

Virtual Travel and the Digital Economy: Redefining Tourism in the Age of Innovation

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Keywords:

Virtual travel,
Digital economy,
Sustainable
tourism,
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Abstract.

This study is based on a qualitative exploratory research design to examine the convergence of virtual tourism, consumer behaviour and digital innovation via an integrative conceptual framework connecting technological drivers, user adoption, economic outcomes and sustainability dimensions. We performed a systematic literature review using the PRISMA protocol. We screened 545 records from Scopus and Web of Science and included 58 sources for thematic synthesis. The study revealed five major themes: Digital Transformation of Tourism Experiences; 2) Consumer Adoption; 3) Sustainability as the Emerging Paradigm of Virtual Tourism; 4) Digital Business Model Innovation in Tourism; 5) Governance, Ethics, and Future Research Agenda. Findings show that immersive technologies (AR/VR), AI and blockchain enable scalable tourism solutions, but claims of inclusivity and sustainability are often overstated: digital fatigue, authenticity gaps, infrastructural inequality and environmental costs of digital hardware limit the contribution of virtual tourism. After a rigorous literature review, the study identifies specific gaps, such as the lack of an integrative conceptual model, weak empirical grounding, and asymmetric treatment of sustainability benefits and costs, and proposes a framework to guide future theory building and empirical validation. The paper contributes to tourism policy by advocating for strategic frameworks where inclusivity and sustainability are viewed as contested, evidence-based results (rather than as a natural benefit of digitalisation).

Kata Kunci:

Wisata virtual,
Ekonomi digital,
Parwisata
berkelanjutan,
Inovasi.

Abstrak.

Studi ini menggunakan desain penelitian eksploratif kualitatif untuk mengkaji konvergensi antara pariwisata virtual, perilaku konsumen, dan inovasi digital melalui kerangka kerja konseptual integratif yang menghubungkan faktor pendorong teknologi, adopsi pengguna, hasil ekonomi, dan dimensi keberlanjutan. Kami melakukan tinjauan pustaka sistematis dengan menggunakan protokol PRISMA. Kami menyeleksi 545 catatan dari Scopus dan Web of Science serta memasukkan 58 sumber untuk sintesis tematik. Studi ini mengidentifikasi lima tema utama: Transformasi Digital Pengalaman Wisata; 2) Adopsi Konsumen; 3) Keberlanjutan sebagai Paradigma Baru Pariwisata Virtual; 4) Inovasi Model Bisnis Digital dalam Pariwisata; 5) Tata Kelola, Etika, dan Agenda Penelitian Masa Depan. Temuan menunjukkan bahwa teknologi imersif (AR/VR), AI, dan blockchain memungkinkan solusi pariwisata yang dapat ditingkatkan skalanya, namun klaim mengenai inklusivitas dan keberlanjutan sering kali dilebih-lebihkan: kelelahan digital, kesenjangan autentisitas, ketimpangan infrastruktur, dan dampak lingkungan dari perangkat keras digital membatasi kontribusi pariwisata virtual. Setelah melakukan tinjauan literatur yang mendalam, studi ini mengidentifikasi sejumlah kesenjangan—seperti belum adanya model konseptual yang integratif, lemahnya landasan empiris, serta perlakuan yang tidak seimbang antara manfaat dan biaya keberlanjutan—dan mengusulkan sebuah kerangka kerja untuk memandu pengembangan teori serta validasi empiris di masa depan. Makalah ini memberikan kontribusi bagi kebijakan pariwisata dengan mendorong penerapan kerangka kerja strategis yang memandang inklusivitas dan keberlanjutan sebagai hasil yang bersifat dinamis dan perlu diperjuangkan (bukan sekadar manfaat otomatis dari digitalisasi) serta didasarkan pada bukti nyata.

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1. Introduction

Tourism, traditionally defined by UNWTO as tourism trips “consist of or include travel for leisure or business and at least one overnight stay outside one’s usual environment”, in some definitions even includes visits to second homes or, in certain cases, day-trip travel (UNWTO, 2018). Within this definition, we frame the subsequent discussion of how tourism is being shaped by technological innovation. Virtual tourism, or travel experiences made through virtual reality (VR), augmented reality (AR) and digital platforms, adds a digital layer on top of the “old” forms of tourism, and thus enhances, offers immersive views, gives a digital boost to the physical experience and has been hailed to promote sustainable travel, by cutting carbon emissions of trips and de-centralizing flows of tourist to remote areas (Choi & Smith, 2021; Daim et al., 2022; Guttentag, 2010; Tussyadiah et al., 2018). Further extending the digital layer, new forms of participation were added, for example, live travel streaming, transforming the job of the tour guide into a new form of digitally mediated, paid gig work (Jie & Yixuan, 2026).

Yet critically, Internet fatigue has hampered usage, and many virtual tourism experiences may fail to replicate the sensory wealth and the feel of the real physical encounter, diminishing the perceived value by destinations and travellers alike (Huang & Backman, 2021; Lee et al., 2020). Thus far, online platforms are mostly used for social sharing of travel experiences rather than for pre-trip experiences, diminishing the effects on choices, and, in fact, do not replace but only augment travelling, in the long run not being able to generate substantial revenue streams (Garca-Milon et al., 2022). Yet there are under-researched risks; by moving into new areas of tourism experience, tourists are exposed to new cyber risks through data breaches and the specific risks of immersive or platform-based (sharing) economies (Ghaderi et al., 2026).

After a rigorous literature review, we identified three major gaps, and our study is motivated by these gaps. First, much of the existing literature on virtual tourism is descriptive rather than analytical: studies such as catalogue applications of VR, AR, AI, and blockchain but rarely theorise how these drivers interact with adoption, economic outcomes, and sustainability as an integrated system (Guttentag, 2010; Tussyadiah et al., 2018). Second, the field lacks a widely adopted conceptual model that visually connects technological drivers, user adoption, economic outcomes, and sustainability dimensions, limiting its capacity for theory-building and cumulative knowledge (Babu & Subramoniam, 2023). Third, the sustainability narrative in virtual tourism research is asymmetric. Benefits, such as carbon reduction and overtourism relief, are well documented, whereas costs – digital inequality, infrastructure limitations, and the environmental footprint of manufacturing and powering digital devices – receive comparatively little empirical attention (Durrah et al., 2026; Przybylska, 2026; Tee, 2025).

Also, difficulty in delivering real, culturally grounded experiences limited the expansion and appeal of virtual tourism for cultural and experience-based tourism stakeholders (Ting et al., 2023). Therefore, although virtual tourism could contribute to sustainable tourism and the innovation of the tourism industry, the extent to which virtual tourism could realise such contributions was contingent on technological, experience, and economic constraints, which need additional investigation and development of technologies. This study frames virtual tourism as one facet of the tourism ecosystem enabled by technology, albeit an emergent aspect of the tourism sector, serving as a supplement to physical trips.

