

Digital Tourist Destinations as a Mechanism to Support the Tourism Sector: A Study in Light of International Experiences and Potential Application in Algeria

-Dalel ikram Boumezoued¹: PhD student, University of Tlemcen, Algeria

-Fadia Djebbari²: Associate Professor (Class A), University of Tlemcen, Algeria

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Abstract:

This study examines international digital tourism experiences, focusing on the Dubai 360 and Virtual Kyoto models, to assess their applicability in Algeria. Using a descriptive-analytical approach, it evaluates Algeria's natural and cultural resources for developing innovative digital tourist destinations. Findings indicate that digital tourist destinations enhance accessibility, improves visitor experiences, and promotes sector sustainability, yet faces challenges such as limited infrastructure, low investment, and a shortage of specialized expertise. International cases highlight the value of artificial intelligence, big data, and interactive technologies for immersive experiences. Algeria's rich natural and heritage assets provide a foundation for a competitive digital tourism model. The study recommends strengthening digital infrastructure, fostering investment, building digital skills among tourism professionals, and adopting innovative strategies to market digital tourist destinations to ensure the sustainability of the tourism sector.

Keywords: Digital tourism, digital tourist destinations, Algeria, Dubai 360, Virtual Kyoto.

Jel Codes Classification : Z32 .

1 - **Dalel ikram Boumezoued**, MECAS, dalelikram.boumezoued@univ-tlemcen.dz

2 - MECAS, fadia.djebbari@univ-tlemcen.dz

المقاصد السياحية الرقمية كآلية لدعم القطاع السياحي: دراسة في ضوء التجارب الدولية وإمكانات التطبيق في الجزائر

– دلال إكرام بومزود¹: طالبة دكتوراه، دامتة تلمسان، الجزائر

– فادية جباري²: أستاذة محاضرة "أ"، جامعة تلمسان، الجزائر

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ملخص:

هدفت الدراسة إلى تحليل التجارب الدولية في السياحة الرقمية واستكشاف إمكانية تطبيقها لدعم القطاع السياحي في الجزائر، مع التركيز على نماذج دبي 360 وكيوتو الافتراضية. اعتمدت الدراسة المنهج الوصفي-التحليلي لتقييم إمكانات المقومات الطبيعية والثقافية الجزائرية لتطوير مقاصد رقمية مبتكرة. أظهرت النتائج أن المقاصد السياحية الرقمية توسع الوصول إلى الوجهات، تحسن تجربة السائح، وتعزز استدامة القطاع، لكنها تواجه تحديات مثل ضعف البنية التحتية، محدودية الاستثمارات، ونقص الخبرات المتخصصة. أكدت التجارب الدولية أهمية دمج الذكاء الاصطناعي والبيانات الضخمة والتقنيات التفاعلية لضمان تجربة سياحية غامرة. وتشير الدراسة إلى أن الجزائر تمتلك مقومات طبيعية وتراثية تؤهلها لتطوير نموذج رقمي سياحي يعزز تنافسيتها، رغم العقبات القائمة. وتوصي الدراسة بتعزيز البنية التحتية الرقمية، تشجيع الاستثمارات، تطوير المهارات الرقمية للعاملين، وتبني استراتيجيات مبتكرة لتسويق المقاصد السياحية الرقمية بما يضمن استدامة القطاع السياحي.

الكلمات المفتاحية: سياحة الرقمية، مقاصد سياحية رقمية، الجزائر، دبي 360، Virtual Kyoto.

تصنيف جيل: Z32.

¹- دلال إكرام بومزود، مخبر MECAS، dalelikram.boumezoued@univ-tlemcen.dz

²- مخبر MECAS، fadia.djebbari@univ-tlemcen.dz

Introduction:

The global tourism sector is undergoing rapid transformation driven by the digital revolution, where modern technologies have become pivotal in shaping promotional strategies and enhancing the competitiveness of tourist destinations. Digital tourist destinations have emerged as a key outcome of this transformation, providing virtual spaces that allow tourists to explore destinations, interact with them, plan trips, make reservations, and even experience near-realistic environments through virtual and augmented reality technologies. This shift has positioned digitalization as a strategic pillar for the global tourism sector, particularly as consumers increasingly rely on digital platforms for travel information and decision-making.

Global crises, notably the COVID-19 pandemic (2020–2022), further emphasized the urgent need for digital solutions in tourism. Digital tourist destinations served as alternative tools to maintain destination visibility despite travel restrictions. Several countries have pioneered in this field, such as the Dubai 360 platform in the UAE, which offered virtual tours of the emirate's landmarks, and the Virtual Kyoto project in Japan, which enabled digital exploration of the city, alongside numerous European initiatives that maintained tourist engagement despite physical visit interruptions.

