MOSUNMOLA LABAKE OMOTUNDE

THE ROLE OF VIRTUAL EXPERIENCES IN SHAPING TOURISTS' PERCEPTIONS OF THE DESTINATION: AN EXPLORATION OF METAVERSE IN THE CONTEXT OF TOURISM

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Masters in Management

Dissertation made under the supervision of:
Professor Ana Cláudia Campos

UNIVERSITY OF ALGARVE

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Work Authorship Declaration

I declare to be the author of this work, which is unique and unprecedented. Authors and works consulted are properly cited in the text and are in the listing of references included.

Mosunmola Labake Omotunde

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ABSTRACT

This dissertation examines Metaverse influence on tourists' perceptions of destinations and its potential to transform the tourism industry. The main goal is to explore the role of Metaverse in shaping tourist experiences, destination marketing, and sustainability practices through immersive and interactive virtual environments. This will be done by conducting a systematic literature review (SLR) to 68 peer-reviewed articles from Scopus database, focusing on themes such as user engagement, technological adoption, and sustainability. The results of the review allow for a characterization of Metaverse as a powerful tool for enhancing tourist engagement through immersive and interactive experiences, offering a sustainable alternative to traditional tourism by reducing physical travel and environmental impact. However, the study's findings indicate that challenges, such as technological accessibility, ethical concerns, and the digital divide hinder its widespread adoption. Conclusions reached led to the presentation of key recommendations for future research, including the need for cross-cultural studies, longitudinal analyses, and ethical governance to ensure the responsible and inclusive development of Metaverse tourism.

Keywords: Metaverse, Immersive Experiences, Tourism, Sustainability, Destination Marketing, Technology Adoption.

RESUMO

O objetivo principal da dissertação é explorar como o Metaverso influencia a forma como os turistas percebem, avaliam e se envolvem com os destinos turísticos, ao mesmo tempo que oferece implicações práticas para o marketing de destinos e práticas sustentáveis. Para esse efeito, foi conduzida uma Revisão Sistemática da Literatura (RSL). Este método permite uma revisão rigorosa e integrada, que sintetiza o estado da arte sobre o tema investigado e oferece uma base sólida para identificar *gaps* ou lacunas teóricas e metodológicas que fundamentem linhas futuras de investigação.

Através da RSL, foram encontrados e analisados 68 artigos que compuseram a amostra final do estudo. Todos os artigos foram alvo de avaliação por pares em regime de *double-blind review*, garantindo deste modo maior rigor científico e qualidade no processo metodológico. Os 68 artigos incluídos foram publicados entre 2015 e 2024 e extraídos da base de dados Scopus. A Scopus é uma base de dados reconhecida internacionalmente pela sua abrangência e relevância académica nas áreas de Turismo e Gestão.

Metodologicamente, foi adotado o enquadramento teórico-metodológico TCM (Teoria-Contexto-Método), permitindo uma estruturação dos dados em torno das teorias aplicadas, contextos de investigação (como geografia, setor e tecnologia) e métodos utilizados. Além da análise descritiva, foi conduzida uma análise temática utilizando o Microsoft Excel. O processo envolveu a extração de dados relevantes de cada artigo, codificação inicial com base em padrões recorrentes, agrupamento de temas semelhantes, refinamento e categorização final em três eixos principais: (1) perceção e comportamento do turista, (2) sustentabilidade e marketing de destinos e (3) aplicação do Metaverso no ciclo turístico.

A análise temática identificou sete temas principais emergentes:

1. Tecnologias imersivas no turismo: O Metaverso promove o envolvimento do utilizador através de ambientes tridimensionais realistas, como realidade virtual (VR) e aumentada (AR), que permitem experiências personalizadas e interativas.
2. Sustentabilidade: Reduz viagens físicas e emissões de carbono, oferecendo uma alternativa verde ao turismo convencional. Destaca-se o potencial do Metaverso para se alinhar com os Objetivos de Desenvolvimento Sustentável (ODS) da ONU.
3. Marketing de destinos e colaboração entre *stakeholders*: Ferramenta poderosa de *branding*, valorizando conteúdos interativos e personalizados, como *tours* virtuais e *gamificação*, para atrair turistas.
4. Implicações educativas e culturais: Preservação de patrimónios culturais digitais e educação experiencial, como museus virtuais e reconstruções históricas.
5. Adoção tecnológica e comportamento do consumidor: A aceitação do Metaverso está ligada à utilidade percebida e à facilidade de uso, conforme explicado pelo TAM e pela Teoria do Comportamento Planeado (TPB).
6. Presença e telepresença: Os utilizadores relatam sentimentos de presença real em ambientes virtuais, influenciando a sua conexão emocional com os destinos.
7. Desenvolvimento económico e sustentável: Novos modelos de negócio surgem a partir da economia digital associada ao Metaverso, como NFTs de destinos turísticos e plataformas de turismo virtual.

Do ponto de vista teórico, a investigação identificou diversas abordagens fundamentais, como o Modelo de Aceitação de Tecnologia (TAM), a Teoria da Presença e a Lógica Dominante de Serviço (SDL), além de outras estruturas como a Teoria da Ação Planeada (TPB), a Teoria da Autodeterminação (SDT) e a Teoria da Riqueza de Mídia (MRT). A análise revelou uma predominância do uso do TAM para explicar a aceitação e intenção de uso do Metaverso, enquanto a MRT foi aplicada para entender o impacto sensorial das experiências virtuais na satisfação do utilizador. A SDL foi relevante para compreender a cocriação de valor entre turistas e destinos em ambientes virtuais.

Os resultados revelam que o Metaverso está a transformar a experiência turística, oferecendo pré-visualizações imersivas que influenciam a intenção de visita, a tomada de decisão e o envolvimento emocional com os destinos. Essas experiências digitais permitem simulações em tempo real que transcendem as barreiras geográficas, oferecendo aos turistas a oportunidade de explorar locais de forma interativa antes de viajar fisicamente. Através da recriação de espaços sensoriais digitais, os utilizadores constroem expectativas, desenvolvem itinerários e formam conexões emocionais com os destinos.

Contudo, o estudo também identifica barreiras relevantes para a adoção ampla do Metaverso no turismo. Entre os principais desafios estão a acessibilidade tecnológica, a desigualdade digital, os custos dos equipamentos, a privacidade dos dados e a ausência de regulamentações éticas claras. Muitos dos artigos analisados concentram-se em países desenvolvidos, o que limita a aplicabilidade dos resultados a contextos menos digitalizados, como regiões em desenvolvimento. O estudo destaca ainda a necessidade urgente de políticas e estruturas de governança ética para garantir uma implementação inclusiva e segura do Metaverso no turismo. Para tal, são recomendadas investigações futuras em contextos interculturais e análises longitudinais que avaliem os efeitos a longo prazo das experiências virtuais no comportamento turístico e no desenvolvimento sustentável dos destinos. Além disso, sugere-se a exploração de como a Inteligência Artificial (IA) e o *blockchain* podem melhorar a segurança e a personalização das experiências no Metaverso, bem como estudos sobre o equilíbrio entre turismo físico e virtual para evitar a substituição completa das viagens tradicionais.

Em conclusão, o Metaverso representa uma inovação transformadora com o potencial de reconfigurar a forma como os turistas percebem, planeiam e experienciam viagens. Através de interações digitais imersivas, este pode complementar ou até substituir parcialmente o turismo tradicional, contribuindo para uma indústria mais sustentável, inclusiva e centrada no utilizador. No entanto, alcançar esse potencial exige uma abordagem estratégica e colaborativa que aborde desafios técnicos, sociais e éticos. Este estudo oferece uma perspetiva abrangente sobre essas questões e estabelece as bases para investigações futuras que possam aprofundar e expandir o papel do Metaverso no turismo global. Apesar das limitações, como a ausência de estudos empíricos em países em desenvolvimento e a escassez de dados longitudinais, este trabalho fornece um contributo teórico e prático substancial para a compreensão do papel do Metaverso na evolução do setor turístico. Num contexto onde o crescimento tecnológico atinge uma rápida disseminação e influência no setor do turismo, importa perceber as suas implicações teóricas e práticas. Do ponto de vista teórico, amplia o entendimento das tecnologias disruptivas no turismo e fornece uma base para futuros modelos de investigação. Do ponto de vista prático, oferece recomendações valiosas para gestores de destinos,

profissionais de marketing e decisores políticos, sugerindo formas de integrar experiências virtuais nas estratégias de promoção e gestão turística.

Palavras-chave: Metaverso, Experiências Imersivas, Turismo, Sustentabilidade, Marketing de Destinos, Adoção de Tecnologia.

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ABBREVIATIONS LIST

AR Augmented Reality
AI Artificial Intelligence
BI Behavioural Intention
ECM Expectation-Confirmation Model
ESG Environmental, Social, and Governance
GDPR General Data Protection Regulation
HMD Head-Mounted Display
ICT Information and Communication Technologies
MR Mixed Reality
MRT Media Richness Theory
NGT Nominal Group Technique
SDG Sustainable Development Goals
SDL Service-Dominant Logic
SDT Self-Determination Theory
SEM Structural Equation Modelling
SQLR Systematic Quantitative Literature Review
TAM Technology Acceptance Model
TCM Theory-Context-Method Framework
TPB Theory of Planned Behaviour
UN United Nations
UTAUT Unified Theory of Acceptance and Use of Technology
VR Virtual Reality

CHAPTER 1. INTRODUCTION

Information and Communication Technologies (ICT) have influenced various areas of the tourism industry, ensuring that the tourism industry is among the leading beneficiaries of modern technologies (Buhalis and Law, 2008). ICT has been at the forefront of transforming the tourism industry, with Metaverse emerging as a groundbreaking innovation that allows tourists to interact with travel experiences in immersive virtual environments. For instance, through Metaverse, potential travelers can explore destinations in 3D virtual spaces, enhancing the anticipation and planning process (Jafar and Ahmad, 2024).

Among these, Metaverse is one of the progresses made in the technological context of the tourism industry (Constantin et al, 2023) with strong impact on accessibility, engagement, and sustainability. It has become an innovative platform within the digital environment. Metaverse recreates virtual spaces that transcend traditional geographic boundaries, enabling people to engage with destinations in immersive and interactive ways (Leung and Lin, 2023; Buhalis et al., 2023).