Virtual travel occurs at the intersection of a variety of theoretical lenses which provide an understanding of adoption, impact and implications within the contexts of the wider tourism and

digital economies. To build a strong foundation for this research, the following theories were considered and adopted for integration into the conceptual model.

Diffusion of Innovations Theory (Rogers, 2003): Fundamental to the adoption of virtual travel is Rogers' Diffusion of Innovations theory, which predicts that the uptake of any innovation will be determined by its perceived relative advantage, compatibility, complexity, trialability and observability. The applications for virtual travel technologies, VR, AR, and AI in tourism are directly related to this theory, whereby adoption by various groups of consumers is dictated by their perceptions of use, difficulty to use and social influence on using the technology (Tussyadiah et al. 2018). VR destination previews, immersive destination experiences and the ability of AI to deliver recommendations to individual travellers can all be interpreted through relative advantage, whereas concerns about lack of real experience and non-sensory aspect to the experience may be linked to complexity and compatibility issues.

Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT): The Technology Acceptance Model (Davis, 1989) and its successor UTAUT (Venkatesh et al., 2003) are useful to explain the adoption of virtual travel. These models suggest that behavioural intention to use a technology is influenced by perceived ease of use, perceived usefulness and social influence. In the context of virtual tourism, such frameworks are useful to account for consumer preferences for VR/AR platforms and travel applications based on mobile, especially among digitally native generations like Gen Z (Vancia et al., 2023) and among older travellers for whom ease of use and facilitating conditions are more salient for adoption (Lehto et al., 2026).

Experience Economy (Pine & Gilmore, 1999) – Virtual travelling enhances the consumer's involvement in the Experience Economy (Pine & Gilmore, 1999), a sector wherein the core offering is experiences, not tangible goods. By crafting immersive environments and utilising an emotional narration, virtual travelling facilitates aesthetic experiences, escapism experiences and learning experiences, thus emphasising how technology delivers high-value experiences (Tussyadiah et al., 2018; Smith & Taylor, 2023).

Smart Tourism Ecosystem Theory (Gretzel et al., 2015) – The theory promotes using a wide range of information and communication technologies (ICTs), IoT devices, Artificial Intelligence (AI), and Big Data in tourism ecosystems and promotes dynamic value co-creation that is dynamic. The interactivity that takes place among the technological infrastructure, service providers, and tourists makes virtual travelling a part of the ecosystem of smart tourism. Use of smart tourism technologies such as personalized content on a blockchain platform, blockchain tickets on the internet or through cloud-supported Virtual Reality (VR) technologies would be considered applications of this theory (Buhalis & Foerste, 2015; Gretzel et al., 2015).

Based on a thorough analysis of extant literature related to tourism technologies, digital innovation and sustainable tourism (Tharindu et al., 2026; Buhalis & Foerste, 2015; Gretzel et al., 2015; Guttentag, 2010), the main research question that forms the backbone of this paper is as follows: “In the virtual tourism economy, what is the impact of technological innovations such as VR, AR and AI on the consumer experience, business model, and on sustainability outcomes, and under which conditions are these outcomes inclusive and truly sustainable? The study explores the following research questions: RQ1: How do virtual travel technologies like VR and AR contribute to the evolution of the digital economy in tourism? RQ2: What are the key benefits and challenges associated with virtual travel from both a consumer and industry perspective? RQ3: How can tourism businesses adapt their strategies to leverage virtual travel and meet the demands of a digital-first consumer base? RQ4: What role does virtual travel play in promoting — and, where relevant, undermining — sustainability in the tourism industry?

2. Literature review

2.1 *Influence of The Digital Economy on Tourism*

The digital economy has irrevocably altered the global tourism landscape, introducing virtual reality (VR), artificial intelligence (AI), blockchain, and the Internet of Things (IoT) technologies into the mix to enable more engrossing, efficient, and accessible travel (Babu & Subramoniam, 2023) (Table 1). Within this digital sphere, virtual tourism has materialised as a groundbreaking form of exploration; these encompass virtual trips, live virtual guide-tours, and virtual tours of heritage sites, catering to recreation and education alike. Live virtual tours are a prime example; tour operators offer destinations to distant viewers live by transforming their geographical expertise into an income-generating digital product that exists in the blurry interstice of tourism services and digital content creation (Jie & Yixuan, 2026). According to recent literature, there have been two major periods in the evolution of digital tourism; the period of digitalisation primarily focuses on access and availability to digital sources, while the period of innovation integrates advanced, disruptive digital technologies to foster greater end-users' experiences and boost business agility (Suyunchaliyeva et al., 2020).

Furthermore, the smart tourism framework-defined by the intersection of information, Communication, technology (ICT), big data, and customised AI approaches-facilitates extensive connections and individual customer involvement (Gretzel et al., 2015; Kumar et al., 2022). These strategies help manage and refine prices, market strategies, and custom tours to the individual while modifying company business models with services like Google Earth VR and Airbnb based on platform access. The significant impact of social media on consumer travel behaviour cannot be underestimated; a study (Vancia et al., 2023) claimed that media such as TikTok, YouTube, and Instagram not only support highly individualised tourism marketing but are also used by Gen Z to guide preferences in destination choices and travel experiences.

Despite the promising accessibility that virtual tourism offers, some studies (Neuhofer et al., 2014; Garcia-Medina, 2024) observed that not all populations have the privilege of using it. Such obstacles as lack of technology literacy, access to inexpensive equipment, and connectivity inequalities prevent universal utilisation of virtual tourism and could potentially further social stratification - a notion substantiated by research on elderly travellers whose access to digital services relies on supportive infrastructure and their initial contact with technologies (Lehto et al., 2026). In terms of business model transformation, the digital economy supports subscription-based virtual excursions, unique souvenir trading utilising NFTs, and AI-powered personalised travel agendas-all indicative of increasingly data-driven and decentralised business operations within the industry (Pagaldiviti et al., 2023). The digital economy is inextricably linked to younger demographics with a willingness to utilize FinTech services, including the Gen Z and millennials who will increasingly leverage FinTech in their purchase of sustainable and luxurious travel, ultimately merging the growth of FinTech with ethical purchasing habits (Tharindu et al., 2026).