In Algeria, tourism represents a vital avenue for diversifying the national economy amid challenges related to reducing dependence on hydrocarbons. Despite possessing rich natural, cultural, and historical resources, the sector's contribution to development remains below expectations due to the lack of effective promotional strategies and limited digital investment. This underscores the need to explore the potential of digital tourist destinations as an innovative mechanism to support Algeria's tourism sector by learning from successful international experiences and adapting them to the local context.

Research Problem:

Despite the tangible successes of several international digital tourism experiences, which have enhanced destination competitiveness at regional and global levels, Algeria's tourism sector still faces multiple challenges hindering its effective integration into this trend. These challenges include limited digital infrastructure, insufficient investment, and a lack of awareness of the importance of digitalization in supporting tourism. The core research problem, therefore, is to investigate how digital tourist destinations can serve as a strategic mechanism to support and develop Algeria's tourism sector in light of lessons learned from successful international experiences. This can be framed as the following research question: *To what extent can digital tourist destinations be implemented in Algeria to support the tourism sector, considering international experiences?*

Study Objectives:

- To clarify the concept of digital tourist destinations and their theoretical and practical dimensions.
- To highlight lessons learned from international experiences in this field.
- To analyze the current state of digital tourism in Algeria and identify strengths and weaknesses.
- To explore the potential of employing digital tourist destinations as a mechanism to support Algeria's tourism sector.

- To propose practical recommendations for implementing this approach.

Significance of the Study:

This study contributes to:

- Enriching the literature on digital tourism and digital tourist destinations in the Arab and Algerian contexts.
- Assisting stakeholders in Algeria's tourism sector in adopting modern digital strategies.
- Supporting Algeria's efforts to diversify the national economy through tourism development.

Study Boundaries:

This study is framed within specific spatial, temporal, and thematic boundaries to maintain clarity of analysis and methodological consistency.

The spatial scope of the study focuses on the tourism sector in Algeria as the main context of analysis. Selected international experiences, particularly Dubai 360 and the Virtual Kyoto project, are considered for comparative purposes in order to draw relevant lessons and benchmarks applicable to the Algerian context.

In terms of temporal scope, the study reviews relevant literature published between 2008 and 2024. The analytical discussion primarily addresses the period from 2020 to 2025, which represents a phase of accelerated digital transformation in the tourism sector following the COVID-19 pandemic and the emergence of new digital tourism practices.

Regarding the thematic scope, the study is confined to examining digital tourist destinations as a strategic approach to supporting tourism development, with a particular focus on sustainability, destination competitiveness, and digital innovation.

Previous Studies

Recent literature has increasingly focused on digital, smart, and virtual tourist destinations, highlighting their role in enhancing tourism sustainability, competitiveness, and destination management through advanced digital technologies.

El Archi et al. (2023) conducted a systematic review of studies addressing smart tourist destinations within the framework of sustainable development. The review analyzed prevailing research trends, methodological approaches, and key thematic orientations, emphasizing the role of smart cities, green information technologies, and intelligent energy systems in mitigating the environmental impacts of tourism and supporting the Sustainable Development Goals (SDGs). Although the study provides a comprehensive overview of global academic directions, it remains limited to international literature and does not examine national implementation contexts, thereby underscoring the need for empirical research in countries such as Algeria.

Zeqiri et al. (2023) examined the transformative role of digital platforms in tourism development through the integration of Industry 4.0 technologies, including artificial intelligence, big data, blockchain, virtual reality, and the Internet of Things. The study proposed a conceptual framework encompassing digital innovation, automation,

sustainability, and data governance. The findings highlighted the potential of digital platforms to enhance service personalization, operational efficiency, and sustainable tourism development. However, the study remained largely conceptual, which reinforces the relevance of the present research in assessing the practical feasibility of applying these digital mechanisms within the Algerian tourism sector.

El Archi et al. (2022) explored the relationship between digitalization and sustainability in tourist destinations using a bibliometric analysis of studies published between 2012 and 2022 in the Scopus database. The study revealed a growing academic interest in smart tourism, big data, and digital marketing as tools for promoting sustainable destinations, while also identifying challenges related to the digital divide, data privacy, and stakeholder coordination. Despite its analytical contribution, the study focused on global trends without addressing country-specific contexts, leaving room for further investigation at the national level.