The need for virtual experiences to attract visitors informed the unfolding destination marketing slot in Metaverse (Yung and Khoo-Lattimore, 2019). This is premised on the fact that deliberate efforts are made to showcase in Metaverse the peculiarities and salient features of a destination by the creation of engaging and interactive content which ultimately results in increased tourist interest and visitation (Constantin et al, 2023).

Metaverse, though a new phenomenon, represents a defining paradigm shift across many industries, especially in the tourism industry, offering opportunities for creating immersive and interactive experiences that go beyond the traditional travel limitations (Buhalis et al., 2023). Metaverse is unique as it combines digital and physical realities, enabling tourists to view destinations virtually and make more informed travel decisions (Buhalis et al., 2023). In addition, by decreasing physical travel while yet increasing international tourism experiences, it offers a sustainable alternative to tourism areas that continue to confront issues like pandemics, climate change, and overtourism (Adnan, Rashed and Ali, 2024; Go and Kang, 2023).

Additionally, Metaverse expands tourism marketing's global reach, enabling travel

locations to draw a wide range of visitors regardless of geographic limitations (Tussyadiah, Jung, and Dieck, 2018). Destinations can draw attention to their distinctive traits and experiences and potentially boost tourism by producing highly interactive content. In addition to revolutionizing destination marketing, Metaverse transforms how tourism services are delivered, creating new revenue streams and innovative business models in the travel industry (Constantin et al., 2023).

Many scholars across multiple disciplines have conducted and are still conducting research in the context of tourism, concentrating on its uses and consequences for tourist experiences and destination marketing. Buhalis and Law (2008) produced noteworthy research that established the groundwork for comprehending the function of ICT in tourism. Metaverse is transforming tourist management by providing immersive experiences that connect the digital and real worlds, according to more recent research by Leung and Lin (2023). Agapito (2020) discussed the emotional and sensory effects of virtual tourism experiences, providing insights into how immersive technologies, including Metaverse, enhance visitors' perceptions and engagement.

Other scholars, like Yung and Khoo-Lattimore (2019), have concentrated on the use of Metaverse for destination marketing, stressing the significance of producing interactive material that affects travelers' choices. The study by Jafar and Ahmad (2024) explores how Metaverse can replicate real-world settings, influencing people's desire to travel through immersive virtual experiences. The collection of research highlights the increasing scholarly interest in comprehending the influence of Metaverse on tourism and its potential for strategic destination promotion.

Regardless of the increase of research conducted on ICT, Metaverse and tourism, many gaps still exist. Although the technological aspects of Metaverse are widely discussed, there is a lack of thorough research on the psychological and emotional effects of these virtual experiences on travelers' decision-making processes (Buhalis et al., 2023). Furthermore, a large portion of the published literature highlights the potential advantages of Metaverse, but fewer studies have looked at the difficulties and restrictions that come with putting it into practice, including user acceptance, technological constraints, and accessibility (Huang et al., 2016; Agapito, 2020).

Understanding Metaverse's long-term effects on sustainable tourism is another

crucial area of research (Tran, 2024). Recent studies suggest that virtual experiences primarily complement rather than replace physical travel, serving as a sustainable alternative that reduces environmental impact while enhancing destination engagement (Go & Kang, 2023; Mihalic, 2024). However, empirical evidence on long-term substitution effects remains limited. Furthermore, empirical research that examines the efficacy of Metaverse-based marketing tactics in various cultural contexts and demographic groups is required (Tussyadiah, Jung, and Dieck, 2018). A more comprehensive knowledge of Metaverse's function and future direction in the travel and tourism sector would result from filling in these gaps.

This research aims to identify and understand how virtual experiences in Metaverse influence tourists' perceptions of destinations through a systematic literature review (SLR). Moreover, it examines how these virtual tours impact the tourism sector, the efficacy of destination positioning within Metaverse, and the technology that supports these virtual interactions.

It will additionally analyze how these innovations will shape the future of the tourism industry. The need for virtual experiences to attract visitors informed the unfolding destination marketing slot in Metaverse (Yung and Khoo-Lattimore, 2019). This is premised on the fact that deliberate efforts are made to showcase in Metaverse the peculiarities and salient features of a destination by the creation of engaging and interactive content which ultimately results in increased tourist interest and visitation (Constantin et al, 2023).

CHAPTER 2. LITERATURE REVIEW

Metaverse is a disruptive technology revolutionizing tourism management and marketing by enabling immersive experiences that converge the physical and digital worlds (Leung and Lin, 2023). These virtual environments allow tourists to explore destinations in ways that transcend physical limitations, enhancing their overall engagement and perceptions through digitally immersive experiences (Buhalis, Leung, and Lin, 2023).

Metaverse serves as a powerful tool for pre-visit previews, enhancing tourists' anticipation and planning, and can even function as a standalone virtual tourism experience (Leung and Lin, 2023). By replicating destinations in terms of touch-and-feel, Metaverse generates emotional reactions and provides tourists with a first glimpse of a place before their journey, helping them build expectations and develop itineraries (Buhalis et al., 2023).

Through Metaverse, tourists gain value-added experiences, from exposure to destination information pre-trip to enriched content once at the destination (Agapito, 2020). This technology also enables destinations to reach a broader audience, transcending geographical borders and introducing new marketing dynamics due to its global reach (Tussyadiah, Jung, and Dieck, 2018).

At the heart of this study are two key concepts: Metaverse and Virtual Reality (VR). Metaverse is a fully immersive and interactive virtual world where users can engage with a shared digital space in real time. It is expected to become a successor to the internet, facilitating new modes of communication, consumption, learning, and entertainment, while reinventing numerous spheres of human activity (Buhalis et al., 2023).

VR, on the other hand, is a simulation technology that provides users with immersive experiences through 3D near-eye displays and position tracking (Jafar and Ahmad, 2024). In the context of tourism, VR allows potential visitors to immerse themselves in a simulated environment of a destination, using tools like wired gloves or data gloves to interact with the virtual space and make informed decisions about their travel plans (Buhalis et al., 2023).

Several theoretical frameworks underpin the study of virtual experiences in tourism.

The Experience Economy framework highlights the creation of immersive experiences as a way to differentiate destinations and enhance their appeal (Pine and Gilmore, 2013). Memorable experiences, which are as valuable as products and services, are central to this framework.

The Technology Acceptance Model (TAM) explains how consumers adopt new technologies, emphasizing the role of 'Perceived Usefulness' (how VR aids decision-making) and 'Perceived Ease of Use' (how user-friendly VR is) in influencing 'Behavioural Intention to Use' and 'Actual System Use' (Disztinger et al., 2017; Venkatesh & Bala, 2021). For example, VR's ability to simulate real-world environments in a controlled setting makes it a powerful tool for previewing destinations and influencing travel intentions (Disztinger et al., 2017). The immersiveness of VR can also induce a flow state, enhancing tourists' engagement and perception of a destination (Csikszentmihalyi, 1990).

The evolution of VR and Metaverse has been remarkable. The first VR head-mounted display (HMD), known as the "Sword of Damocles," was developed in the 1960s, marking the beginning of a journey that has seen VR transition from rudimentary 3D models to sophisticated, immersive environments (Huang et al., 2016).

The term 'Metaverse' was coined in Neal Stephenson's 1992 science fiction novel Snow Crash, where it described a virtual reality-based internet replacement system (Huang et al., 2016). Currently, 'Metaverse' refers to a shared virtual space that combines the internet, augmented reality (AR), and digitally enhanced elements of the physical world, enabling users to interact with computer-generated environments and other people (Huang et al., 2016).

Technologies, like blockchain, are enhancing the safety and economy of Metaverse, while gadgets like Oculus Quest, HTC Vive, and PlayStation VR bring immersive experiences to consumers (Gretzel et al., 2015). Social VR applications such as VRChat and AltspaceVR are also emerging as key social spaces within Metaverse (Gretzel et al., 2015).

Despite its transformative potential, the adoption of Metaverse and VR in tourism faces significant challenges. High costs associated with VR equipment and

infrastructure remain a barrier. For instance, high-end VR headsets like the Oculus Quest 2 or HTC Vive Pro can cost hundreds of dollars, making them inaccessible to many individuals and small tourism businesses (Yung & Khoo-Lattimore, 2019). Additionally, the need for high-speed internet and advanced computing hardware exacerbates these costs, particularly in developing regions where such infrastructure is lacking.

Privacy concerns are another critical issue. Metaverse relies heavily on data collection to create personalized experiences, raising questions about how user data is stored, shared, and protected. For example, a case study of Facebook's (now Meta) *Horizon Worlds* revealed concerns over data breaches and unauthorized use of personal information, highlighting the need for robust data privacy regulations (Zuboff, 2019).

Ethical concerns further complicate the adoption of these technologies. Issues such as digital addiction and the blurring of reality and virtuality must be addressed to ensure responsible use of Metaverse in tourism. Griffiths (2018) highlights how excessive use of digital technologies, including VR, can lead to addictive behaviors, particularly among adolescents. Similarly, Slater and Sanchez-Vives (2016) discuss how immersive VR can blur the boundaries between reality and virtuality, leading to potential psychological effects such as dissociation.

Equity and accessibility are critical considerations in the widespread adoption of immersive tourism technologies. Factors such as cost, bandwidth, and tech literacy disproportionately affect different user groups. For example, rural or low-income areas often lack the infrastructure (e.g., high-speed internet) to support VR experiences, creating a digital divide (Gretzel et al., 2015).

Similarly, older adults or less tech-savvy users may struggle to adopt these technologies due to their complexity. Initiatives such as subsidized VR equipment or user-friendly interfaces can help bridge these gaps. For instance, the "VR for Good" program by Meta has provided VR headsets to underserved communities, enabling them to access immersive educational and tourism experiences (Meta, 2022).

Several tourism companies have successfully integrated VR and Metaverse into

their operations. For example, Marriott Hotels launched the “Teleporter” VR experience, allowing users to virtually visit destinations like Hawaii or London. This initiative not only boosted customer engagement but also increased bookings by providing a taste of the destination before the trip (Buhalis et al., 2023). Similarly, Thomas Cook introduced the “Try Before You Fly” VR experience, which allowed customers to explore holiday destinations in-store. This innovative approach led to a 190% increase in New York holiday bookings (Disztinger et al., 2017).

While Metaverse and VR hold immense potential for tourism, several research gaps remain. Further research should investigate how ethical concerns, high equipment costs, and varying digital infrastructures impact the widespread adoption of immersive tourism technologies across diverse cultural contexts.