Table 1. Applications of Technologies Enabling Virtual Travel

Applications	Technology	Description	Examples
Immersive Destination Previews	VR and AI-powered simulation	Tourists can explore destinations virtually before booking, experiencing realistic 3D environments that showcase landmarks, accommodations, and local attractions.	Thomas Cook's "Try Before You Fly" VR experience allows potential travelers to virtually visit destinations like Greece and experience hotel rooms and resort environments before making travel decisions.
AI-Personalized Travel Recommendations	Machine learning and predictive analytics	Advanced AI algorithms analyze user preferences, past travel history, social media interactions, and demographic data to generate highly personalized travel recommendations.	Platforms like Hopper use AI to predict optimal travel times and prices, and suggest tailored destination experiences based on individual user profiles.
Interactive Museum and Cultural Heritage Tours	AR annotations and contextual information overlay	Museums and historical sites utilize AR to provide interactive, educational experiences where visitors can access detailed information about artifacts, historical contexts, and reconstructed historical environments.	The Smithsonian National Museum of Natural History uses AR applications that allow visitors to interact with exhibits, revealing additional layers of information and historical context.
Virtual Tourism for Accessibility and Sustainability	360-degree video streaming and VR interfaces	VR technologies enable individuals with mobility limitations or environmental concerns to experience global destinations without physical travel, reducing carbon footprints while providing immersive experiences.	Google Earth VR and Google Arts & Culture offer comprehensive virtual tours of world heritage sites, museums, and natural landscapes, making global exploration accessible to everyone.
Augmented Navigation and Local Exploration	Real-time AR wayfinding and contextual information	AR smartphone applications provide real-time navigation, translation, historical information, and cultural insights by overlaying digital information onto physical environments.	Google Translate's AR feature and apps like Wikitude allow travelers to point their smartphones at surroundings and receive instant translations, historical information, and points of interest.

Source: Author's Analysis from Literature

2.2 Impact of Virtual Travel on Tourism Industry

Virtual tourism, from the perspective of both industry and consumer, benefits from numerous advantages and is associated with some significant challenges (Table 2). From a consumer point of view, it increases access, removing travel, economic, and mobility limitations that disabled and less affluent consumers are likely to be restricted by (Tussyadiah et al. 2018). Consumers' willingness to participate in the virtual tour is a key part of UTAUT and TAM and is influenced directly by their perception of the usefulness of a virtual travel site, the ease of use, and social effects.

We see, however, this desire demonstrated by free premium VR and AR in tourism applications for heritage sites (Davis, 1989; Venkatesh et al., 2003). Virtual tourism is commonly assumed to be less costly than a physical journey in that no spending needs to be done for transportation or accommodations (Guttentag, 2010). This point, however, needs some clarification as good quality Virtual Reality often requires significant outlay on a VR headset and the necessary computing capacity.

The costs of, for example, a Meta Quest 2 or Apple Vision Pro may still be too high for lower-income groups or in developing countries (Smith et al. 2022). Therefore, the low cost of virtual tourism is an option for a few and not the many. It is generally a more secure experience for the user as there is less risk associated with travel in the form of potential health and safety risks, security or political concerns. However, this notion has its counterargument; the digitalisation of service transactions and the emergence of sharing economy models within the travel sector create potential risks associated with security threats, unauthorised access, and privacy issues, all of which remain unquantified and largely overlooked.

Table 2. Virtual Travel-Consumer and Industry Perspective

Perspective	Benefits	Challenges
Consumer	Improved accessibility for those with mobility, financial, or geographic constraints; safer, convenient alternative to physical travel; supports pre-trip planning and decision-making.	Lack of full sensory experience; dependence on costly hardware and reliable connectivity; risk of digital fatigue; exposure to data-security and privacy risks.
Industry	Expanded market reach; new revenue streams (subscriptions, digital ticketing, NFTs); supports destination marketing and demand redistribution.	High infrastructure investment; disruption of traditional business models; need for cybersecurity safeguards; risk of overstating inclusivity and sustainability benefits.

Source: Author's Analysis from Literature

There are some limitations such as the absence of a fully-fledged experiential approach and reliance on highly sophisticated technology that would leave behind those who lack digital literacy (Neuhofer et al., 2014). In terms of its industrial impact, virtual tourism allows an extension of market reach, partially contributes to sustainable practices and generation of additional revenue; however, it creates

distortions for traditional industries and demands a massive investment into technologically sophisticated solutions. An efficient implementation would imply cooperation between developers, industries, and consumers and a cautious focus on the stakeholders excluded from such systems (Neuhofer et al., 2014).

The rise in interest towards sustainable and safety-oriented travel experiences may lead to increasing usage of the metaverse in the tourism industry, offering digital eco-tours and virtual cultural events that engage customers before, during, and after a journey (Chen et al., 2024). While contributing to greater accessibility for travellers, these technologies do challenge the current industry's paradigms on sustainability, calling for a renewal of practices in sectors like the Italian tourism industry that need to adopt these innovations without compromising on environmental and social dimensions (Larocca et al.).

2.3 *Virtual Tourism as a Catalyst for Sustainable Tourism Development: Opportunities, Challenges, and Future Directions*

The environmental footprint of tourism has come under increasing pressure, especially from the dramatic effects of over-tourism on natural and cultural heritage sites through tourism-related greenhouse gas emissions caused by transportation (Jones et al., 2022). As a result, virtual tourism has emerged as a promising digital innovation that has the potential to contribute to sustainable tourism by providing immersive travel experiences without the need for physical movement (Smith & Taylor, 2023).

Tourists can use technologies like Virtual Reality (VR), Augmented Reality (AR), Artificial Intelligence (AI), and the metaverse to virtually visit places, significantly cutting down on carbon emissions from travel and easing the strain on ecologically sensitive and culturally significant sites (Garcia et al., 2022; Lee & Patel, 2023; Nguyen, 2024). Recent research indicates that virtual tourism experiences can provide the same level of authenticity and satisfaction as certain physical tourism experiences, making virtual tourism a viable alternative to sustainable destination management (SDM) (Sharma et al., 2025). Moreover, metaverse-based tourism ecosystems are increasingly seen as innovative spaces where immersive technologies can meet the goals of sustainable tourism, shaping the future of responsible tourism (Hao et al., 2025; Mihalic, 2025; Tran, 2025).

Digital inequality is one of the biggest challenges, as not everyone has equal access to immersive technologies. Rural communities, people with lower incomes, and older people are still largely marginalised by digital tourism ecosystems, due to the differences in income, digital literacy, internet connectivity, and technological capability (Durrah et al., 2026; Lehto et al., 2026). In the same vein, insufficient broadband bands, poor power supply, and lack of sophistication in computing devices limit the scalability of the virtual tourism projects, especially in the developing economies (Durrah et al., 2026; Sarkodie Amoako et al., 2024).

Furthermore, virtual tourism isn't a zero-impact activity. The production of VR headsets, sensors, servers, cloud services, and energy-intensive data centres generates carbon emissions, and use up resources, and produces electronic waste. Therefore, it is not enough to assume that digital substitution is a natural way to achieve sustainability without considering the environmental impacts that digital technologies have throughout their life cycle (Tee, 2025). This does not mean that virtual experiences are the panacea for tackling the environmental impacts of physical travel, as meaningful environmental benefits can be achieved only through explicit decarbonization strategies, through the adoption of renewables, and through the management of their sustainability. Likewise, a study (Yu et al., 2026) called attention to the paradox of digital mobility's sustainability, as the new technology that will enable digital mobility consumption can lead to gains in the environment, but these gains can be

nullified by the new modalities of consumption if they are not part of sustainability programs. AI, immersive technologies, and digital innovation are also becoming the new axis of the curriculum redesign in both universities and tourism education institutions to prepare future professionals with the skills and knowledge needed to design and critically review sustainable tourism solutions (Nguyen & Patel, 2022; Huang & Ho-Mai, 2026).