Bouchnin (2022) investigated the role of virtual tourism in promoting Algerian tourist destinations during crisis periods, using the COVID-19 pandemic as a case study. Based on a descriptive-analytical approach and secondary data sources, the study concluded that virtual tourism in Algeria remains underdeveloped due to weak digital infrastructure and limited adoption of advanced technologies by public tourism institutions. While the study highlighted the potential of virtual and augmented reality technologies for marketing Algeria's tourism resources, its focus was restricted to crisis management, whereas the present study adopts a broader perspective by examining digital tourism as a long-term development mechanism.

Earlier research by Yano et al. (2008) examined the Virtual Kyoto project as an advanced digital model integrating three-dimensional Geographic Information Systems (3D GIS) and Virtual Reality (VR) to reconstruct the historical city of Kyoto across different time periods. The study developed a comprehensive digital database encompassing architectural, topographic, and historical elements, enabling immersive digital exploration of the city. The findings demonstrated the project's potential to support academic research, preserve cultural heritage, and enhance digital tourism experiences. However, the study was limited to a specific historical and geographical context, highlighting the need to examine the adaptability of such models to other national settings, including Algeria.

Study Structure:

To address the research problem, this study is divided into three main sections as follows:

- **Section One:** Concepts of digital tourism and digital tourist destinations.
- **Section Two:** International experiences in digital tourist destinations.
- **Section Three:** Potentials for developing an Algerian model of digital tourism in light of the UAE and Japanese experiences.

I- Concepts of Digital Tourism and Digital Tourist Destinations

This section aims to clarify the conceptual foundations related to digital tourism and digital tourist destinations by highlighting the transformations brought about by modern technologies in the nature of tourism experiences and services. It also addresses different approaches to understanding tourist destinations and their multiple dimensions, culminating in a comprehensive definition of a digital tourist destination as a physical or virtual space supported by technology. The section further reviews key digital and technological enablers, such as big data, digitization, artificial intelligence, and the metaverse, as essential pillars for developing digital tourist destinations and enhancing their competitiveness.

I-1- The Concept of Digital Tourism

The concept of digital tourism represents a fundamental evolution in the nature of tourism experiences in the digital age, based on integrating modern technologies into traditional tourism activities. For instance, this includes using electronic applications in airports and hotels to facilitate and expedite check-in and check-out processes, thereby providing a higher level of convenience for tourists (Ministry of Communications and Information Technology, 2023).

This development extends beyond service improvements to enable digital tourism experiences that transcend geographical and temporal boundaries, allowing tourists to explore destinations through virtual media such as virtual reality (VR), augmented reality (AR), and the metaverse. Consequently, tourists can engage in immersive experiences without the need for physical travel (Ministry of Communications and Information Technology, 2023).

Some researchers view digital tourism as a shift toward a digitally driven system that relies on information technology across all areas of tourism activity. This requires a set of fundamental prerequisites, including developing a comprehensive digital transformation strategy, promoting a culture of digital adoption, designing innovative digital tourism programs, managing and financing the transformation, and providing the necessary human, technical, security, and regulatory resources to ensure success (Al-Samdouni, 2023).

Other researchers define digital tourism as a virtual tourism experience conducted within an electronic environment as an alternative to real-world travel. This form of tourism relies on advanced technologies that liberate tourists from constraints of time, distance, and cost. It also allows them to engage in realistic simulations by virtually exploring streets and tourist areas, typically through VR environments constructed from a series of videos, with the possibility of incorporating supportive media such as sound effects, music, storytelling, and written texts (Al-Samdouni, 2023).

In summary, digital tourism can be defined as: “A modern tourism model that leverages advanced digital technologies to deliver and enhance tourism experiences, either by integrating technological tools into traditional tourism services to improve efficiency and quality or by creating virtual alternatives that allow tourists to explore and interact with destinations in an immersive digital environment that transcends the limitations of space, time, and cost. In this sense, digital tourism represents a strategic shift toward an innovative tourism model that combines service and technological dimensions while enhancing sustainability and competitiveness in the tourism sector.”

I-2- Defining Digital Tourist Destinations

The concept of a tourist destination represents a central notion in tourism studies and has evolved significantly through various analytical approaches that have broadened its meaning and enriched its dimensions. Rather than being defined merely as a geographic location or a site for visitation, a tourist destination is now viewed as a complex construct encompassing spatial, economic, administrative, systemic, and networked dimensions.