Additionally, future studies could explore how the adoption of Metaverse in society is leading to new theories, contexts, and methods yet uncovered. For example, how do cultural differences influence the acceptance of VR in tourism? What role can Artificial Intelligence (AI) and blockchain play in enhancing the security and accessibility of Metaverse? Addressing these questions will provide a more comprehensive understanding of the opportunities and challenges associated with immersive tourism technologies.

Metaverse and VR are reshaping the tourism industry by offering immersive, interactive experiences that transcend physical limitations. However, challenges such as high costs, privacy concerns, and accessibility issues must be addressed to ensure equitable and responsible adoption. By identifying specific research gaps and future directions, this review provides a foundation for further exploration into the transformative potential of these technologies in tourism. As Metaverse continues to evolve, it promises to redefine how we experience and engage with the world, creating new opportunities for innovation and connection.

CHAPTER 3. METHODOLOGY

This study used the Systematic Literature Review (SLR) method, which is a systematic procedure for conducting a literature review which involves identifying, collecting, organizing, selecting, and analyzing literature sources collected from databases (Xiao & Watson, 2019). The SLR is a dependable and repeatable technique for conducting literature reviews (Ribau, Moreira, & Raposo, 2018). An explicit summary of the known and unknown components of a particular practice-related question can be achieved by the systematic literature review approach (Briner, Denyer, & Rousseau, 2009). DeMatos et al, (2021) and Moher et al. (2015) state that SLR necessitates proceeds according to the steps (Table 3.1) identified subsequently.

Table 3.1. Article Selection and Screening Steps

Steps	Description
1. Define Scope and Aim	Establish the research question: *What is the role of Metaverse in shaping tourists' perceptions of the tourism destination?*
2. Create Review Protocol	Develop inclusion/exclusion criteria and Boolean search strings (e.g., "Metaverse" AND "Tourism") to focus on relevant concepts and minimize biases.
3. Literature Search	Use Scopus database due to its broad subject coverage and impact. Criteria: peer-reviewed, English, Social Sciences, relevant keywords in title/abstract.
3.1. Article Screening	Import search output (112 articles) into Mendeley, remove duplicates (n=40), screen 72 articles based on relevance to research objectives. To filter the articles, the researcher examined each manuscript's title, abstract, and keywords. Three categories are applied to group articles: A) The terms "Metaverse" and "Tourism" were mentioned explicitly in the article's keywords, abstract or title. B) "Metaverse" and "Tourism" were not stated explicitly but it can be assumed. C) The articles are unrelated to the idea of "Metaverse" and "Tourism"
3.2. Expand Article Pool	Articles in category A were chosen by the researchers with 11 articles removed . The outcomes were: Total = 61 articles Identify 7 additional articles through reference search, ensuring they meet inclusion criteria. Final total: 68 articles.
4. Extract Data	Use Mendeley and Excel to summarize data from full-text articles, including author, year, journal, theories, context, and methods (TCM framework).
5. Synthesize Results	Perform thematic and deductive content analysis to group themes (e.g., theoretical frameworks) and subthemes, leveraging prior studies for structure.
6. Conduct Additional Analysis	Finalize results into two categories: descriptive analysis and application of the TCM framework.

Source: Adapted from Wattanacharoensil and La-ornual (2019) and DeMatos et al. (2021).

First step, the ***scope and aim*** of the SLR is established by defining the research question(s). The purpose of this study is to provide an answer to the following research question: *What is the role of Metaverse in shaping tourists' perceptions of the tourism destination?*

Second step, the ***adoption of a review protocol***. Appendix 1 contains the protocol used in the present study. To determine which articles to include and which ones to exclude, one of the researchers looked at specific strings and criteria, using similar method of other studies (e.g., Vada et al., 2020). Boolean operators together with search strings serve as established methods in systematic literature reviews since they enable researchers to focus on theoretical concepts and prevent excessively large datasets while reducing selection biases (Kitchenham et al. 2009). The Boolean operator and search strings used are shown in Table 3.2.

Table 3.2. Search Terms and Boolean Operator on Scopus

Boolean operator without any selection criteria	***Scopus***
"Metaverse" ***TITLE-ABS-KEY ("Metaverse")***	**7,346**
"tourism" ***TITLE-ABS-KEY ("Tourism")***	**169,448**
"Metaverse" and "Tourism" ***TITLE-ABS-KEY (Metaverse) AND TITLE-ABS-KEY ("Tourism")***	**112**
"Metaverse" and "Tourism" ***(TITLE-ABS-KEY ("Metaverse") AND TITLE-ABS-KEY ("Tourism") AND (LIMIT-TO (SUBJAREA, "SOCI") AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (LANGUAGE, "English"))***	**68**

Source: Adapted from DeMatos et al. (2021).

The terms "Metaverse" and "Tourism" were selected in order to: (i) concentrate on the key concepts utilized by the theoretical framework; (ii) prevent retrieving an unfeasible large sample of articles; and (iii) minimize possible biases, taking into account the objectives of the study.

The **third step** consisted of the ***literature search*** that was conducted using the Scopus database. It is one of the largest research databases that covers a very broad range of subjects and disciplines (Agapito, 2020) and its use is recurrent (DeMatos et al., 2021). Scopus was selected due to it having a higher impact and a broader database than most other databases (Gorraiz et al., 2016). The key criteria for article selection included peer review, English language writing, and relevance to Social Science disciplines. Only articles with at least one Boolean term in the title, abstract,

or keywords were included for screening. To minimize variability and facilitate the later analysis of the results, these criteria are a standard practice in reviews of this kind (Vada et al., 2020).

As a result of the search output, 112 papers were identified, and their titles, abstracts, and keywords were imported into Mendeley.com, a reference manager program. After the elimination of duplicate publications (n=40), an initial list of 72 that met the objectives and inclusion criteria of the study were obtained. These titles, abstracts, objectives, research contexts (Metaverse and tourism), and keywords have been thoroughly screened.

Out of the papers reviewed, 11 were excluded as they did not align with the research objectives of this study, which focus on the transformative potential of Metaverse in tourism and sustainability. For instance, Zaman et al. (2022) explored Metaverse space travel and COVID-19 travel anxiety, a niche topic that diverges from the broader focus of this research. Other articles were excluded due to their emphasis on areas such as eco-literacy, brand engagement, language learning, VR systems, literary theory, and XR development strategies, which, while related to virtual environments, do not directly address the core themes of tourism. Additionally, some papers were conceptual or duplicates, lacking empirical insights relevant to this study. These exclusions ensure the literature review remains focused and aligned with the research objectives.

Consequently, 61 peer-reviewed publications were included, and the full texts of these articles were retrieved for content analysis (DeMatos et al., 2021; Mustapha et al., 2019). In addition, 7 other papers were identified through the reference search as a result of the full-text evaluation of the reviewed articles. These articles were included in the SLR because they addressed Metaverse, satisfied the inclusion criteria, and were published recently. Hence, the total count of articles considered for the study is 68.

The **fourth step**, which is to ***extract literature***, entailed using an Excel spreadsheet to summarize and list the data obtained from the 68 full-text articles. This included a thematic and descriptive analysis (e.g., the names of the authors, the year of publication, journal), and the theories, context and methods (TCM) approach. The TCM approach "provides a structured exploration of the theories, contexts, and

methods found" (Pushparaj & Kushwaha, 2024, p. 1).

The thematic analysis enabled the researchers to detect patterns, themes and interpret data within the TCM framework. To confirm its eligibility, other researchers assessed the sample independently, and an inter-rater reliability of 87% was achieved. Subsequently, the entire text of the articles was further reviewed and carefully checked.

Synthesizing results is the **fifth step.** A deductive content analysis, which is a method used often in the social sciences, was conducted (e.g., Swann, Crust, Keegan, Piggott & Hemmings, 2017). Subsequently, it was accomplished by grouping the themes (theoretical and methodological framework) and subthemes under those categories leveraging on a variety of studies (for example, Vada et al., 2020).

Upon completion of this process, the **sixth step** involved ***conducting additional analysis***, with the results categorized into three main groups: descriptive analysis, thematic analysis, and application of the TCM framework. The method of descriptive analysis allows for an overall description of the selected studies, their characteristics, and trends regarding the year of their publication, the methods employed, and their focus topics (Vada et al., 2020). Such an approach allows for an effective systematic review of the literature, defining areas of interest and knowledge gaps in the research field.

As a qualitative research methodology, thematic analysis enables researchers to detect themes and interpret data within their framework (Braun & Clarke, 2006). The method assists researchers in understanding large textual datasets through its capability to transform information into meaningful categories. For the thematic analysis, Microsoft Excel was utilized to systematically identify and group emerging themes from the selected literature. The process began with data extraction, where key points, findings, and keywords from each article were organized into a spreadsheet. Initial coding was performed by tagging similar ideas using color codes and annotations. These codes were then clustered into broader themes based on conceptual similarities. Next, theme refinement was carried out to merge overlapping patterns and ensure internal consistency. Finally, the refined themes were categorized into three overarching groups: (1) descriptive findings on virtual experiences, (2) thematic insights into tourist perception and behavior, and (3) the application of the Tourism Consumer Model (TCM) framework.

Though Excel does not offer advanced text mining features, its flexibility enabled a transparent, replicable, and structured approach to qualitative data analysis.

On the other hand, using the TCM framework provides the necessary structure for the evaluative criteria and serves to further define the importance and effectiveness of the studies. TCM is employed to examine assumptions, activities, and impacts associated with the adoption of Metaverse technologies in tourism (Vada et al., 2020). This way, it enables further reflection on the prowess of the studies in relation to the various theoretical frameworks and helps in the assessment of the applicability of Metaverse within the cycle of tourism to realize desired outcomes. This method aligns with earlier research that conducted a similar quantitative review, interpretation, and examination (e.g., Vada et al., 2020).

In summary, the methodology employed in this study combines systematic literature review, descriptive analysis, and thematic analysis within the TCM framework. This approach not only ensures a comprehensive and structured examination of the selected studies but also facilitates the identification of key themes and trends in the research field. By integrating these methods, the study provides a robust foundation for understanding the transformative potential of Metaverse in tourism, while also highlighting areas for future research. The systematic nature of this approach enhances the validity and reliability of the findings, offering valuable insights for both academic and practical applications in the field of tourism studies.