Virtual tourism can promote biodiversity conservation, cultural heritage and local traditions, enrich the interpretation of destinations and raise the appreciation of the conservation of natural resources when people come to visit physically, thus encouraging environmentally responsible behaviours (Harris & Kumar, 2022; Garcia et al., 2023). A study (Meath et al., 2026) also showed that technology-based tourism products, such as virtual conference experiences, can significantly cut the emissions of travelling while providing valuable touristic experiences.

Virtual tourism can also aid sustainable destination management through the promotion of a better distribution of visitors and through mitigating overtourism. Immersive virtual travel to off-the-beaten-path destinations can thus help alleviate overcrowding at iconic sites and generate alternative revenue streams in remote areas (Choi & Smith, 2021). The same conclusion is reached in studies researching the transition from physical tourism to metaverse-based travel, where hybrid tourism systems are proposed to improve both accessibility and sustainability while broadening tourist experiences (Glcan et al., 2026). Additionally, VR-based collectibles in tourism were found to significantly boost psychological well-being and perceived meaning in life among travellers (Zhang & Huang, 2025).

Virtual travel to virtual destinations became instrumental during the travel restrictions, allowing destinations to retain their popularity, attract some tourism interest, support ongoing tourism promotion activities, and generate some alternative revenue, while promoting contactless tourism (Segarra et al., 2022). Online check-in, mobile payments, digital health verification systems, immersive virtual destination previews, and many other digital applications are already part of resilient tourism ecosystems (Yemchuk et al., 2023; Srbu et al., 2023). Similarly, research indicated that virtual tourism was crucial during the pandemic in sustaining some of the travel industry's activities without relying on increased physical travel (Prodhan et al., 2026). However, increased digitization in the sector also means an increased number of security and privacy threats that require greater governance oversight (Ghaderi et al., 2026).

Beyond the significant potential, both virtual and digital tourism face a range of challenges in the realms of technology, economics, sociology, and ethics. Limited access to high-quality digital infrastructure (connectivity issues, poor bandwidth), high costs of VR devices and hardware, and software incompatibilities limit participation in immersive virtual experiences and create a digital divide among potential travelers (Jones & Lee, 2023; Brown et al., 2023). Furthermore, creating engaging, realistic virtual content demands significant capital, human resources, and technological expertise that can represent a barrier for smaller businesses (Smith et al., 2022).

The acceptance and use of virtual tourism remain mixed. Many travelers do appreciate the convenience, affordability, accessibility, and novelty of virtual tourism, but others still perceive virtual tourism as supplementary to real travel, since they miss the richness of sensory experiences and emotional depth associated with visiting a physical location (Williams & Zhang, 2022; Harris & Kumar, 2021). As such, further technological advancement will require improvements in virtuality, realism, interaction, personalization, and emotions generated through immersive environments integrated with AI technologies (Fernandez et al., 2023). Far from replacing traditional tourism, virtual tourism is thus becoming a component of integrated or hybrid tourism systems where physical and digital activities are merged to promote destinations and products more effectively, extending engagement opportunities with customers beyond their trip, diversifying revenue streams and

enhancing traveler satisfaction (Martínez & Lopez, 2023). It goes without saying that all of this entails increased demand for tourism professionals to reskill and acquire new digital competencies (Huang & Ho-Mai, 2026; Garcia et al., 2023). Another critical consideration involves the ethical and legal aspects of immersive technologies, including aspects related to data security and user privacy (Choi & Smith, 2021; Williams & Zhang, 2022), as virtual tourism experiences involve collecting a vast amount of behavioral, biometric, and location-based data. Increased cybersecurity vulnerabilities observed in the sharing economy ecosystems are likely to spill over into digital tourism platforms (Ghaderi et al., 2026). Virtual recreations of cultural heritage also raise concerns about cultural appropriation, stereotyping, and the commodification of culture (Taylor et al., 2023). The establishment of ethical standards, governance frameworks, and regulations is required to build and maintain trust (Brown et al., 2023).

Virtual tourism should be perceived as a supplementary component of a digitally supported sustainable tourism system, rather than a substitute for traditional tourism, based on literature, and its contribution to sustainability is dependent upon the accessibility of digital technologies, digital literacy and awareness, resilient infrastructure and services, inclusive policies, low-carbon digital footprints and ethical guidelines (Hao et al., 2025; Meath et al., 2026; Sharma et al., 2025; Glcan et al., 2026). Therefore, integrated digital strategies should complement efforts toward sustainable tourism, providing solutions that support environmental sustainability, social inclusion, economic viability and technological innovation, particularly as embodied in the United Nations Sustainable Development Goals. This provides a broad and nuanced view of virtual tourism as a sustainability solution that must be balanced within the context of policy, business strategy, social responsibility and the broader transformation of tourism.

3. Methodology

This study adopts a qualitative exploratory research design to investigate the intersection of virtual travel technologies and the digital economy. A qualitative approach is particularly suited to emerging and under-researched phenomena, allowing for nuanced understanding of technological, behavioural, and economic dynamics in virtual tourism (Creswell & Poth, 2018).

3.1 Search Strategy and Study Selection

Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, this systematic literature review conducted a systematic search for relevant studies to ensure a transparent and comprehensive selection process (Figure 1). The database search, which initially retrieved 545 records, was first screened for duplicate entries, and a total of 98 duplicates were removed, leaving a total of 447 records. These 447 records were then subject to title and abstract screening, where 278 studies were removed that were not relevant to the current topic. 169 full-text articles were evaluated, and 111 were excluded as not being of the required empirical or theoretical nature. A total of 58 studies were selected and analysed in terms of the themes relevant to virtual tourism.

