

The metaverse in the tourism industry: A new horizon after the COVID-19 pandemic

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Abstract

The novel coronavirus (COVID-19) is challenging the world, and the tourism industry is particularly susceptible to measures to counteract this pandemic, such as restricted mobility and social distancing. Following the COVID-19 pandemic, the tourism industry needs to find new directions for future development. Enabled by Internet 3.0, the metaverse, which refers to a three-dimensional virtual space and focuses on social connections, provides an opportunity for future tourism. This study aims to establish relations between the concepts of the metaverse and tourism and to highlight opportunities for the tourism industry.

Keywords

Metaverse
 COVID-19 pandemic
 Blockchain
 Smart tourism
 Tourism marketing

Introduction

The tourism industry is particularly vulnerable to both external and internal shocks (Gursoy et al., 2022; Ritchie, 2009). Due to the novel coronavirus (COVID-19) pandemic, the tourism industry came to an abrupt halt, with airplanes grounded, hotels closed, and travel restrictions put in place in nearly all countries around the world (World Tourism Organization [UNWTO], n.d.a). Even though the number of international tourist arrivals in Europe, the Americas, and the Middle East has increased significantly since 2022, the tourism levels remain very low compared with 2019 (UNWTO, 2022).

The tourism industry is also deeply influenced by technological developments, as can be traced over the last five decades. The establishment of computer reservation systems (CRSs) in the 1970s, information and communication technology (ICT) in the 1980s, and the internet in the late 1990s, followed by the widespread use of smartphones and social media after 2000, have served as accelerators to tourism development and brought unprecedented changes in tourist behaviour (Buhalis & Law, 2008; Gössling, 2021). More recently, artificial intelligence (AI), the Internet of Things (IoTs), vertical reality (VR) headsets, augmented reality (AR), and emotional sensors have been widely applied in the tourism industry to better meet tourists' needs.

Having experienced the COVID-19 pandemic, which resulted in strict travel restrictions, it is critical for the tourism industry to explore new ways of travel that supplement the traditional in-person travel style. Enabled by Internet 3.0, a three-dimensional virtual space — the metaverse — creates a sense of presence and, as a result, has brought innovations to the tourism industry by enhancing tourism experiences (Gursoy et al., 2022). Thanks to improvements in technology and growing sophistication in the quality of VR headsets, which drive digital natives and tech-savvy consumers to engage in virtual globetrotting (Gursoy et al., 2022), the metaverse provides multiple possibilities for the tourism industry's post-pandemic development. This paper aims to present a new horizon regarding the use of the metaverse in the tourism industry from the perspectives of blockchain, smart tourism,

and tourism marketing. This paper not only contributes to academic studies by highlighting a key future research agenda but also benefits practitioners in the tourism industry by suggesting the possibilities of metaverse application.

What is the metaverse?

The metaverse is generally understood as a cyberspace where people interact through avatars. Taking this definition, *Second Life*, an online platform developed by Linden Lab and released in 2003, is believed to be the first metaverse in the world. *Second Life* attracted media attention in 2006 when *BusinessWeek* magazine published an article about *Second Life* and its avatar Anshe Chung as a cover story (BusinessWeek, 2006). Chung was the first avatar in the world to earn virtual assets worth more than one million U.S. dollars (Fortune, 2006). At the time, many companies entered *Second Life* to open virtual shops there, seeing the platform as a new business opportunity. However, they soon realized that leveraging *Second Life* was not as easy and attractive as they had imagined, and the boom quickly passed (Los Angeles Times, 2007). Even after the *Second Life* boom, people kept learning how to enjoy *Second Life*-type platforms with advances in technology and the introduction of online video games such as *Minecraft* by Mojang Studios, *Fortnite* by Epic Games, and *Animal Crossing: New Horizons* by Nintendo.

In 2021, when Mark Zuckerberg changed the name of his company from Facebook to Meta, the metaverse regained media attention (Meta Platforms, 2021). With the improvement of internet connectivity and widespread use of smartphones and other internet-connected terminals at a societal level, people are becoming more dependent on the internet, while digitalization is increasingly taking place in their lives. Observing such conditions, Meta and other companies are seeing huge business potential in the metaverse. Recent views on the metaverse emphasize seamless interconnectivity between virtual and real environments that can be enhanced by technologies such as VR and AR (Golf-Papez et al., in press). Thus, the metaverse is expected to evolve by merging with real space rather than as an independent virtual world separate from

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real life.

Previous studies and metaverse practices in the tourism industry

The metaverse is still a new concept in the tourism industry, and its use is in the infant stage. As one of the few studies in this field, Gursoy et al. (2022) proposed a conceptual framework for creating metaverse experiences in the tourism and hospitality industry. In their study, two dimensions to build metaverse experiences were employed: interactivity (low vs. high), defined as a customer's willingness to participate in a virtual environment, and motives (hedonic vs. utilitarian), defined as a customer's purpose for undertaking virtual experiences. In this conceptual framework, opportunities for applying the metaverse in the tourism and hospitality industry were segmented into four types: lifestyle (low interactivity vs. functional motives), promotions (high interactivity vs. functional motives), amusements (low interactivity vs. hedonic motives), and adventures (high interactivity vs. hedonic motives). This framework suggests that opportunities for transforming traditional hospitality and tourism experiences into virtual experiences are nearly limitless (Gursoy et al., 2022), offering new experiences for tourists and overcoming the difficulties of travel restrictions.