CHAPTER 4. RESULTS AND DISCUSSION

4.1 Results

4.1.1 Descriptive Findings

A total of 68 studies were reviewed, each contributing unique insights into the role of Metaverse in transforming tourism. Metaverse, as an interconnected digital ecosystem, is reshaping how tourism experiences are designed, delivered, and consumed. While technologies such as virtual reality (VR), augmented reality (AR), artificial intelligence (AI), and blockchain are often integrated into Metaverse platforms, this review focuses on Metaverse as a holistic concept rather than its individual technological components. The thematic distribution of these studies highlights key areas such as virtual tourism experiences, consumer behavior, economic implications, sustainability, and technological challenges, providing a comprehensive understanding of Metaverse's potential and limitations in the tourism sector.

From these 68 studies, 42 studies (61.7%) explicitly examine the adoption and integration of Metaverse in tourism, focusing on themes such as virtual tourism experiences (e.g., Deng et al., 2024; Hassan & Saleh, 2024), digital destination branding (e.g., Zhang et al., 2024; Jafar et al., 2024), and immersive storytelling (e.g., Liu & Park, 2024; Zhu et al., 2023). Within this subset, 18 studies (26.4%) focus specifically on how Metaverse applications enhance engagement, interactivity, and satisfaction levels among virtual tourists (e.g., Jafar et al., 2024; Liu & Park, 2024).

Additionally, 26 studies (38.2%) analyze consumer behavior and acceptance of Metaverse tourism platforms, applying theories such as the Technology Acceptance Model (TAM) (e.g., Zhang et al., 2024; Liu & Park, 2024), Telepresence Theory (e.g., Zhu et al., 2023; Hassan & Saleh, 2024), and Self-Determination Theory (e.g., Zhang et al., 2024; Liu & Hao, 2024) to understand users' intentions, motivations, and perceived benefits.

Furthermore, 16 studies (23.5%) explore economic and business implications, including the monetization of virtual tourism (e.g., Ampountolas et al., 2024; Wei, 2022), gamification (e.g., Cha et al., 2024), and blockchain-driven transactions within Metaverse platforms (e.g., Wei, 2022; Suanpang et al., 2022). These studies provide critical insights

into how virtual economies, digital assets, and decentralized tourism markets are emerging as part of Metaverse landscape, underscoring Metaverse as a dynamic and evolving economic ecosystem.

Another key area is sustainability and ethical concerns, which are addressed in 10 studies (14.7%) (e.g., Go & Kang, 2023; Mihalic, 2024). These studies emphasize the environmental, social, and governance (ESG) aspects of Metaverse tourism, particularly in reducing over-tourism, preserving cultural heritage digitally (e.g., Fan et al., 2022; Triviño-Tarradas et al., 2024), and ensuring data privacy and user safety (e.g., Singh et al., 2024; Saleh, 2024). For example, Go & Kang (2023) highlight how Metaverse tourism can align with the United Nations Sustainable Development Goals (SDGs), while Mihalic (2024) explores the ethical challenges of data privacy in Metaverse tourism.

Lastly, 14 studies (20.6%) examine the technological and infrastructural challenges that impede the seamless adoption of Metaverse tourism, including hardware limitations, internet accessibility, and regulatory gaps (e.g., Shukla et al., 2024; Yang & Wang, 2023). These studies confirm that while Metaverse holds transformative potential, its adoption is hindered by technological barriers and the need for robust regulatory frameworks.

The percentages reflect the proportion of studies addressing each theme, with some studies contributing to multiple themes. For instance, a single study might examine both consumer behavior and economic implications, leading to an overlap in the counts. This overlap is carefully accounted for, ensuring the percentages accurately represent the distribution of themes without overstatement. The analysis acknowledges these overlaps to maintain clarity and precision, providing a balanced view of the research as a whole. For example, some studies addressing sustainability also explore consumer behavior, and these dual focuses are reflected in the percentages. This approach ensures the thematic distribution is both comprehensive and accurate.

Table 4.1. List of Authors and Journals according to Location

Country	# Articles	%	Authors	Journal
China	22	32.35	Cha, S.-S., Kim, C.Y., Tang, Y.; Chen, C.F.; Chen, S., Chan, I. C. C., Xu, S., Law, R., & Zhang, M. ; Chen, Z. ; Chon, K.K.S., Hao, F.; Dayoub, B., Yang, P., Omran, S., Zhang, Q., & Dayoub, A. ; Dayoub, B., Yang, P., Omran, S., Zhang, Q., Dayoub, A.; Deng, B., Wong, I.A., Lian, Q.L.; Fan, Z., Chen, C., Huang, H.; Hui, X., Raza, S.H., Khan, S.W., Zaman, U., Ogadimma, E.C.; Jafar, R.M.S., Zhu, J., Crabbe, M.J.C., Yue, G.X.-G., Yang, Y.; Liu, S., & Hao, F. ; Saneinia, S., Zhai, X., Zhou, R., Gholizadeh, A., Wu, R., & Zhu, S. ; Su, P.-Y., Hsiao, P.-W., Fan, K.-K.; Wei, D.; Yang, F. X., & Wang, Y. ; Yang, F.X., Wang, Y.; Zhong, L., Xu, Z., Morrison, A.M., Li, Y., Zhu, M.; Zhu, C., Io, M.-U., Hall, C.M., Ngan, H.F.B., Peralta, R.L.; Zhu, C., Wu, D. C. W., Hall, C. M., Fong, L. H. N., Koupaei, S. N., & Lin, F. ; Zhu, C., Wu, D.C.W., Hall, C.M., ... Koupaei, S.N., Lin, F.	Asia Pacific Journal of Tourism Research; Critical Arts; Heritage Science; Humanities & Social Sciences Communications; International Journal of Contemporary Hospitality Management; International Journal of Geoheritage and Parks; International Journal of Tourism Research; International Review for Spatial Planning and Sustainable Development; Journal of Hospitality & Tourism Research; Journal of Travel and Tourism Marketing; Sustainability (Switzerland); Tourism Review
South Korea	10	14.71	Cha, S.-S., Kim, C.Y., Tang, Y.; Hui, X., Raza, S.H., Khan, S.W., Zaman, U., Ogadimma, E.C.; Kang, H.-C., Baek, W.-Y., Choi, J.-Y., Kim, J.-S.; Lee, U.-K.; Lee, U.-K. ; Liu, H., & Park, K.-S. ; Liu, H., Park, K.-S.; Zaman, U., Koo, I., Abbasi, S., Raza, S.H., Qureshi, M.G.; Zhu, C., Io, M.-U., Hall, C.M., Ngan, H.F.B., Peralta, R.L.	International Journal of Tourism Research; Journal of Marine and Island Cultures; Sustainability; Sustainability (Switzerland)
India	9	13.24	Adnan, N., Rashed, M.F., Ali, W.; Ahmad, K., Sharma, B., Khatwani, R., Mishra, M., Mitra, P.K.; Gursoy, D., Malodia, S., & Dhir, A. ; Mandal, S., Paul, J., Kotni, V. V. D. P., & Chintaluri, M. G. ; Natarajan, T., Pragha, P., Dhalmahapatra, K., Veera Raghavan, D.R.; Rather, R. A. ; Shukla, V., Rana, S., & Prashar, S. (; Shukla, V., Rana, S., Prashar, S.; Singh, R., Iqbal, J., Kukreja, P., Yadav, M., Ramkissoon, H.	Bottom Line; Current Issues in Tourism; International Journal of Tourism Cities; Journal of Destination Marketing and Management; Journal of Hospitality Marketing and Management; The Bottom Line Managing Library Finances; Tourism Recreation Research; Tourism Review
UK	8	11.76	Ampountolas, A., Menconi, G., Shaw, G.; Filimonau, V., Ashton, M., & Stankov, U. ; Filimonau, V., Ashton, M., Stankov, U.; GÃ³mez-Quintero, J., Johnson, S.D., Borrion, H., Lundrigan, S.; Jafar, R.M.S., Zhu, J., Crabbe, M.J.C., Yue, G.X.-G., Yang, Y.; KÄ±lÄ±Ã§arslan, Ã–., Yozukmaz, N., Albayrak, T., Buhalis, D.; Mandal, S., Paul, J., Kotni, V. V. D. P., & Chintaluri, M. G. ; Zhong, L., Xu, Z., Morrison, A.M., Li, Y., Zhu, M.	Asia Pacific Journal of Tourism Research; Current Issues in Tourism; Futures; Journal of Destination Marketing and Management; Journal of Tourism Futures; Tourism Economics; Tourism Review
Spain	8	11.76	CalderÃ³n-Fajardo, V., Puig-Cabrera, M., RodrÃguez-RodrÃguez, I.; Florido-BenÃtez, L.; Florido-BenÃtez, L. ; Garrido-IÃ±igo, P., & RodrÃguez-Moreno, F. ; Garrido-IÃ±igo, P., RodrÃguez-Moreno, F.; Prados-Castillo, J. F., Torrecilla-GarcÃa, J. A., & LiÃ©bana-Cabanillas, F. ; Prados-Castillo, J.F., Torrecilla-GarcÃ-a, J.A., LiÃ©bana-Cabanillas, F.; TriviÃ±o-Tarradas, P., Mohedo-GatÃ³n, A., Carranza-CaÃ±adas, P., Hidalgo-Fernandez, R.E.	Current Issues in Tourism; Interactive Learning Environments; International Journal of Tourism Cities; Sustainability (Switzerland); Tourism Review
Turkey	5	7.35	Åžengel, Ãœ.; KÄ±lÄ±Ã§arslan, Ã–., Yozukmaz, N., Albayrak, T., Buhalis, D.; Nazli, M., Bulut, C., Ozarslan, Y.; Ã–zdemir UÃ§gun, G.; Ã–zdemir UÃ§gun, G., Åžahin, S.Z.	Current Issues in Tourism; Journal of Hospitality, Leisure, Sport and Tourism Education; Journal of Metaverse
USA	5	7.35	Go, H., & Kang, M. ; Go, H., Kang, M.; Gursoy, D., Malodia, S., & Dhir, A. ; Jia, S., Chi, O.H., Martinez, S.D., Lu, L.; Mandal, S., Paul, J., Kotni, V. V. D. P., & Chintaluri, M. G.	Journal of Destination Marketing and Management; Journal of Hospitality & Tourism Research; Journal of Hospitality Marketing and Management; Tourism Review
Malaysia	5	7.35	Hui, X., Raza, S.H., Khan, S.W., Zaman, U., Ogadimma, E.C.; Jafar, R.M.S., Ahmad, W.; Zhang, J., Quoquab, F.; Zhang, J., Quoquab, F., Mohammad, J.	International Journal of Tourism Cities; Sustainability (Switzerland); Tourism Review
Pakistan	4	5.88	Adnan, N., Rashed, M.F., Ali, W.; Hui, X., Raza, S.H., Khan, S.W., Zaman, U., Ogadimma, E.C.; Zaman, U., Koo, I., Abbasi, S., Raza, S.H., Qureshi, M.G.	Current Issues in Tourism; Sustainability (Switzerland)
Egypt	3	4.41	Hassan, T., & Saleh, M. I.; Hassan, T., Saleh, M.I.; Saleh, M.I.	Current Issues in Tourism; Tourism Review