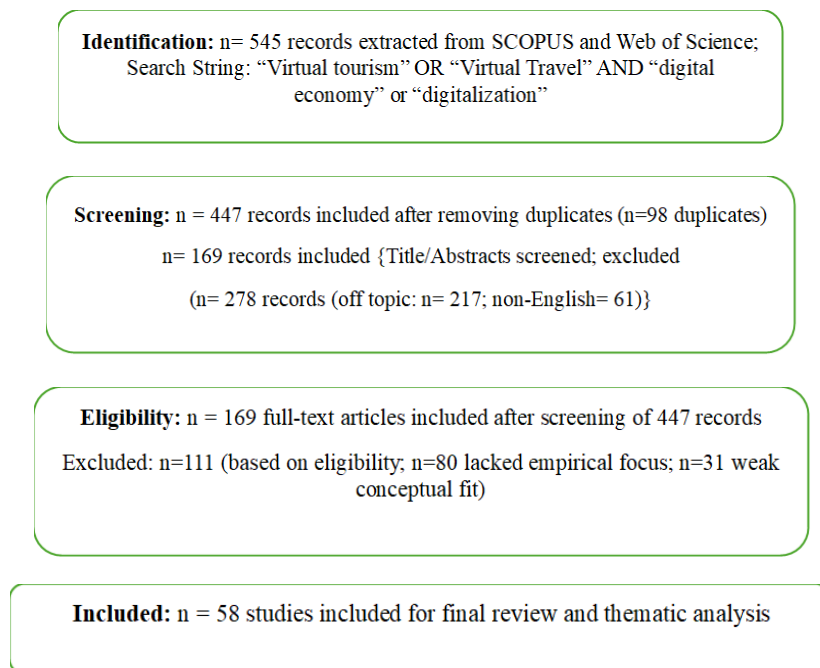


Figure 1. PRISMA Flow Diagram of The Search, Screening, and Inclusion Process

Source: Authors' Analysis based on Literature

3.2 Thematic Analysis Procedure

The thematic analysis followed a six-stage procedure of Braun and Clarke (2006): (1) becoming familiar with the data, (2) generating initial codes, (3) searching for themes (using qualitative tourism research (Nowell et al., 2017)), (4) reviewing the themes, (5) defining the themes, and (6) producing the report. We used ATLAS. ti software for thematic coding of the data to allow conceptual organisation and visualisation of the networks. The three phases of coding involved:

- 1) Open Coding; During this phase, raw codes were identified in the text about virtual travel technologies, business models, sustainability, and consumer behaviour. For example, a statement such as "The high price of virtual headsets, such as Meta Quest and Apple Vision Pro, discourages most people from purchasing them, especially in the developing regions of the world" (adjusted from Smith et al., 2022) resulted in an open code, device affordability barrier. AI personalisation, another open code, stemmed from a description of how AI-enabled algorithms can create personalised itineraries.
- 2) Axial Coding: The open codes were then grouped into themes according to inter-relationships. The codes device affordability barrier, rural connectivity gap, and digital literacy barrier were combined into the axial category of access inequality. This axial category was mapped to the sustainability dimension of our conceptual framework.

Selective Coding: In the final phase of coding, the axial categories were synthesized and clustered into five broader themes.

4. Thematic Analysis and Discussion

Theme 1. Digital Transformation of Tourism Experiences: From Technology Adoption to Immersive Value Creation

The dominant theme found across studies on the literature concerns the shifting of virtual tourism from technology novelty towards an experience-centric, experience-transforming tool. Early work has treated virtual tourism as a visualization device (e.g. Guttentag, 2010; Neuhofer et al., 2014) but research has more recently approached immersive technology as an experiential medium for the facilitation of authentic, memorable and emotionally-engaging experiences (e.g. Lee et al., 2020; Nguyen et al., 2023; Sharma et al., 2025).

This is characterized through the convergence of various immersive technologies – Virtual Reality (VR), Augmented Reality (AR), Artificial Intelligence (AI), mixed reality etc. To allow tourists to experience destinations prior, during and post travel. It has been argued that immersive technologies, rather than simply reproducing the destination digitally, provide travellers with a sense of telepresence, emotional attachment, destination familiarity and experiential learning opportunities (Hoang et al., 2023; Tussyadiah et al., 2018), the latest findings in this area seem to move beyond, even closely fitting into Pine and Gilmore's (1999) experience economy wherein consumers are more concerned with obtaining memorable experiences rather than a tangible product.

Further extending this argument is the new trend of metaverse research where it has been argued that the virtual destination has transformed to becoming independent tourism destinations of their own, which may have their own economic, social, and cultural value (e.g. Hao et al., 2025; Mihalic, 2025; Tran, 2025). Consequently, immersive technologies need to be considered beyond a marketing device and towards being an integral part of the digital tourism economy that generates independent tourism experiences for the tourists.

Nevertheless, several studies have also simultaneously raised warnings that just being highly technologically advanced would not guarantee users' acceptance of these immersive technologies, as what would determine the behavioural intention towards adoption is the perceived authenticity, emotional realism and perceived interactivity, more so than just its novelty value (e.g. Huang & Backman, 2021; Ting et al., 2023). This would be indicative of a progressive move from technology-centred adoption to experience-centred design theory.

Theme 2. Consumer Adoption: Beyond Technology Acceptance toward Digital Experience Acceptance

Another major theme is about consumers' attitude toward virtual tourism. Early studies used TAM and UTAUT approaches largely and reported that the most salient adoption factors were usefulness and ease of use, along with social influence and facilitating conditions (Davis, 1989; Venkatesh et al., 2003). Contemporary works, though, indicate that those mainstream technological adoption theories alone failed to fully predict consumers' behavior and such behavioral intention could also be shaped by the affective (emotional), existential (authenticity), and experiential (presence) aspects such as trust, enjoyment, and perceived value (Chi et al., 2022; Lee et al., 2020; Hoang et al., 2023). Additionally, personalization provided by AI enhanced behavioral intention by shaping individualistic virtual experience, thus increasing the relevancy and satisfaction (Duarte et al., 2020).

Despite these promising prospects, the review notes a paradox. Virtual tourism is claimed to increase the accessibility to potential tourists with mobility or spatial or financial restrictions, but these gains remain unequally distributed as the persistent digital inequality restrict participation (Durrah et al., 2026; Garcia & Lopez, 2023). In addition, many older people or digital marginalized populations have the travel intention but facing obstacles due to technology usage issues (Lehto et al., 2026).

Theme 3. Sustainability as the Emerging Paradigm of Virtual Tourism

One of the key trends discussed in the current literature is that virtual tourism is gaining a new status within the broader discussion of sustainability. Unlike early research on the topic which focused more on issues of destination marketing and the involvement of potential tourists in their online journeys, there has been a recent shift to focus on the use of virtual tourism as a means to achieve environmental, economic and social sustainability goals (Sharma et al., 2025; Zhang & Huang, 2025). For example, we found several studies that outline how virtual tourism offers reduced transportation emissions, is a means of addressing overtourism, has the potential to enhance conservation of destination assets, has the potential to offer environmental education, and makes tourism more accessible (Martinez & Lopez, 2023; Choi & Smith, 2021; Meath et al., 2026).

The production and utilisation of virtual tourism relies upon infrastructure, which is unevenly developed around the world, which has its own environmental consequences. Many studies (Durrah et al., 2026; Yu et al., 2026) pointed out that increased virtual mobility might lead to new patterns of consumption, which will partially offset some of the environmental benefits. This suggests that virtual tourism should not be understood as a substitute for traditional tourism, but rather as one of the many parts of a broader transition to low-carbon tourism. Thus, sustainability outcomes depend on responsible digital innovation, inclusive infrastructure, and effective governance rather than technology alone (Choi & Smith, 2021; Martinez & Lopez, 2023; Tee, 2025; Yu et al., 2026; Meath et al., 2026; Gülcan et al., 2026).