While the study above sought to establish a theoretical foundation, other studies have attempted to explore more concrete applications of the metaverse in the tourism industry. From the perspective of tourist behaviour, Zaman et al. (2022) empirically examined the effects of COVID-19 travel anxiety on tourists' readiness for metaverse space travel, using tech savviness and travel fear of missing out (FOMO) as moderators. They found that tourists' readiness for metaverse space travel depends on COVID-19 travel anxiety, especially when tourists' tech savviness and travel FOMO are high. Similarly, Buhalis and Karatay (2022) conducted 18 semi-structured interviews to better understand whether Generation Z believes that cultural heritage experiences can benefit from immersive technology, such as the metaverse. The Generation Z participants suggested that it is necessary for cultural heritage sites to create transformative experiences through high technology and that the metaverse can be an efficient tool for cocreating such experiences.

From the perspective of smart cities, Allam et al. (2022) theoretically explored the metaverse and its opportunities in digital

twins, urban resources management, urban governance, the quality of life, social interactions in urban settings, urban tourism, urban climate change mitigation and adaptation, and the urban form, thereby creating a blueprint for future cities. Their study mapped the emerging products and services of the metaverse in developing smart cities. Moreover, Um et al. (2022) introduced Incheon as a smart tourism city project in South Korea and applied the metaverse concept to examine how Incheon implements smart tourism as a city. In this study, Incheon was investigated in relation to two metaverse types: a real-based metaverse (*AR Incheon*) and a virtual-based metaverse (*Incheoncraft*). In *AR Incheon*, AR services provide one-way interactive content through a smartphone camera, allowing tourists to experience AR in the real world through an AR application, thus increasing tourism attractiveness. In *Incheoncraft*, the tourists' experience is created and enhanced through Minecraft, which is a sandbox game in which players explore a virtual world freely as avatars. These two studies on the metaverse in smart cities focus on how new technologies can automate and maximize tourists' experiences.

The metaverse in the tourism industry has also been approached from the perspective of blockchain. For example, Wei (2022) discussed the close internal relationship between blockchain and the metaverse, referring to blockchain as a natural carrier of the metaverse and the "key to the door" (p. 325) of the metaverse. Wei (2022) stated that as the metaverse is a real-time online network powered by integrated technologies, including blockchain, AI, and interactive sensing, it has six core features: an immersive experience, openness, virtual identity, constant evolution, virtual and real interaction, and new ways of confirming power. Therefore, an online platform based on blockchain technology can provide professional certification and tourism services to the public.

The Japan Tourism Agency (JTA) is conducting a project to transform tourism services and create tourism demand through the promotion of digital transformation (DX). To do so, it is integrating digital technology and tourism resources to create new tourism content and values that are not bound by conventional ways of travel, aiming to expand consumption opportunities for travellers and increase their unit spending (JTA, 2021). The metaverse, as a new opportunity to support tourism development, is attracting significant attention from both the academic and business world in Japan. For example, Virtual OKINAWA, a VR space on the internet, demonstrates how the metaverse can promote the tourist experience. In



Figure 1. Kokusai-dori in Virtual OKINAWA (Ashibi Company Co., Ltd. Used with permission)

Virtual OKINAWA, visitors can not only enjoy sightseeing spots, such as Kikusai-dori (see image), but also “walk” in Shurijo Castle. During the tour of Virtual OKINAWA, visitors can talk to avatar guides in certain locations and click the icon “i” for more detailed information regarding tourist spots. Furthermore, in advance of the Osaka-Kansai Expo in 2025, Osaka City and Osaka Prefecture opened the New Town area on February 28, 2022, featuring Dotonbori and other areas of Osaka City. The Virtual Osaka metaverse, including iconic tourism spots in Osaka City and new attractions unique to the virtual world, such as an athletic facility that allows visitors to climb buildings, is expected to attract both domestic and international tourists (Osaka City, 2022).

New horizon of metaverse practice in the tourism industry

Following Society 1.0 (hunting society), Society 2.0 (agricultural society), Society 3.0 (industrial society), and Society 4.0 (information society), Japan is entering a new era — Society 5.0. Society 5.0 refers to a human-centered society that balances economic development and the resolution of social issues through a system that highly integrates cyber space (virtual space) and physical space (real space; Cabinet Office, n.d.). This context provides technological possibilities for metaverse practices in the tourism industry. For example, clickstream data (digital footprints on the internet), social big data, and Global Positioning System (GPS) big data can be used to better understand tourists’ preferences. Through AI analysis, people can design the metaverse for tourism so that it is tailored as closely as possible to tourists’ needs and to physical space-based travel. In the past, tourism has been defined as “a social, cultural and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes” (UNWTO, n.d.b). Following the COVID -19 pandemic, it is time to consider what the “new normal” is for the tourism industry and what the “new travel style” is. People’s lifestyles have changed greatly since the pandemic; for example, work at home seems to be the new normal. Therefore, travel style can also change from involving physical movement and in-person experiences to entertainment content in the metaverse that people can purchase and enjoy anywhere and anytime. In tourism studies, researchers have focused on traditional travel styles, even though smart tourism has become a popular topic. For future study, researchers can extend the three pillars of smart tourism — smart tourist, smart business, and smart destination — to the metaverse context; for example, what motivates tourists to travel in the metaverse? Is it necessary for all stakeholders to achieve an ecosystem even in a metaverse context? How can all stakeholders create value together? The COVID-19 pandemic has shocked the tourism industry, but it has also opened the gateway to a new journey.

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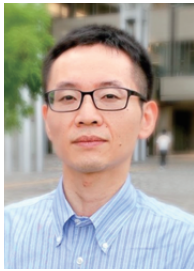
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