Country	# Articles	%	Authors	Journal
Cyprus	3	4.41	Jafar, R.M.S., Zhu, J., Crabbe, M.J.C., Yue, G.X.-G., Yang, Y.; Suanpang, P., Niamsorn, C., Pothipassa, P., ... Netwong, T., Jermsittiparsert, K.; Suanpang, P., Niamsorn, C., Pothipassa, P., Chunhapataragul, T., Netwong, T., & Jermsittiparsert, K.	Asia Pacific Journal of Tourism Research; Sustainability; Sustainability (Switzerland)
Thailand	3	4.41	Potjanajaruwit, P.; Suanpang, P., Niamsorn, C., Pothipassa, P., ... Netwong, T., Jermsittiparsert, K.; Suanpang, P., Niamsorn, C., Pothipassa, P., Chunhapataragul, T., Netwong, T., & Jermsittiparsert, K.	Geojournal of Tourism and Geosites; Sustainability; Sustainability (Switzerland)
Sweden	3	4.41	Zhu, C., Io, M.-U., Hall, C.M., Ngan, H.F.B., Peralta, R.L.; Zhu, C., Wu, D. C. W., Hall, C. M., Fong, L. H. N., Koupaei, S. N., & Lin, F. ; Zhu, C., Wu, D.C.W., Hall, C.M., ... Koupaei, S.N., Lin, F.	International Journal of Tourism Research
Saudi Arabia	3	4.41	Adnan, N., Rashed, M.F., Ali, W.; Hassan, T., & Saleh, M. I.; Hassan, T., Saleh, M.I.	Current Issues in Tourism; Tourism Review
New Zealand	3	4.41	Zhu, C., Io, M.-U., Hall, C.M., Ngan, H.F.B., Peralta, R.L.; Zhu, C., Wu, D. C. W., Hall, C. M., Fong, L. H. N., Koupaei, S. N., & Lin, F. ; Zhu, C., Wu, D.C.W., Hall, C.M., ... Koupaei, S.N., Lin, F.	International Journal of Tourism Research
UAE	3	4.41	Ahmad, K., Sharma, B., Khatwani, R., Mishra, M., Mitra, P.K.; Shukla, V., Rana, S., & Prashar, S. (; Shukla, V., Rana, S., Prashar, S.	Bottom Line; International Journal of Tourism Cities; The Bottom Line Managing Library Finances
Slovenia	3	4.41	Mihalic, T.; Mihalic, T. ; Nazli, M., Bulut, C., Ozarslan, Y.	Current Issues in Tourism; Tourism Review
Italy	2	2.94	Di Paolo, F., Bettiga, D., & Lamberti, L. ; Monaco, S., Sacchi, G.	Sustainability (Switzerland); Tourism Management
Russia	2	2.94	Hassan, T., & Saleh, M. I.; Hassan, T., Saleh, M.I.	Tourism Review
Finland	2	2.94	Zhu, C., Wu, D. C. W., Hall, C. M., Fong, L. H. N., Koupaei, S. N., & Lin, F. ; Zhu, C., Wu, D.C.W., Hall, C.M., ... Koupaei, S.N., Lin, F.	International Journal of Tourism Research
Serbia	2	2.94	Filimonau, V., Ashton, M., & Stankov, U. ; Filimonau, V., Ashton, M., Stankov, U.	Journal of Tourism Futures
Netherlands	2	2.94	Filimonau, V., Ashton, M., & Stankov, U. ; Filimonau, V., Ashton, M., Stankov, U.	Journal of Tourism Futures
Germany	2	2.94	Ioannidis, S., & Kontis, A. P. ; Weking, J., Desouza, K. C., Fielt, E., & Kowalkiewicz, M.	Information Technology and Tourism; Journal of Business Venturing Insights
Taiwan	1	1.47	Su, P.-Y., Hsiao, P.-W., Fan, K.-K.	Sustainability (Switzerland)
Morocco	1	1.47	Yousra B., Vikas A.	Journal of Content Community and Communication
South Korea Pakistan	1	1.47	Zaman, U., Koo, I., Abbasi, S., Raza, S. H., & Qureshi, M. G.	Sustainability
France	1	1.47	Assiouras, I., Bayer, R.	Tourism Review
South Africa	1	1.47	Gursoy, D., Malodia, S., & Dhir, A.	Journal of Hospitality Marketing and Management
Australia	1	1.47	Weking, J., Desouza, K. C., Fielt, E., & Kowalkiewicz, M.	Journal of Business Venturing Insights
Norway	1	1.47	Gursoy, D., Malodia, S., & Dhir, A.	Journal of Hospitality Marketing and Management
Portugal	1	1.47	CalderÃ³n-Fajardo, V., Puig-Cabrera, M., RodrÃguez-RodrÃguez, I.	Current Issues in Tourism
Switzerland	1	1.47	Ampountolas, A., Menconi, G., Shaw, G.	Tourism Economics
Trinidad and Tobago	1	1.47	Rameshwar, J.R., King, G.S.	Journal of Marine and Island Cultures

The analysis of 68 selected academic articles reveals a diverse geographical distribution in Metaverse-tourism research. Notably, China emerges as the leading contributor, appearing in 22 articles, which accounts for 32.35% of the total dataset. This dominance underscores China's active academic engagement in the study of emerging digital tourism technologies.

Countries like Cyprus and Egypt are each represented in 3 articles (4.41% respectively), reflecting growing interest from smaller yet increasingly active academic communities. Finland contributes 2 articles (2.94%), showing participation from Northern Europe in this discourse. Other countries such as Australia also feature, albeit with 1 article each (1.47%), indicating global interest, albeit at varying levels of intensity.

The range of authors and journals associated with each country further reinforces the interdisciplinary and international nature of the topic. Countries like China and Finland show a concentration of contributions in high-impact journals like *Tourism Review*, *Sustainability*, and the *International Journal of Tourism Research*, suggesting that research from these nations is not only prolific but also influential. This distribution paints a picture of Metaverse-tourism research as an evolving, globally dispersed field—driven significantly by Asian and European scholars, with emerging voices from Africa, Oceania, and other regions steadily gaining traction.

The academic landscape of Metaverse tourism is also notably interdisciplinary, as revealed through the variety of journals represented in this study in Table 4.2 below. Tourism Review and Current Issues in Tourism stand out as the most prominent outlets, contributing 15 (22.1%) and 7 (10.3%) articles respectively, making up nearly 35% of all 68 articles reviewed. Their dominance underscores the centrality of tourism-focused academic outlets in shaping the discourse on Metaverse's role in travel, destination marketing, and immersive experience design.

Tourism Review, the leading contributor, publishes a wide range of conceptual and empirical papers on digital transformation, immersive engagement, and sustainable tourism. Articles such as Go & Kang (2023) and Hassan & Saleh (2024) provide foundational definitions, theoretical explorations, and policy implications for Metaverse tourism developent. *Current Issues in Tourism*, on the other hand, focuses heavily on emerging tourism phenomena, showcasing in-depth empirical studies—like those by Saleh (2024) and Natarajan et al. (2024), that investigate user experience, digital interface design, and Gen Z preferences in immersive environments.

Following these are journals such as the *International Journal of Tourism Research* (6 articles, 8.8%) and *Journal of Hospitality and Tourism Research* (3 articles, 4.41%), which emphasize methodological rigor and advanced modeling techniques in

understanding technological adoption, behavioral intention, and psychological responses within virtual spaces.

Other notable journals include *Sustainability* (Switzerland) (6 articles, 8.8%), which brings an ecological and ethical dimension to the conversation, especially in works such as Hui et al. (2023) and Triviño-Tarradas et al. (2024), highlighting regenerative tourism, Metaversal sustainability, and green virtual experiences.

The presence of articles in publications such as the *Journal of Travel and Tourism Marketing*, *Asia Pacific Journal of Tourism Research*, *Journal of Hospitality Marketing and Management*, and *Journal of Destination Marketing and Management* reflects a strong interest in marketing and consumer psychology aspects of Metaverse tourism. These articles often engage with constructs such as virtual brand equity, telepresence, value co-creation, and gamification.

Also represented are discipline-bridging journals like *Futures*, and the *Journal of Business Venturing Insights*, which expand the scope beyond tourism to include discussions on digital education, cybersecurity in Metaverse, entrepreneurship, and virtual crime, signifying broader societal concerns and opportunities.

Table 4.2. List of Journals in the Review

Journal	# Articles	Focus of Articles
Asia Pacific Journal of Tourism Research	2	Unlocking the power of Metaverse technology in tourism: enhancing experiences and perceptions about tourism destinations; Metaverse and regenerative tourism: the role of avatars in promoting sustainable practices.
Bottom Line	1	Examining the potential of virtual and augmented reality in enhancing tourism experiences
Current Issues in Tourism	7	Embracing Metaverse: cultivating sustainable tourism growth on a global scale; Gen Z travel intentions and museum visits in Metaverse: case of Egypt, Scotland, and Turkey The impacts of Metaverse on tourist behaviour and marketing implications; How does Metaverse affect the tourism industry? Current practices and future forecasts; From tourism in the Darkverse to tourism with digital detox: designing responsible Metaverse tourism experiences
Futures	1	A scoping study of crime facilitated by Metaverse
Geojournal of Tourism and Geosites	1	The development of Metaverse technology to raise up the standard of health tourism
Heritage Science	1	Immersive cultural heritage digital documentation and information service for historical figure Metaverse: a case of Zhu Xi, Song Dynasty, China
Humanities & Social Sciences Communications	1	Beyond virtual boundaries: the intersection of Metaverse technologies, tourism, and lifelong learning in Chine's digital discourse.
Information Technology and Tourism	1	Metaverse for tourists and tourism destinations.
International Journal of Contemporary Hospitality Management	1	Beyond boundaries: exploring Metaverse in tourism.