Theme 4. Digital Business Model Innovation in Tourism

While physical visits are essential for the old mode of tourism, traditional tourism enterprises are moving towards the incorporation of immersive technologies in destination marketing, education, entertainment, and the promotion of customers and communities to move away from physical visits (Chen, 2024). New income streams can emerge in digital tourism, such as platform-based ecosystem, virtual travel agents (AI), fintech (Blockchain), NFTs, virtual tour in the metaverse, service subscriptions, and virtual tour event (Roy & Pagaldiviti, 2023; Jie & Yixuan, 2026; Glcan et al., 2026). Compared to the earlier stages of digitisation, which facilitate service provision, those newly created revenue streams generate brand new kinds of tourism activities where there is no need to be there for consumptive purposes, or without space limitations (Tharindu et al., 2026). The blend of fintech, blockchain, and AI enhances the level of consumers' trust via secure payments, transparent transactions, and tailored services (Tharindu et al., 2026).

Conversely, the development of virtual tourism is hampered by high costs, technological constraints and weak digital capacities for tourism firms in the digital world (Smith et al., 2022). Hence, the progress of digitisation remains varied across different segments of the tourism sector.

Theme 5. Governance, Ethics, and Future Research Agenda

Areas concerning security, privacy, digital ownership, intellectual property, algorithmic accountability and transparency, and fair representation in virtual worlds are likely to become critically relevant soon (Ghaderi et al., 2026).

Related studies have indicated unanswered questions in terms of managing virtual cultural heritage, identity, ownership of virtual assets and commercialisation of culture in the metaverses (Hao et al., 2025; Mihalic, 2025). Consumer trust in virtual environments also rests on the foundation of transparent governance and fair usage of AI and privacy protection (Williams & Zhang, 2022). Similarly, workforce transformation is a growing concern, as AI and VR have the potential to drastically reshape jobs in tourism, warranting substantial investment in digital skills development,

education program reforms and continuous learning (Huang & Ho-Mai, 2026). This theme positions governance as the enabling mechanism that links technological innovation with sustainable tourism outcomes (Ghaderi et al., 2026; Williams & Zhang, 2022; Brown et al., 2023; Mihalic, 2025; Hao et al., 2025).

Previously, research has primarily focused on technology adoption, especially perceptions of usefulness and ease of use. More recent studies focus on experience creation, digital sustainability, and ecosystem transformation, indicating greater theoretical sophistication of the domain. The reviewed studies consistently show that virtual tourism should be considered a complementary system rather than a substitute for physical tourism; the development of an ecosystem that combines virtual/immersive technologies with AI, blockchain, fintech, and metaverse platforms, to be integrated into destination management, education, marketing, and sustainable development practices.

The study contributes a conceptual framework (Figure 2), integrating digital innovation, consumer behaviour, business transformation and sustainable tourism outcomes based on thematic analysis and existing theoretical perspectives.

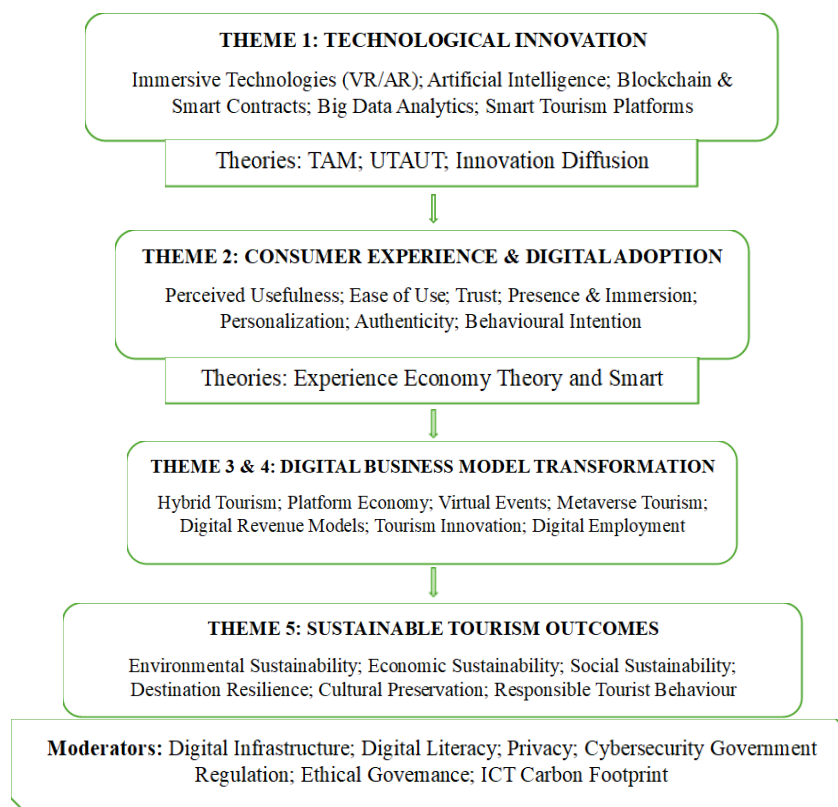


Figure 2. The Conceptual Framework

Source: Author's Analysis

Driving force of innovative digital business models based on the Experience Economy and Smart Tourism Ecosystem Theory, such as hybrid tourism, platform-based services, virtual events and metaverse experiences, that redefine the creation of tourism value and destination management, is consumer adoption. These innovations help to reinforce the Triple Bottom Line of sustainable tourism through improved environmental conservation, economic resilience, and social inclusion and

cultural preservation. However, the framework recognises that these relationships are subject to moderating factors such as digital infrastructure, technological literacy, cybersecurity, ethical governance, regulatory support, and the environmental footprint of digital technologies. Therefore, virtual tourism is not conceptualised as a replacement of physical tourism but rather a complementary ecosystem to support a digitally enabled sustainable tourism development.

5. Conclusion

This systematic literature review provides an overview of the rapidly growing body of knowledge in virtual tourism, emphasising its strategic importance for the promotion of the digital economy and sustainable tourism development. The review included 58 studies published between 2015 and 2026 and identified five major themes: digital transformation with immersive technologies, consumer experience and digital adoption, sustainable tourism development, digital business model innovation, and governance and future readiness. The research proposes a comprehensive conceptual framework that incorporates the Technology Acceptance Model (TAM), Unified Theory of Acceptance and Use of Technology (UTAUT), Innovation Diffusion Theory, Experience Economy Theory, Smart Tourism Ecosystem Theory and the Triple Bottom Line (TBL) to elucidate the interlinkages between technological innovation, consumer behaviour, business transformation and sustainability outcomes.

