Frankfurt: Peter Lang.

4. Calatayud J.M. Airbnb flats become long-term rentals in coronavirus fix. 2020. https://euobserver.com/coronavirus/148035.

5. Camatti, N., di Tollo, G., Filograsso, G., & Ghilardi, S. (2024). Predicting Airbnb Pricing: A Comparative Analysis of Artificial Intelligence and Traditional Approaches. Computational Management Science, 21.

6. Dimitra, S. (2017). The impact of Artificial Intelligence in Tourism Industry: A Systematic Literature re-view. A thesis submitted for the degree of Master ofScience (MSc) in E-Business and digital marketing, SCHOOL OF SCIENCE & TECHNOLOGY. THESSALONIKI (GREECE).

7. Gao, X., Gu, Z., Niu, S., & Ryu, S. (2022). Effects of international tourist flow on startup financing: Investment scope and market potential perspectives. SAGE Open, 12(04.

8. Gidumal J. (2020) Impact of Artificial Intelligence in Travel, Tourism, and Hospitality. In: Xiang Z., Fuchs, M., Gretzel, U., Höpken W. (eds) Handbook of e-Tourism. (pp. 1 – 20), Springer, Cham.

9. Gretzel, U. (2018). From smart destinations to smart tourism regions. Investigaciones Regionales-Journal of Regional Research(42),.

10. https://doi.org/10.1080/13683500.2019.1696758.

11. ing, M., & Soo, Z. (2019, March 29). Airbnb complies with China law to hand over guest details as listings double. South China Morning Post. Retrieved

from https://www.scmp.com/tech/article/2139526/airbnb-complies-china-law-hand-over-guest-details-listings-double.

12. Jabeel, S., & Lakhdari, N. (2023). Smart tourism destinations and the adoption of artificial intelligence applications: A case study of Dubai. Journal of Management and Development for Research and Studies, 12(01), 349. Blida University.

13. Jeong, D., Shin, D., & Lee, S.. Real-time context-aware recommendation system for tourism. Sensors2023, 23(7), 3679. https://doi.org/10.3390/s23073679.

14. Medfouni, Hind (2025). The Role of Startups in Developing the -Tourism Sector: A Study of Models and Their Impact on the Travel Experience. Journal of Finance and Business Economics, 10(1). El Oued, Algeria.

15. Mohamed, Asmaa, & Mohamed, Karima (2020). Applications of Artificial Intelligence and the Future of Educational Technology. Arab Group for Training and Publishing, Cairo .

16. Moussa, Abdullah, & Belal, Ahmed (2019). Artificial Intelligence: A Revolution in Contemporary Technologies. Arab Training and Publishing Group, Cairo.

17. Palmer, Adrian. (2020). Principles of Services Marketing. Translated by Ali Saleh, Rabee Shaheen, and Doaa Sharraqi. Nile Group for Publishing, Cairo.

18. Pavlović, N., & Čelić, I. (2018). Components of Smart Tourism. he Third International Scientific Conference "Tourism in Function of Development of the Republic of Serbia – Tourism in the Era of Digital Transformation", Vrnjačka Banja, 3 (01).

19. Saber Yahya Marzouki , (2020). The impact of artificial intelligence technologies on enhancing the quality of tourism services: Application to the tourism sector in the Arab Republic of Egypt. International Journal of Heritage, Tourism, and Hospitality (IJHTH), 51(3, Special Issue), 29. Faculty of Tourism and Hotels, Fayoum University.

20. Santos, V., & Violin, F. L. (2024). Factors for the Success of Tourism Startups During Pandemic: multi-case analysis. Applied Tourism, 9(1).

21. TripAdvisor. (2014). Annual report 2014. TripAdvisor, Inc. Retrieved from https://www.annualreports.com/HostedData/AnnualReportArchive/t/NASDAQ_TRIP_2014 https://www.holidayme.com.

22. Tuo, Y., Ning, L. and Zhu, A. (2021). "How Artificial Intelligence will Change the Future of Tourism iIndustry: the Practice in China, In: Wörndl, W., Koo, C., and Stienmetz, J. (Eds), Information and Communication Technologies in Tourism 2021: Proceedings of the ENTER 2021 E Tourism), Springer, Switzerland .

23. Tussyadiah, I. P., & Miller, G. AI technologies for tourism: A state-of-the-art review. Journal of Hospitality and Tourism Management.2019. https://doi.org/10.1016/j.jhtm.2019.03.001.

24. Tussyadiah, I. P., & Park, S. (2018). Consumer evaluation of AI service agents in hospitality. In Information and Communication Technologies in Tourism 2018 , Springer, Cham.

25. Tussyadiah, I., & Park, S. (2018). Tourism experience and technology: The role of digital platforms. Journal of Travel Research, 57(8), 1059–1073.

26. United Arab Emirates National Artificial Intelligence Program, 2021.

27. Unravelling Airbnb: Urban Perspectives from Barcelona Albert Arias Sans and Alan Quaglieri Domínguez.

28. Zhang, L., and Sun, Z. (2019), The Application of Artificial Intelligence Technology in the Tourism Industry of Jinan, Journal of Physics: Conference Series, 1302 (3).
29. https://tinyurl.com/x9nvma6s, 2021.
30. https://www.bbc.co.uk/programmes/b04l3cmq(open in a new window).
31. https://www.tandfonline.com/doi/full/10.1080/13683500.2019.1696758.