Journal	# Articles	Focus of Articles
International Journal of Geoheritage and Parks	1	Gemiverse: The blockchain-based professional certification and tourism platform with its own ecosystem in Metaverse
International Journal of Tourism Cities	4	Impact of Metaverse technology on hospitality and tourism industry: an interplay of social media marketing on hotel booking in India; Metaverse in the urban destinations in China: some insights for the tourism players; Metaverse cannot be an extra marketing immersive tool to increase sales in tourism cities.
International Journal of Tourism Research	6	Exploring the impact of Metaverse tourism. The mediating role of augmented reality attachment; Exploring non-immersive virtual reality experiences in tourism: Empirical evidence from a world heritage site; An integrated model of presence, the Technology Acceptance Model, and the Theory of Planned Behavior.
International Review for Spatial Planning and Sustainable Development	2	The Role of Metaverse in Silk Road's tourism: A qualitative study within China's Belt and Road Initiative (BRI) context
Journal of Business Venturing Insights	1	Metaverse-enabled entrepreneurship.
Journal of Destination Marketing and Management	1	The orientation of Gen Zs towards Metaverse tourism.
Journal of Hospitality & Tourism Research	3	When old meets new; Unlocking the future of innovative technology implementation in Heritage Tourism; Rethinking Metaverse Tourism: A Taxonomy and an agenda for future research.
Journal of Hospitality Marketing and Management	1	Metaverse in the hospitality and tourism industry: An overview of current trends and future research directions.
Journal of Hospitality, Leisure, Sport and Tourism Education	1	Metaverse in tourism education: A mixed method on vision, challenges and extended technology acceptance model
Journal of Marine and Island Cultures	1	Revitalizing island tourism in the digital transformation era: Case of Jebudo Island
Journal of Metaverse	1	The effects of Metaverse on the tourism industry
Journal of Tourism Futures	2	Virtual spaces as the future of consumption in tourism, hospitality and events.
Journal of Travel and Tourism Marketing	1	Metaverse in tourism: drivers and hindrances from stakeholder perspective.
Sustainability	2	Tourism using virtual reality: Media richness and information system successes; Extensible Metaverse implication for a smart tourism city
Sustainability (Switzerland)	6	Exploring regenerative tourism using Media Richness Theory: Emerging role of immersive journalism, Metaverse based promotion, Eco-literacy, and pro-environmental behaviour; Travelling Metaverse: Potential benefits and main challenges for tourism sectors and research applications
The Bottom-Line Managing Library Finances	1	Examining the potential of virtual and augmented reality in enhancing tourism experiences.
Tourism Economics	1	Metaverse research propositions: Online intermediaries
Tourism Management	1	Leveraging social capital for destination promotion in Metaverse
Tourism Recreation Research	1	Metaverse marketing and consumer research: theoretical framework and future research agenda in tourism and hospitality industry.
Tourism Review	15	Metaverse as a booster of tourism transformation towards virtual management strategies; Metaverse tourism for sustainable tourism development: Tourism Agenda 2030; Metaverse customer journeys in tourism: building viable virtual worlds; Metaversal sustainability: conceptualisation within the sustainable tourism paradigm; Self-transcendent emotions as the locomotive of value co-creation in sustainable tourism: a horizon 2050 paper; Metaverse as a booster of tourism transformation towards virtual management strategies.
TOTAL	68	

4.2 TCM FRAMEWORK

4.2.1 Theories

The articles under review collectively examine an extensive number of theoretical frameworks (see Table 4.3) to understand Metaverse tourism. While some of the papers present new conceptual models applied to new trends, many of them borrow from old theories in consumer behavior, technology adoption, and tourist studies (Akyurek et al., 2024; Liu & Park, 2024; Shukla et al., 2024; Go & Kang, 2023; Zhu et al., 2023; Lee, 2022; Liu & Hao, 2024; Assiouras & Bayer, 2024; Hassan & Saleh, 2024).

In total, 68 articles were reviewed, and it was found that there was a clear application of multiple theoretical underpinnings, all of which provide distinct insights into Metaverse and tourism (Go & Kang, 2023; Hassan & Saleh, 2024). From these, the most prominent is the *Technology Acceptance Model* (TAM), often used to explain the net perceptions of Metaverse within the constructs of perceived ease of use and perceived usefulness, as well as impact on behavioural intentions (Liu & Park, 2024; Zhu et al., 2024). Along the same line, the *Media Richness Theory* is applied extensively to study the capability of virtual platforms to provide real and vivid sensory experience that defines tourist engagement and satisfaction levels (Lee, 2022; Shukla et al., 2024).

Another frequently cited theory which occasionally is used in conjunction with TAM is the *Theory of Planned Behavior* (TPB) (Liu & Park, 2024). Others apply *Self-Determination Theory* (SDT) to study the extrinsic-regulated reasons of different people targeting on self-actualization and prosocial identity which is essential in determining the ethic and sustainable concerns related to Metaverse tourism (Liu & Hao, 2024). *Attribution Theory* is employed to enlighten the picture of how tourists make judgments of their virtual experiences with relevant dimensions like controllability and stability (Hassan & Saleh, 2024).

Other theories are *Presence Theory* and *Telepresence Theory* that explain the feeling of the user to be physically present and real in the enacted virtual modes of environment and orientation that are crucial for determining behavioral changes and tour experience (Zhu et al., 2023; Liu & Park, 2024). *Service-Dominant Logic* approach can help analyze the theme of value co-creation in sustainable and regenerative tourism (Assiouras & Bayer,

2024), whereas *Social Capital Theory* helps understand how stakeholders collaborate in Metaverse driven activities, like destination marketing and community building. (Di Paolo et al., 2024).

Hence, *Kuhn's Paradigmatic Framework*, *Transformative Learning Theory*, *Information Systems Success Model* is applied to evaluate broader concerns of Metaverse in education, policy and strategic management among others (Mihalic, 2024; Lee, 2022). These frameworks complement other yet developed approaches to research in this area, such as *Metaversal Sustainability*, and the *4Is Taxonomy*, thus emphasizing the creativity of this line of study, with emphasis on sustainability, diversity, and technology (Yang & Wang, 2023; Mihalic, 2024). The integration of these theoretical models underscores the interdisciplinary and multifaceted nature of Metaverse in tourism research. These diverse theoretical foundations not only enrich the understanding of virtual experiences but also provide actionable insights for leveraging Metaverse responsibly and sustainably in tourism studies.

Table 4.3. Theories Applied in Metaverse Research in Tourism

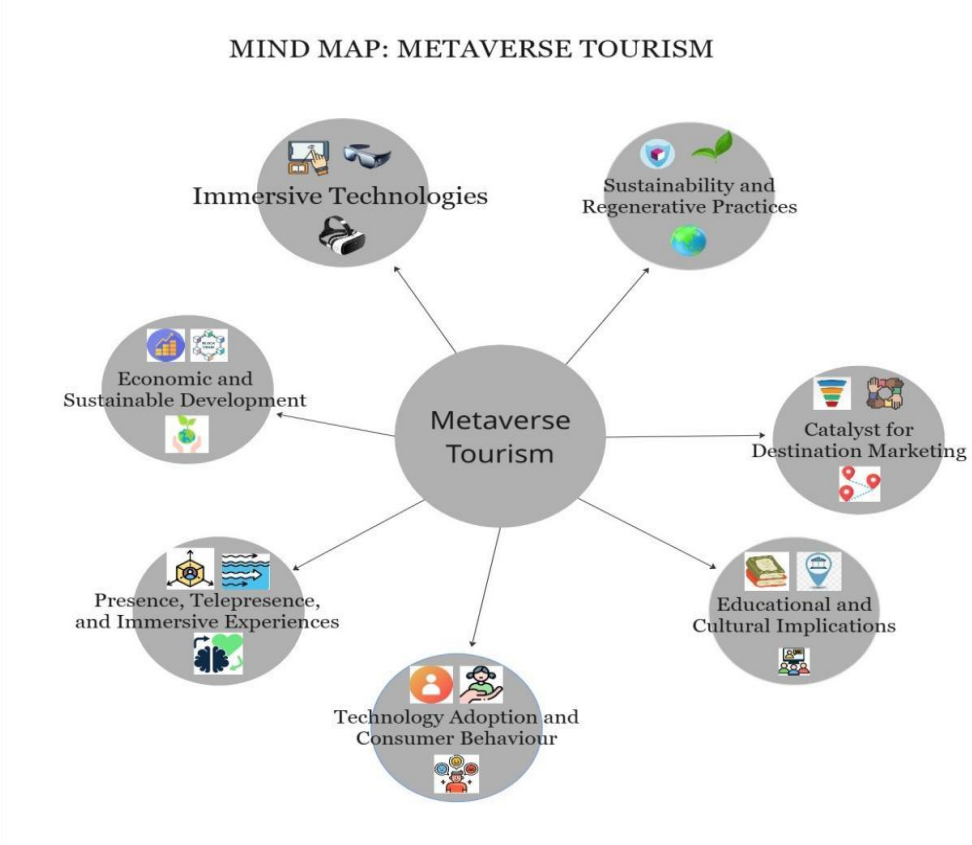
Theory	# Articles	Source
Technology Acceptance Model (TAM)	10	(Saleh, 2024), (Liu & Park, 2024), (Akyürek et al., 2024), (Shukla et al., 2024), (Go & Kang, 2023), (Prados-Castillo et al., 2024), (Hassan & Saleh, 2024), (Di Paolo et al., 2024), (Liu & Hao, 2024), (Dayoub et al., 2024), (Nazli et al., 2024), (Florido-Benítez, 2024)
Media Richness Theory	8	(Shukla et al., 2024), (Lee, 2022), (Hassan & Saleh, 2024), (Zhu et al., 2023), (Liu & Park, 2024), (Go & Kang, 2023), (Prados-Castillo et al., 2024), (Liu & Hao, 2024)
Theory of Planned Behavior (TPB)	6	(Liu & Park, 2024), (Shukla et al., 2024), (Go & Kang, 2023), (Hassan & Saleh, 2024), (Prados-Castillo et al., 2024), (Akyürek et al., 2024)
Self-Determination Theory	4	(Liu & Hao, 2024), (Shukla et al., 2024), (Assiouras & Bayer, 2024), (Nazli et al., 2024)
Attribution Theory	4	(Hassan & Saleh, 2024), (Prados-Castillo et al., 2024), (Shukla et al., 2024), (Mihalic, 2024)
Social Capital Theory	3	(Di Paolo et al., 2024), (Mihalic, 2024), (Dayoub et al., 2024)
Service-Dominant Logic	3	(Assiouras & Bayer, 2024), (Mihalic, 2024), (Go & Kang, 2023)
Cognitive Dissonance Theory	3	(Saleh, 2024), (Go & Kang, 2023), (Nazli et al., 2024)
Presence Theory	3	(Liu & Park, 2024), (Shukla et al., 2024), (Zhu et al., 2023)