The findings indicate that virtual tourism has moved from a technological novelty to a complementary tourism ecosystem that boosts visitor engagement, encourages destination resilience, facilitates environmental sustainability, and offers new economic prospects through AI, VR, AR, blockchain, fintech, and metaverse technologies. But success depends on equitable digital access, resilient infrastructure, good governance, cybersecurity, ethical AI implementation, and environmentally sound digital innovation. Theoretical implications of the study are the development of an integrated ecosystem perspective, and practical implications are recommendations for policymakers, destination management organisations, and tourism enterprises to develop inclusive and sustainable digital tourism strategies.

However, the review is restricted to qualitative synthesis of studies in English and the preponderance of research emanating from developed economies. Future research should empirically validate the suggested framework through longitudinal and cross-cultural research and address emerging issues such as metaverse governance, digital inclusion, cybersecurity, and life-cycle environmental impacts of immersive technologies to support resilient and sustainable tourism ecosystems.

Declarations

All authors declare that they have no conflicts of interest.

The authors used AI-based language tools (e.g., ChatGPT by OpenAI) to assist in refining the language of the manuscript. All intellectual content, data interpretation, and conclusions are original and solely the responsibility of the authors.

References

- Babu, S., & Subramoniam, S. (2023). Role of disruptive technologies in realizing virtual tourism. *International Journal of Technology Policy and Management*, 23(1), 45–62. DOI:10.1504/IJTPM.2023.100528.
- Babu, S., & Subramoniam, S. (2023, March). Role of disruptive technologies in realizing virtual tourism. *Proceedings of the 13th Annual International Conference on Industrial Engineering and Operations Management*. DOI:10.46254/AN13.20230383.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. DOI:10.1191/1478088706qp063oa.
- Buhalis, D., & Foerste, M. (2015). SoCoMo: Marketing and management dimensions of social media, content, and co-creation platforms. In *Information and Communication Technologies in Tourism 2015* (pp. 3–16). Springer, Cham. DOI:10.1007/978-3-319-14343-9_1.
- Chen, Z. (2024). *Metaverse in tourism service: Exploring digital tourism innovation*. Asia Pacific Academy of Science Pte. Ltd.
- Chi, X., Wang, Y., & Zhang, H. (2022). Tourists' acceptance of AI services: The role of service value seeking. *Journal of Travel Research*, 61(3), 509–524. DOI:10.1177/00472875211012345.
- Choi, S., & Smith, A. (2021). Distributing tourist flows through virtual reality experiences. *Tourism Management*, 82, 104198. DOI:10.1016/j.tourman.2020.104198.
- Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.
- Daim, T., Ratten, V., & Yilmaz, B. (2022). Virtual reality and augmented reality adoption in heritage tourism: Understanding spatial-temporal engagement. *Journal of Hospitality and Tourism Technology*, 13(3), 456–472.
- Daim, T., Sharma, M., & Singh, P. (2024). *Envisaging AR travel revolution for visiting heritage sites: A mixed-method approach*.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. DOI:10.2307/249008.
- Doyel Mukherjee Prodhan, A., Mitra, A., Mitra Mukherjee, A., & Gangopadhyay, S. (2026). Exploring the Role of Virtual Reality in Promoting Sustainable Tourism Practices Amidst COVID-19 Pandemic. *Harnessing the potential of Artificial Intelligence to Promote Environment Sustainability*.
- Duarte, P., Ferreira, F., & Pimentel, C. (2020). Artificial intelligence in tourism: A review of AI applications. *Annals of Tourism Research*, 82, 102913. DOI:10.1016/j.annals.2020.102913.
- Durrah, O., Salem, I. E., Fathy, E. A., Fouad, A. M., Elbaz, A. M., & Hannawi, S. (2026). The role of digital technologies in enhancing sustainable community-based tourism: A systematic review of opportunities and challenges. *Journal of Hospitality and Tourism Insights*. Advance online publication. DOI: 10.1108/JHTI-11-2025-1371.
- Garcia, M., & Lopez, J. (2023). Bridging the digital divide in virtual tourism: A social justice perspective. *Journal of Tourism Futures*, 9(1), 57–73. DOI: 10.1108/JTF-08-2022-0211.
- García-Medina, I. (2024). Impulse buying in tourism: The ascendant influence of social media influencers on consumer behavior. *International Journal of Tourism Policy*, 16(1), 56–70. DOI: 10.1504/IJTP.2024.
- García-Milon, A., Font, X., & Camprubí, R. (2022). Exploring the economic impact of virtual tourism: Limitations and opportunities. *Tourism Economics*, 28(3), 507–524.

- Ghaderi, Z., Beal, L., & Houanti, L. (2026). Cybersecurity threats in tourism and hospitality: Perspectives from tourists engaging with sharing economy services. *Current Issues in Tourism*, 29(7), 1413–1428. DOI: 10.1080/13683500.2024.2353327.
- Google Earth VR Accessibility Report. (2023).
- Gretzel, U., Sigala, M., Xiang, Z., & Koo, C. (2015). Smart tourism: Foundations and developments. *Electronic Markets*, 25(3), 179–188. DOI: 10.1007/s12525-015-0196-8.
- Guttentag, D. A. (2010). Virtual reality: Applications and implications for tourism. *Tourism Management*, 31(5), 637–651. DOI: 10.1016/j.tourman.2009.07.003.
- Gülcan, B., Erdem, D., Bayar, S. B., Cobanoglu, C., & Yüce, A. (2026). Sustainability of tourism and recreation in transition from the real world to the metaverse. *Journal of Hospitality and Tourism Insights*, 9(5), 2029–2049. DOI: 10.1108/JHTI-03-2025-0444.
- Hao, F., Liu, S., Zhang, C., & Chon, K. K. S. (2025). Metaverse in tourism: From virtual worlds to sustainable worlds. *Tourism Review*, 80(8), 1495–1514. DOI: 10.1108/TR-03-2024-0188.
- Hoang, S. D., Dey, S. K., Tučková, Z., & Pham, T. P. (2023). Harnessing the power of virtual reality: Enhancing telepresence and inspiring sustainable travel intentions in the tourism industry. *Technology in Society*, 75, 102378.
- Huang, S. (Sam), & Ho-Mai, N. T. (2026). The great turning point: Challenges and solutions for tourism higher education in the AI age. *Journal of Teaching in Travel & Tourism*, 26(2), 144–159. DOI: 10.1080/15313220.2025.2607356.
- Huang, Y.-C., & Backman, S. J. (2021). The paradox of immersive technologies: User engagement versus digital fatigue in virtual tourism. *Computers in Human Behavior*, 117, 106648.
- Jie, P., & Yixuan, Z. (2026). The gone tour guide: Online performance, digital work, and spatial negotiation of travel live streamers in the digital economy era. *Journal of China Tourism Research*, 22(2), 459–485. DOI: 10.1080/19388160.2026.2670760.
- Kumar, P., Dubey, S., & Sahu, A. K. (2022). A review on smart and intelligent techniques for digital tourism. *International Journal of Scientific Research in Computer Science Engineering and Information Technology*, 7(6), 100–110. DOI: 10.32628/cseit228651.
- Lee, S., Kim, H., & Han, H. (2020). Authenticity and experience value in virtual tourism: A moderated mediation model. *Journal of Travel Research*, 59(8), 1406–1423.
- Lehto, X. Y., Mohamed, M. E., Chen, J., & Lehto, M. R. (2026). Seniors, technology, and travel: A review, reappraisal, and future research directions. *Journal of Travel Research*, 65(4), 923–942.
- Martinez, J., & Lopez, R. (2023). Virtual tours and sustainability: Educating tourists on cultural heritage. *Journal of Hospitality and Tourism Technology*, 14(1), 78–91. DOI: 10.1108/JHTT-11-2022-0154.
- Meath, C., Smith, A., Karlovsek, J., Bubb, L., Bohnsack, R., Glencross, M., & Bidmon, C. (2026). Designing and evaluating technology-enabled sustainable tourism offerings: A case study of virtual reality conferences. *Journal of Sustainable Tourism*, 1–25. DOI: 10.1080/09669582.2026.2626343.
- Mihalic, T. (2025). Metaversal sustainability: Conceptualisation within the sustainable tourism paradigm. *Tourism Review*, 80(8), 1473–1480. DOI: 10.1108/TR-09-2023-0609.
- Neuhofer, B., Buhalis, D., & Ladkin, A. (2014). A typology of technology-enhanced tourism experiences. *International Journal of Tourism Research*, 16(4), 340–350. DOI: 10.1002/jtr.1958.