From a spatial perspective, a destination is considered a geographic unit endowed with natural, cultural, or human resources that enable it to attract visitors and provide diverse tourism experiences. The economic perspective emphasizes the destination as the outcome of the interaction between supply and demand, reflecting both the tourist's perception and the organized tourism offerings, including resources and infrastructure capable of generating tourism activity. Administratively, the destination is regarded as a central product or tourism brand managed as a strategic unit comprising a mosaic of products, services, and experiences, enhancing its competitiveness. The systemic approach treats the destination as an integrated system that includes attractions, facilities, markets, and public and private stakeholders, whose roles intersect systematically to produce tourism flows. The network perspective adds another layer by conceptualizing the destination as a complex web of actors and relationships—including institutions, services, organizations, and infrastructure—that interact to deliver a cohesive tourism product within a defined geographic space (Žemla, 2016).

Based on these multiple definitions and the five perspectives of tourist destinations, it is clear that the concept transcends a mere geographic site or visitation point. It constitutes a multifaceted construct where spatial, economic, administrative, systemic, and network dimensions intersect. From this standpoint, a comprehensive academic definition can be formulated as follows: A tourist destination is a geographic or perceptual space characterized by natural, cultural, or human attributes that enable it to attract visitors. It constitutes a fundamental unit of tourism activity, strategically organized and managed, encompassing attractions, infrastructure, and services, and integrating a network of interacting actors and relationships that facilitate the provision of diverse tourism experiences. It simultaneously represents a perceptual construct for the tourist and a dynamic socio-economic system reflecting the interaction between supply and demand in the tourism market.

Having clarified the concepts of digital tourism and tourist destinations, we can now define the concept of a digital tourist destination as follows: “A digital tourist destination is a physical or virtual tourism space reshaped through the integration of modern digital technologies into its components and services, allowing tourists to interact either directly through an on-site visit enhanced by digital tools (such as smart applications and online booking systems) or virtually through virtual reality, augmented reality, and metaverse technologies. This destination functions as an integrated unit combining tourism resources, infrastructure, and digital services within a network of actors and relationships aimed at improving and expanding the tourist experience beyond spatial and temporal constraints, while contributing to the sector's competitiveness and supporting sustainable development pathways”.

I-3-Technological and Digital Enablers for the Establishment of Digital Tourist Destinations

The digital revolution has significantly reshaped the tourism sector, opening new horizons for tourist destinations. These destinations no longer rely solely on traditional services but have increasingly adopted a system of technological tools that enhance tourist interaction and strengthen competitive capacity. Key pillars of digital tourism include the use of big data, digitization, and the widespread availability of the internet and social media, alongside emerging technologies such as artificial intelligence (AI), virtual and augmented reality, and the metaverse, which represents a promising future frontier.

Big data plays a central role in understanding tourist behavior and predicting preferences by analyzing vast amounts of information derived from searches, bookings, and social media interactions. Digitization has streamlined operational and administrative processes within hotels and airports, improving efficiency and service convenience. Meanwhile, the widespread use of the internet and online platforms such as Booking.com and Expedia allows tourists to book trips and accommodations in real time, accelerating decision-making processes. Similarly, social media has emerged as a powerful interactive marketing tool, enabling the sharing of photos, experiences, and user-generated content that enhances destination appeal (Ministry of Communications and Information Technology, 2023).

Emerging technologies have introduced a qualitative shift in designing and delivering tourism experiences. AI enables personalized and rapid services through chatbots, while virtual reality allows tourists to explore destinations virtually before visiting. Augmented reality enhances the on-site experience with real-time interactive information, and the Internet of Things (IoT) facilitates smart rooms that improve hospitality experiences. Looking further ahead, the metaverse offers immersive virtual spaces that could serve as standalone tourist destinations, with some studies estimating its contribution to the global tourism economy to reach tens of billions by 2030 (Ministry of Communications and Information Technology, 2023).

It is evident that the establishment of digital tourist destinations is closely linked to the readiness and integration of these technological enablers into a cohesive system. They are not merely technical tools but form a strategic infrastructure that enhances the tourist experience while promoting sustainability and competitiveness in the global market. Therefore, it is crucial to examine the current status of these enablers in Algerian tourism, particularly given existing digital gaps, to assess their feasibility in supporting the transition of local destinations toward comprehensive digitalization.