Theory	# Articles	Source
Systems Theory	3	(Dayoub et al., 2024), (Hassan & Saleh, 2024), (Prados-Castillo et al., 2024)
Diffusion of Innovations Theory	3	(Prados-Castillo et al., 2024), (Go & Kang, 2023), (Shukla et al., 2024)
Motivation-Opportunity-Ability	2	(Prados-Castillo et al., 2024), (Hassan & Saleh, 2024)
Value Co-Creation Theory	2	(Assiouras & Bayer, 2024), (Mihalic, 2024)
Theory of Cultural Capital	2	(Dayoub et al., 2024), (Liu & Hao, 2024)
Social Learning Theory	2	(Hassan & Saleh, 2024), (Shukla et al., 2024)
Extended Reality Theory	2	(Liu & Park, 2024), (Dayoub et al., 2024)
Unified Theory of Acceptance and Use of Technology (UTAUT)	2	(Liu & Park, 2024), (Shukla et al., 2024)
Narrative Transportation Theory	1	(Dayoub et al., 2024)
Gamification Theory	1	(Cha et al., 2024)
Stakeholder Theory	1	(Di Paolo et al., 2024)
Place Theory	1	(Go & Kang, 2023)
Psycholinguistic Theory	1	(Garrido-Iñigo & Rodríguez-Moreno, 2015)
Transformational Leadership Theory	1	(Mihalic, 2024)

4.2.2 Thematic Analysis

This study adopted thematic analysis because of its systematic flexibility to find patterns in qualitative datasets (Braun & Clarke, 2006). The application of this methodology works well for new fields, such as Metaverse tourism, because it helps uncover recurring concepts and theoretical connections which researchers have yet to study (Nowell et al., 2017). Using thematic analysis with the TCM approach enhances the systematic study of literature by identifying fundamental themes which generate knowledgeable findings about Metaverse tourism research (Vaismoradi et al., 2013).

Figure 4.1. Thematic Analysis of Metaverse in Tourism



Source: Own Elaboration

4.2.2.1 Immersive Technologies in Tourism: Advancing User Engagement and Satisfaction

The findings reveal how technologies like VR, AR and digital twin are revolutionizing the tourism sector in experiences that are personalized, interactive and without limits. This is in tandem with evidence from Lee (2022, p. 354) who observed that the influence of media richness led to vivid appeal to tourist sensory, thus resulting in satisfaction and engagement. Likewise, Liu and Hao (2024) have also noted avatars in the context of regenerative tourism wherein immersion and authenticity have been defined as significant components, needed to advance sustainability within the tourism domain.

The application of these technologies in tourism corresponds with the *Technology Acceptance Model* (TAM) stating that *Perceived Ease of Use* and *Perceived Usefulness* influence tourists' attitude and behavioral intentions. The findings of this study also have

implications for the *Theory of Planned Behaviour* (TPB), which has shown how the tourists' behavioral attitudes and perceived behavioral control predict their intention to participate in Metaverse tourism services. The theoretical viewpoints in a way endorse the idea that Metaverse helps in a paradigmatic change in how tourists conceive, engage with and obtain value for the tourism experiences.

4.2.2.2 Sustainability and Regenerative Practices

A sizable percentage of the results emphasize how Metaverse may promote regenerative tourism and sustainability. For example, Mihalic's (2024) discussion of the idea of "Metaversal sustainability" shows how Metaverse might minimize environmental impacts by reducing physical travel. The findings of Go and Kang (2023), who investigated how Metaverse tourism supports the *Sustainable Development Goals* (SDGs) of the UN by increasing the variety of virtual tourism resources and boosting profitability without compromising the environment, are corroborated by this.
Furthermore, by highlighting the significance of prosocial identity and self-transcendent emotions, as investigated by the *Self-Determination Theory* (SDT), the findings contribute to the conversation on sustainable tourism. These moral and emotional aspects highlight Metaverse's ability to promote deep relationships that support cultural preservation and communal well-being in addition to providing virtual exploration.

4.2.2.3 Metaverse as a Catalyst for Destination Marketing and Stakeholder Collaboration

From the research findings, it could be deduced that much of what Metaverse achieves resurrects the case of destination marketing, using replicas of the actual place and its insignia to reach a wider market. The study supports Hassan and Saleh (2024) who also established that the attribution theory can help explain how tourists arrived at particular judgments regarding the destinations after going round Metaverse. Furthermore, based on the *Social Capital Theory* adopted by Di Paolo et al. (2024) for the analysis of Metaverse, the work reveals the manner in which Metaverse encourages stakeholders' cooperation and bottom-up community actions in shaping destination, thereby enhancing brand appeal to visitors.
These emerged findings give attention to the tactical implications of Metaverse for tourism marketers as well as influential policymakers as they capture the ability to

develop engaging storytelling that not only point to virtual tourism but also decode a tangible reality of tourism experience. Such strategies do not only increase consumers' perceived value but also contribute to the competitiveness of destinations in a growing digital world.

4.2.2.4 Educational and Cultural Implications

The study also supports that Metaverse application is vital in enhancement of the tourism education, and safeguarding of the cultural historical artifacts. For instance, Akyürek et al. (2024) also showed how implementing Metaverse in education enhances global classroom; accessibility., and challenges. Cultural heritage work including excavations by Zhu et al. (2023) and Dayoub et al. (2024) show how digital replication of sites, monuments or artifacts can create engaging Metaverse experiences to conserve cultural events and affirm cultural ensemble.

These findings are consistent with *Kuhn's Paradigmatic Framework* where the idea of theory–practice integration in adopting to new technologies is informed by new theories and practices. Metaverse stands out as an innovative dynamism not only of tourist experiences but also of the cultural education of the world.

4.2.2.5 Technology Adoption and Consumer Behaviour in Metaverse Tourism

The key element of Metaverse tourism research focuses on how users interact with virtual travel events. Research Studies utilize the *Technology Acceptance Model* (TAM) from 1989 by Davis (Liu & Park, 2024; Zhu et al., 2023) along with the *Unified Theory of Acceptance and Use of Technology* (UTAUT) by Venkatesh et al. (2003) to evaluate usability perceptions and behavioural inclination. These models have recently received criticism for missing important components of immersive travel so researchers now pursue the *Expectation-Confirmation Model* (ECM) because it better explains post-adoption experiences and satisfaction levels (Go & Kang, 2023).

Several key groups of people influence how widespread Metaverse tourism becomes. Judicial research demonstrates tourists use virtual previews to decide on vacations but suggests these insights diminish their need for literal destination exploration (Mihalic 2024). To support tourism decisions Accor Hotels and Marriott along with other operators use Metaverse virtual tours but not as a replacement for real tourist visits (Filimonau et al., 2024). Dubai and Seoul government tourism agencies adopt Metaverse platforms

actively for marketing purposes yet older adults show resistance to these technologies leading to delays in widespread adoption (Florido-Benítez, 2024).
The increase of Metaverse technology usage in the tourism sector generates multiple benefits but also introduces various problems to overcome. *National Geographic VR* and similar platforms enable users to check out destinations virtually through their *National Geographic VR* platform (Liu & Hao, 2024). Immersive tourism experiences face critical security and privacy problems when it comes to data collection because they raise important issues about GDPR compliance and ethical standards (Triviño-Tarradas et al., 2024).

4.2.2.6 Presence, Telepresence, and Immersive Experiences in Tourism

Research on Metaverse tourism environments frequently applies *Presence* and *Telepresence theories* (Zhu et al., 2023; Liu & Park, 2024) to study user experiences. Research indicates that immersion levels critically affect how users experience satisfaction and engagement while forming emotional bonds with virtual destinations (Cha et al., 2024).

A new theoretical advancement proposes that *Flow Theory* (Triviño-Tarradas et al., 2024) delivers a more intricate account of why users deeply enjoy game-like tourism experiences which enhance interaction and engagement (Zhu et al., 2023; Liu & Park, 2024). The concept of presence receives distinct interpretations from different stakeholder groups. Meta and HTC technology providers are pouring resources into haptic technologies to boost sensorimotor presence for virtual travel experiences which prove beneficial in museum tourism and heritage site reconstructions (Akyürek et al., 2024). Virtual reality exhibitions created by The Louvre and the British Museum enable wider public access while protecting delicate artifacts and fostering international cultural heritage appreciation (Dayoub et al., 2024).

Immersive tourism experiences have become popular on gaming platforms like *Decentraland* and *Roblox* where users interact with historical content (Di Paolo et al., 2024), yet significant obstacles persist. The persistent challenges of cybersickness and motion-related discomfort represent significant obstacles that restrict both prolonged

participation and the widespread adoption of fully immersive tourism experiences (Mihalic, 2024).

4.2.2.7 Economic and Sustainable Development in Metaverse Tourism

Sustainable and Economic Growth in Metaverse Travel
Researchers are using *Service-Dominant Logic* (Vargo & Lusch, 2004) and *Metaversal Sustainability Theory* (Mihalic, 2024) to evaluate the economic and environmental effects of virtual tourism, making the relationship between sustainability and Metaverse tourism a hot topic. Recent research, however, indicates that models of the circular economy might offer more practical ways to support long-term sustainability in virtual tourism ecosystems (Go & Kang, 2023).

One notable real-world application of sustainable virtual tourism is UNESCO's "World Heritage in VR" project, which allows users to explore fragile heritage sites virtually, reducing the environmental footprint of mass tourism (Liu & Hao, 2024). However, concerns over high energy consumption in Metaverse servers pose significant environmental challenges, leading researchers to call for more energy-efficient solutions in immersive tourism development (Florido-Benítez, 2024).

4.2.3 Contexts

The analyzed literature reveals the richness of the real-life contexts that have already been investigated in regard to Metaverse and other related technologies, which demonstrates the continuously expanding applicability of virtual environments in the sphere of tourism. These include specific geographical circumstances and cultural themes, and other overall technological, educational, as well as overall technological, educational, and sustainability-related ones. Such diversity emphasizes the importance of Metaverse in terms of redesigning the existing worldview of tourism and other related industries.