- Neuhofer, B., Buhalis, D., & Ladkin, A. (2015). Smart technologies for personalized experiences: A case study in tourism. *Information Technology & Tourism*, 15(2), 173–188.
- Nguyen, T. B. T., Le, T. B. N., & Chau, N. T. (2023). How VR technological features prompt tourists' visiting intention: An integrated approach. *Sustainability*, 15(6), 4765.
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, 16(1), 1–13. DOI: 10.1177/1609406917733847.
- Pine, B. J., & Gilmore, J. H. (1999). *The experience economy: Work is theatre & every business a stage*. Harvard Business Press.
- Przybylska, N. (2026). Green travel in the digital era: Contributions of digital marketing to sustainable tourism. In *Digital marketing advances in tourism: Theoretical bases and applications*.
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.
- Roy, B., & Pagaldiviti, S. (2023). Advancements in arena technology: Enhancing customer experience and employee adaptation in the tourism and hospitality industry. *Smart Tourism*, 4. DOI: 10.54517/st.v4i1.2330.
- Sarkodie Amoako, N., Esi Akyere Acquah, H., & Dery, J. (2024). How green are hotels in Ghana? Evidence from star-rated hotels in Kumasi Metropolitan Area. *ASEAN Journal on Hospitality and Tourism*, 22(3), 282–297. DOI: 10.5614/ajht.2024.22.3.03.
- Sharma, I., Lim, W. M., & Aggarwal, A. (2025). Virtual reality as a sustainable alternative for authentic and satisfying tourism experiences. *Tourism Recreation Research*, 50(7), 1826–1838. DOI: 10.1080/02508281.2024.2413832.
- Smith, T., Taylor, M., & Zhao, L. (2022). The cost paradox of virtual reality tourism. *Journal of Travel Research*, 61(5), 1020–1035. DOI: 10.1177/00472875211000421.
- Srbu, R., Dina, R., & Alecu, F. (2018). Social media advertising trends in tourism. *Ecoforum Journal*, 7(1), 1016–1024. DOI: 10.24818/ea/2018/S12/1016.
- Suyunchaliyeva, M., Shedenova, N., Kazbekov, B., & Akhmetkaliyeva, S. (2020). Digital economy: Information technology and trends in tourism. *E3S Web of Conferences*, 159, 04029. DOI: 10.1051/e3sconf/202015904029.
- Tee, M. K. A. (2025). Decarbonizing hospitality: A theoretical framework for achieving net zero. *ASEAN Journal on Hospitality and Tourism*, 23(3), 267–285. DOI: 10.5614/ajht.2025.23.3.05.
- Tharindu, A., Doluwarawaththa Gamage, S. D., Ananda, J., & Asanga, R. (2026). Bridging the green gap: Fintech adoption and eco-conscious luxury booking behavior among Generation Z and Millennials—A systematic literature review. *ASEAN Journal on Hospitality and Tourism*, 24(1), 103–117. DOI: 10.5614/ajht.2026.24.1.07.
- Ting, D. H., Tseng, P. H., & Hsu, C. H. (2023). Authenticity challenges in virtual heritage tourism: An empirical study. *Journal of Sustainable Tourism*, 31(2), 267–287.
- Tran, L. T. T. (2025). Metaverse-driven sustainable tourism: A horizon 2050 paper. *Tourism Review*, 80(1), 349–359. DOI: 10.1108/TR-12-2023-0857.
- Tussyadiah, I. P., Wang, D., Jung, T. H., & tom Dieck, M. C. (2018). Virtual reality, presence, and attitude change: Empirical evidence from tourism. *Tourism Management*, 66, 140–154. DOI: 10.1016/j.tourman.2017.12.003.
- UNWTO. (2018). *International recommendations for tourism statistics 2008*. United Nations World Tourism Organization.

- Vancia, A. P. P., Blătescu, C. A., Bălătescu, G., Tecu, A. S., Chiu, I. B., & Duguleană, L. (2023). Examining the disruptive potential of Generation Z tourists on the travel industry in the digital age. *Sustainability*, 15(11), 8756. DOI: 10.3390/su15118756.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478.
- Voronkova, L. (2018). Virtual tourism: On the way to the digital economy. *IOP Conference Series: Materials Science and Engineering*, 463, 042096. DOI: 10.1088/1757-899X/463/4/042096.
- Williams, K., & Zhang, L. (2022). Using digital innovations to promote lesser-known destinations. *Information Technology & Tourism*, 24(2), 125–140. DOI: 10.1007/s40558-021-00213-6.
- Yu, K., Hannam, K., & Gössling, S. (2026). The sustainability paradox of digital nomadism: Mobility, consumption, and socio-environmental engagement. *Tourism Review*, 81(4), 1376–1395. DOI: 10.1108/TR-06-2025-0599.
- Zhang, Z.-H., & Huang, H.-C. (2025). Enhancing sustainable tourism through virtual reality: The role of collectable experiences in well-being and meaning in life. *Sustainability*, 17(13), 5809. DOI: 10.3390/su17135809.