II- International Experiences in Digital Tourist Destinations

International experiences in digital tourism demonstrate the diversity of approaches used to leverage technology for developing tourist destinations. These models vary according to economic, social, and technological contexts. Many countries have successfully established innovative digital tourist destinations that enhance their global competitiveness. The following section highlights some of the most prominent international experiences:

II-1-Dubai 360 Experience:

The Dubai 360 platform represents a pioneering initiative in digital tourism promotion, utilizing 360-degree panoramic imaging technology to showcase Dubai's tourist and cultural landmarks online. The platform offers users immersive, high-quality virtual tours, allowing them to explore major sites such as the Burj Khalifa, Burj Al Arab, Dubai International Airport, and key shopping centers like Dubai Mall. Through an intuitive and interactive interface, the platform provides a near-realistic digital experience, giving potential tourists a tangible preview of the destination before visiting in person (Ministry of Communications and Information Technology, 2023).

Officially launched on January 19, 2015, after approximately 18 months of development by a specialized team with local and international expertise, the project employed advanced imaging and digital processing technologies, covering over 1,000 sites within the emirate. As such, the platform is not merely a tool for displaying photos and videos but a comprehensive strategy designed to position Dubai as a leading global tourist and investment destination, offering a competitive advantage over other destinations that have not yet reached a similar level of digital development (Al-Khabboub, 2015).

The Dubai 360 service is distinguished by its adoption of 360-degree panoramic photography, providing high-resolution images and videos that capture the intricate details and aesthetics of tourist sites, offering users an interactive experience close to reality. The development team emphasized prominent landmarks such as the Burj Khalifa, Burj Al Arab, and Dubai International Airport, in addition to covering major markets and shopping centers like Dubai Mall. The platform also allows users to view airport activities and facility details in ways previously unattainable, surpassing the quality and precision of similar technologies, such as Google Street View (Al-Khabboub, 2015).

The project aims to present an authentic image of Dubai and strengthen its status as a global tourist and investment hub by providing virtual tours that offer potential tourists a precise understanding of the emirate's tourism capabilities. Project leaders assert that such a service has not been implemented at this level of sophistication in any other city, granting Dubai a competitive edge in the global tourism market. Dubai 360 also serves as a strategic tool to attract tourists and motivate actual visits following comprehensive virtual experiences (Al-Khabboub, 2015).

The Dubai 360 team ensured that the platform's content is available in both Arabic and English, with plans to expand to additional international languages such as French, to broaden global accessibility. The platform is enriched with a comprehensive database containing accurate and reliable information sourced directly from the featured sites. To further enhance the digital experience, the team is integrating live streaming for major events, such as New Year's celebrations at the Burj Khalifa, adding a real-time dimension to the virtual experience and enhancing the platform's ability to provide a fully interactive and live promotional showcase (Al-Khabboub, 2015).

From a digital performance perspective, Hypestat reports that Dubai360.com ranks 2,499,358 globally in website traffic. While this ranking indicates moderate presence compared to major global tourism platforms, the site attracts approximately 2,514 daily visits, equating to roughly 76,000 monthly visits. Data shows that 13.1% of visits originate from India and 12.3% from Australia, demonstrating the platform's capacity to

engage users from geographically distant regions and reinforcing Dubai's presence on the international tourism map (HypeStat, n.d).

Economically, potential daily revenue from advertisements is estimated at around \$9.28, or approximately \$278 per month. Although modest compared to the financial returns of other global tourism platforms, these figures reflect a promising digital activity that can be expanded through more effective marketing strategies and a broader user base (HypeStat, n.d).

Overall, Dubai 360 represents more than a panoramic display platform; it is an integrated strategic experience that combines tourism promotion, technological innovation, and global market outreach, enhancing Dubai's ability to establish itself as a leading international tourist destination.

II-2-Virtual Kyoto Experience:

The Virtual Kyoto project is considered one of the world's most prominent models in digital tourist destinations, aiming to represent the historical city of Kyoto through a virtual time-space environment. This allows researchers and virtual visitors to explore the city's past, present, and future. The project was developed using advanced Geographic Information Systems (GIS) and Virtual Reality (VR) technologies, within the framework of 4D GIS, where three-dimensional models of the city are represented at different points in time. This spans from the Heian period (794–1185), when Kyoto was established as the capital of the Japanese Empire, through the Edo period (1603–1868), the Meiji and Taisho eras (1868–1926), up to the post-World War II period, providing a comprehensive view of the city's urban and cultural development over more than a thousand years (Yano et al., 2008).

The Virtual Kyoto project relies on comprehensive archiving of reference materials, including historical and digital topographic maps, cadastral maps, aerial photographs, landscape paintings, archaeological data, and historical documents. A massive database was created, covering all existing buildings, including approximately 22,000 traditional Machiya houses, about 375 heritage buildings and temples, and roughly 2,000 early modern buildings. Accurate three-dimensional models of these structures were developed using computer-aided design software and virtual reality technologies, enabling precise representation of the urban landscape and the unique architectural details of each building (Yano et al., 2008).

One of the project's main objectives is to simulate changes in the urban landscape and land use over different historical periods, allowing the study of cultural, social, and economic transformations the city has undergone. This was achieved by modeling the current city and then gradually replacing modern buildings with historical models, providing an accurate visualization for each time period, including the post-World War II era, which saw extensive urban changes due to modernization and redevelopment of certain neighborhoods (Yano et al., 2008).

The project also serves as an integrated cultural heritage and traditional arts experience, reconstructing historical sites and festivals such as the Minamiza Theatre and the Gion Festival with Yamahoko floats. These models include detailed reproductions of interior and exterior building features, surrounding streets, and virtual walking experiences, along with traditional cultural performances captured using motion capture technology. This highlights the important role of digital technology in

preserving living heritage and providing immersive experiences for virtual visitors (Yano et al., 2008).

From a research perspective, the Virtual Kyoto project enhances historical and urban studies by providing a comprehensive digital database including old topographic maps, aerial photographs, archival documents, and artistic works. It contributes to the preservation of cultural and architectural heritage through the reconstruction of historical and religious landmarks, including temples, shrines, castles, and traditional houses, allowing researchers to study the urban landscape and its evolution over time in a systematic and accurate manner (Yano et al., 2008).

In terms of urban planning, the project provides a powerful tool for supporting sustainable urban development, enabling planners to study changes in land use and the urban landscape over time, and to assess the impacts of urban modernization on heritage and society. The project also allows for testing future development scenarios, enhancing the ability to make balanced planning decisions that consider cultural heritage and urban environments (Yano et al., 2008) .

In the tourism sector, the project promotes digital tourism by enabling virtual visitors to explore historical and contemporary Kyoto in an immersive way, thereby marketing the city globally without temporal or spatial limitations. The project represents a strategic platform that combines digital archiving, academic research, urban planning, and virtual tourism experiences, making it a model that can be adapted for other cities with rich historical and cultural heritage (Yano et al., 2008).

In conclusion, the Virtual Kyoto experience demonstrates how advanced digital technologies can integrate cultural, urban, and tourism dimensions within a single platform, focusing on heritage preservation, enhancing academic research, and improving tourism competitiveness. This project serves as a pioneering model for developing digital tourist destinations, offering valuable lessons that could be applied to digital tourism in historically and culturally rich cities, including potential applications in Algerian cities to enhance their tourist appeal and improve the quality of digital services provided to visitors.

By reviewing international experiences such as Dubai 360 and Virtual Kyoto, it becomes clear that digital tourism is no longer merely a complementary promotional tool; it has become a strategic mechanism enabling cities to strengthen their global competitiveness. While Dubai's experience focused on direct tourism promotion using panoramic imaging technologies to market the emirate as a tourist and investment destination, Kyoto's project combined cultural, research, and urban dimensions by reconstructing historical and architectural heritage in an integrated virtual environment. These examples highlight that the success of digital tourism depends on balancing technological innovation, cultural identity preservation, and global accessibility. Therefore, leveraging these models provides an opportunity for Algerian tourism to adopt innovative digital solutions that respect its cultural and historical specificities while enhancing its competitiveness at regional and international levels.

III- Potential for Developing an Algerian Digital Tourism Model in Light of UAE and Japanese Experiences

This axis aims to highlight the national assets that form the foundational basis for implementing digital tourist destinations in Algeria, contributing to the support and development of the tourism sector. Beyond the country's rich natural, cultural, and historical resources, the digital domain is experiencing rapid growth that can be leveraged to keep pace with global technological transformations. This section also addresses challenges associated with weak national strategies and limited international promotion while exploring the potential to utilize these assets in light of successful international experiences, thereby enhancing Algeria's position as a promising digital tourist destination.

III-1- National Assets Supporting the Development of Digital Tourism in Algeria

III-1-1-Natural Assets

Natural assets are among the most prominent elements that can be harnessed to develop digital tourist destinations in Algeria. The Sahara Desert, particularly the sandy regions in Tamanrasset and Adrar, offers opportunities for 360-degree virtual tours of oases and sand dunes, alongside traditional desert activities such as camel riding and dune excursions. The Mediterranean coastlines and beaches also represent key digital tourism components, allowing virtual tours of famous beaches while highlighting scenic views and water-based activities. Additionally, Algeria's mountains and forests, such as the Aurès Mountains and the Tell Atlas, can be utilized to provide virtual hiking trails and interactive information about local biodiversity.

III-1-2-Historical and Cultural Assets

Historical and cultural assets are essential pillars of digital tourism. Ancient cities and palaces, such as the Casbah of Algiers, Timgad, and Djemila, can be reconstructed using virtual reality technologies to provide interactive historical experiences for visitors. Roman ruins in Tipaza and Djemila can also be digitized to offer educational virtual visits that highlight architecture and ancient history. Furthermore, museums and galleries, such as the Museum of Islamic Art and the National Museum of Fine Arts, can be digitized to display art collections and artifacts online, providing a rich cultural experience without the need for physical travel.

III-1-3- Cultural and Folkloric Assets

Cultural and folkloric assets play a pivotal role in developing digital tourism. Traditional festivals and events, such as the Timgad Festival, Constantine International Music Festival, and the Desert Festival in Tamanrasset, can be streamed virtually or presented through interactive experiences that allow visitors to explore traditional music and dance. Handicrafts and traditional arts, including weaving, pottery, and carpet-making, can also be showcased with interactive content explaining production methods and the historical significance of these crafts.

III-1-4-Environmental Assets and Sustainable Tourism

Environmental assets are among the most significant domains that can be utilized in digital tourism. National parks and nature reserves, such as Hoggar Park, Ain Zerga Reserve, and Djurdjura National Park, can be leveraged to design virtual tours that

focus on introducing the environment and wildlife. Furthermore, the mountain villages in the Aurès region and other rural areas offer opportunities to create virtual content highlighting agricultural and rural traditions, thereby contributing to the promotion of local environmental and cultural heritage in an interactive and engaging manner.

III-2- Challenges of Digital Tourism in Algeria Compared to International Experiences

Combining the UAE and Japanese models offers a strategic opportunity for developing digital tourism in Algeria. On one hand, the “Dubai 360” experience can be leveraged to digitally promote Algerian tourist destinations through interactive 3D virtual tours of natural and cultural landmarks, such as southern palaces, Roman archaeological cities, and Mediterranean beaches, thereby enhancing Algeria’s international appeal. On the other hand, “Virtual Kyoto” provides a scientific and academic framework for preserving Algeria’s cultural and historical heritage by digitally reconstructing historic cities such as the Casbah, Timgad, and Djemila using GIS and 4D GIS technologies, linking the past and present in a rich digital experience. Thus, integrating promotional and marketing aspects with academic and heritage-oriented dimensions could create a comprehensive digital tourism model in Algeria, balancing effective promotion with the protection of historical and cultural identity.

When comparing Algeria with countries like the UAE (Dubai 360) and Japan (Virtual Kyoto), several factors emerge that explain the success of these international digital tourism initiatives, whereas Algeria has yet to reach this level. In terms of digital infrastructure, Dubai has heavily invested in high-speed internet, artificial intelligence, and virtual reality, as reflected in leading digital platforms like Dubai 360. Japan, in turn, employed cutting-edge GIS and VR technologies for the Virtual Kyoto project. Conversely, Algeria still faces limited internet connectivity and weak integration of these advanced technologies within the tourism sector.

Regarding vision and strategy, Dubai has made digital transformation in tourism a core component of its broader “Smart Dubai” initiative. Japan has framed its digital tourism projects within a scientific and cultural context aimed at protecting and promoting heritage globally. Algeria, however, lacks a clear national strategy for digital tourism, limiting its potential in this area.

Concerning funding and partnerships, Dubai leveraged its strong economic position to finance platforms like Dubai 360 through robust public-private partnerships. Japan relied on universities and government agencies to fund large-scale projects like Virtual Kyoto, serving both academic and tourism purposes. In contrast, investments in digital tourism in Algeria remain minimal and are largely limited to small-scale government initiatives.

In the domain of marketing and promotion, Dubai successfully positioned itself globally as a “smart city,” integrating digital tourism as a distinguishing feature of its brand. Japan marketed Virtual Kyoto as an innovative tool for researchers and tourists to explore the city across different historical periods. Meanwhile, Algeria’s external promotion remains weak, and its rich and diverse heritage has yet to be transformed into digital content capable of attracting international tourists.

Regarding technical skills and expertise, Dubai attracted international experts in AI, virtual, and augmented reality to support its tourism projects, while Japan relied on its

longstanding experience in IT and scientific research. Algeria, by contrast, faces a significant shortage of specialized competencies in digital tourism technologies, limiting its ability to develop similar projects.

Finally, there is a substantial difference in the integration of heritage and technology. Dubai has successfully converted both modern and heritage landmarks into digital content through 3D virtual tours (360° tours). Japan revived the history of Kyoto through an interactive platform combining educational and cultural dimensions. Algeria, despite possessing world-class archaeological sites such as Timgad, the Casbah of Algiers, and the Tassili Plateau, has yet to invest in transforming this heritage into attractive digital tourism products.

III-3- Strategic Pillars for Building Digital Tourist Destinations in Algeria Based on the UAE and Japanese Experiences

Since Algeria possesses strong assets that have not yet been translated into digital tourist destinations, success in this field requires focusing on specific strategic pillars.

First, regarding digital infrastructure, it is essential to improve internet quality and accelerate the expansion of high-speed networks such as fiber optics and 5G, while integrating technologies like artificial intelligence (AI), virtual reality (VR), and augmented reality (AR) within the tourism sector. This would enable tourists to engage in immersive and innovative experiences.

Second, it is necessary to establish a national vision and strategy for digital tourism linked to the broader tourism development plan, with clear objectives such as international promotion, protection of national heritage, and enhancement of the local tourist experience.

Third, in terms of funding and partnerships, the private sector and foreign investors should be involved in financing digital tourism projects. Additionally, collaboration between universities, government institutions, and technology companies should be encouraged to develop innovative solutions that serve tourism.

Fourth, regarding marketing and promotion, it is important to build a digital brand for Algeria as a smart tourist destination by creating interactive platforms that include 360° virtual tours, smart applications, and interactive content showcasing Algerian tourist sites globally.

Fifth, Algeria needs to develop human capital by investing in training in geographic information systems (GIS), virtual and augmented reality, and 3D programming, alongside attracting international experts to transfer knowledge to young Algerian professionals.

Sixth, integration between heritage and technology must be strengthened by digitizing major archaeological sites such as Timgad, Djemila, the Casbah of Algiers, and the Tassili Plateau through 3D models and interactive maps, as well as converting cultural heritage—music, arts, and festivals—into interactive digital content reflecting national identity.

Finally, the legal and regulatory framework should be developed through policies that protect digital tourism data and intellectual property, while facilitating the entry of startups in the digital tourism sector to foster innovation and investment.

It is evident that Algeria possesses a rich stock of natural, historical, and cultural assets; however, weaknesses in the national strategy, digital infrastructure, and external marketing limit the utilization of these resources to build competitive digital tourist destinations. Therefore, overcoming these challenges by leveraging leading international experiences, such as those of the UAE and Japan, could open wide horizons for Algerian tourism to transition toward a digital model capable of supporting the tourism sector and enhancing Algeria's position in the global tourism market.

Conclusion

Digital tourist destinations represent a strategic transformation in the tourism sector, integrating modern technologies with traditional services and enabling visitors to experience destinations virtually through virtual reality (VR), augmented reality (AR), and the metaverse. These destinations are not merely geographic locations; rather, they function as integrated systems that combine resources, digital services, and networks of stakeholders to enhance the tourist experience and promote sustainability.

International experiences, such as Dubai 360 and Virtual Kyoto, demonstrate the effectiveness of employing digital technologies in tourism promotion, contributing to enhanced competitiveness and the achievement of sustainable development goals. In Algeria, despite the current limitations of virtual tourism due to underdeveloped digital infrastructure, the sector possesses significant potential to leverage natural, cultural, and historical resources while adopting modern technologies to increase destination attractiveness.

Key Findings:

- International experiences illustrate that integrating digital technologies in tourism promotion enhances the visitor experience and strengthens global competitiveness.
- The use of VR, AR, and 3D reconstruction of heritage sites supports environmental sustainability and contributes to achieving sustainable development objectives.
- Digital destinations function as integrated systems, combining resources, digital services, and stakeholder networks to improve the tourist experience.
- Algeria possesses abundant natural, cultural, and historical resources that can be harnessed to develop digital tourism and attract both domestic and international visitors.
- Challenges in Algeria include limited digital infrastructure, insufficient adoption of modern technologies, and a lack of integration among digital and tourism stakeholders.

Recommendations:

- Strengthen digital infrastructure and provide advanced technologies to enable destinations to offer fully immersive virtual experiences.
- Promote integration and coordination among digital and tourism stakeholders to ensure effective management of resources and digital services.

- Leverage Algeria's natural, cultural, and historical resources to develop innovative and engaging digital tourism experiences for both local and international visitors.
- Monitor successful international practices and adapt best digital tourism strategies to the Algerian context to ensure sustainability and enhance destination competitiveness.

Endnotes:

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