4.2.3.1 Geographical Contexts

The studies include different territories, each characteristic of diverse socio-cultural and economic features as well as technology usage. For example, Europe, particularly Spain, Slovenia, and the UK, stands out as an active research area examining Metaverse mainly

within the context of culture and tourism. Similarly, Asia, particularly China, South Korea, and India, has been prominent with a focus on technology, experience, and how Metaverse is going to encourage sustainable tourism. Consequently, the Middle East and Africa regions relate to infrastructure, sustainability, and cultural tourism studies, while the Americas identify the orientations of immersive technologies from the standpoint of their economic impact and experience (Mihalic, 2024; Dayoub et al., 2024; Garrido-Iñigo & Rodríguez-Moreno, 2015; Go & Kang, 2023). A total of 20 articles focuses on geographical contexts, as shown in Table 4.4.

4.2.3.2 Technological Contexts

With Metaverse being assessed as a platform for facilitating immersive experiences through virtual reality (VR), augmented reality (AR), and digital twin technologies, the technological lens is a crucial setting in these articles. Scholars investigate the potential of Metaverse to augment physical travel, improve accessibility to destinations, and provide tourists with participatory and captivating experiences. The issues of scalability, user accessibility, and the digital divide are frequently brought up in discussions on technological progress (Lee, 2022; Florido-Benítez, 2024; Prados-Castillo et al., 2024; Zhu et al., 2023). 18 articles in the reviewed literature focus on technological contexts, as detailed in Table 4.4.

4.2.3.3 Sector-Specific Across Industries Context

Metaverse's application extends beyond tourism, intersecting with various industries such as education, hospitality, cultural tourism, and digital marketing. In the educational sector, Metaverse is being utilized to enhance tourism education, offering global classroom experiences, and preparing students for virtual reality workplaces. Studies highlight how Metaverse can improve instruction delivery, international classroom experiences, and training for students in tourism and hospitality management (Akyürek et al., 2024; Garrido-Iñigo & Rodríguez-Moreno, 2015; Gómez-Quintero et al., 2024).
In the hospitality industry, Metaverse platforms are enhancing customer engagement and service personalization. Virtual hotel tours, AI-powered chatbots, and augmented reality-based concierge services are becoming integral to next-generation travel experiences. Smart tourism infrastructure, integrated with Metaverse applications, is helping destinations provide real-time digital interaction, pre-trip planning tools, and interactive

3D mapping solutions (Go & Kang, 2023; Prados-Castillo et al., 2024).

Cultural tourism is another significant area where Metaverse is making an impact. Digital replication of historical sites, monuments, and artifacts allows for engaging Metaverse experiences that conserve cultural heritage and affirm cultural identity. For example, virtual reconstructions of heritage sites enable wider accessibility and interactive learning, making cultural tourism more inclusive and immersive (Dayoub et al., 2024; Triviño-Tarradas et al., 2024).

In the realm of digital marketing and destination branding, Metaverse is redefining how destinations engage with travelers. The rise of virtual influencers, immersive advertisements, and gamified travel experiences is transforming the way tourists explore and interact with potential destinations before making travel decisions. Metaverse-based marketing strategies enable brands to simulate real-world travel experiences, fostering higher engagement and conversion rates (Shukla et al., 2024; Liu & Hao, 2024). Metaverse also plays a crucial role in promoting sustainability across industries. By offering virtual tourism experiences, Metaverse can reduce the environmental impact of physical travel, addressing issues such as over-tourism and carbon footprints. This aligns with the broader goals of sustainable and regenerative tourism, where digital experiences complement rather than replace physical travel (Mihalic, 2024; Saleh, 2024). A total of 30 articles focuses on sector-specific applications across industries, as shown in Table 4.4.

Table 4.4. Distribution of Studies based on Context

Context	# Articles	Example of studies
Geographical	20	Mihalic (2024), Dayoub et al. (2024), Garrido-Iñigo & Rodríguez-Moreno (2015), Go & Kang (2023)
Technological	18	Lee (2022), Florido-Benítez (2024), Prados-Castillo et al. (2024), Zhu et al. (2023)
Sector-Specific Across Industries	30	Akyürek et al. (2024), Garrido-Iñigo & Rodríguez-Moreno (2015), Gómez-Quintero et al. (2024), Filimonau et al. (2024), Go & Kang (2023), Cha et al. (2024), Triviño-Tarradas et al. (2024), Hassan & Saleh (2024), Singh et al. (2024), Volchek & Brysch (2023), Chen et al. (2023)
Sustainability	10	Mihalic (2024), Liu & Hao (2024), Shukla et al. (2024), Liu & Park (2024)

4.2.3.4 Sustainability Contexts

Some articles place Metaverse into the sustainability framework: to reduce the negative impact of physical mobility, the development of culture and travel, and the shift to responsible tourism. 10 articles in the reviewed literature focus on sustainability contexts, as detailed in Table 4.4. It is often connected with the topic of regenerative tourism and how virtual marketplaces can help support the United Nations Sustainable Development Goals (UNSDGs) (Mihalic, 2024; Liu & Hao, 2024; Shukla et al., 2024; Liu & Park, 2024).

4.2.4 Methods

The research methods (Table 4.5) discussed in the 68 articles under review highlight the interdisciplinarity of Metaverse studies in tourism. These methods - qualitative, quantitative, mixed methods, conceptual/theoretical, and innovative - are selected based on the research questions and objectives being addressed. It was found that conceptual papers remain integral to the field, offering theoretical propositions, paradigms, and research directions. These works, such as Mihalic (2024), Hassan & Saleh (2024), and Go & Kang (2023), utilize models like systematic literature reviews and bibliometric analysis to identify gaps and trends in Metaverse tourism research. They often introduce novel categories, such as "Metaversal sustainability" (Mihalic, 2024), to shape the future research agenda. Conceptual models such as the *Service-Dominant Logic* (Vargo & Lusch, 2004) and *Value Co-Creation Framework* are frequently applied to assess the potential of Metaverse tourism as a transformative force in the industry (Prados-Castillo et al., 2024).

4.2.4.1 Qualitative Methods

Another finding was that a significant portion of published works (22 articles) employ qualitative methods, including interviews (40.9%) - as seen in Akyürek et al. (2024), case studies (31.8%) - as shown in Di Paolo et al. (2024), and content analysis (27.3%), as employed by Florido-Benítez (2024). These approaches focus on examining the impacts of Metaverse technologies on specific destinations, cultural heritage initiatives, and tourist experiences. They also explore shifts in user-generated content, conversations, and social media discourses about Metaverse. For instance, Dayoub et al. (2024), Akyürek et al. (2024), and Di Paolo et al. (2024) investigate how qualitative methods reveal the

cultural and experiential aspects of Metaverse in tourism. These studies emphasize that Metaverse experiences are shaping digital storytelling, allowing users to engage more deeply with heritage sites, museums, and tourism marketing campaigns. However, limitations exist, as qualitative findings are often context-specific and difficult to generalize across diverse tourism sectors (Triviño-Tarradas et al., 2024).

4.2.4.2 Quantitative Methods

Quantitative techniques (18 articles), including surveys and experiments, play a crucial role in studying metaverse tourism. These methods (16.7%) often use *Structural Equation Modeling* (SEM) - as applied by Shukla et al. (2024), regression analysis - seen in Lee (2022), and factor analysis - used by Cha et al. (2024), to test hypotheses and identify correlations between variables such as user engagement (Zhang et al., 2024), technological adoption (Liu & Park, 2024), and destination visit intentions (Zhu et al., 2023). Studies such as Liu & Park (2024), Shukla et al. (2024), and Lee (2022) use surveys to examine the influence of metaverse experiences on behavioral changes and acceptance. Other studies, such as Liu & Hao (2024) and Filimonau et al. (2024), use quasi-experimental approaches to simulate metaverse experiences, evaluating their impact on tourist decision-making and emotional engagement. These quantitative approaches offer reliable, generalizable insights, though they sometimes fail to capture the depth of human emotions and motivations as effectively as qualitative methods (Mihalic, 2024).

4.2.4.3 Mixed Methods

Mixed methods research (14 articles) combines qualitative and quantitative approaches to provide a comprehensive understanding of Metaverse tourism. These studies often integrate interviews, focus groups, and questionnaires with statistical analysis, enabling researchers to uncover both "what" and "why" regarding the adoption and implications of Metaverse. Notable examples include Saleh (2024), Prados-Castillo et al. (2024), and Zhu et al. (2023), which highlight the multifaceted dynamics of Metaverse adoption in tourism. These studies argue that mixed-methods approaches provide a holistic understanding of tourist behaviors, virtual destination branding, and Metaverse engagement levels. Additionally, mixed-method approaches are increasingly being used

in customer experience research, digital marketing studies, and cross-cultural comparisons (Go & Kang, 2023).

4.2.4.4 Innovative Methods

Emerging methodologies, categorized under innovative approaches (4 articles), include scenario-based experiments, nominal group techniques (NGT), and digital ethnography. These new research approaches enable scholars to explore uncharted dimensions of virtual tourism, digital identity, and user engagement. For example, Gómez-Quintero et al. (2024) and Cha et al. (2024) apply these techniques to investigate novel Metaverse tourism experiences. These methodologies (Table 4.5) are particularly useful for understanding user preferences in virtual travel environments, gamified tourism, and immersive marketing campaigns (Hassan & Saleh, 2024).

Table 4.5 Distribution of Articles based on Methods

Method	# Articles	(%)	Type of Method	Breakdown (%)	Sources
Qualitative	22	32.40%	Interviews	40.90%	Dayoub et al. (2024), Akyürek et al. (2024), Di Paolo et al. (2024), Florido-Benítez (2024)
			Case Studies	31.80%	
			Content Analysis	27.30%	
Quantitative	18	26.50%	Surveys	50%	Liu & Park (2024), Shukla et al. (2024), Lee (2022), Liu & Hao (2024)
			Experiments	33.30%	
			Statistical Modeling (SEM, Regression Analysis, etc.)	16.70%	
Mixed Methods	14	20.60%	Interviews + Surveys	50%	Saleh (2024), Akyürek et al. (2024), Prados-Castillo et al. (2024), Zhu et al. (2023)
			Focus Groups + Statistical Analysis	35.70%	
			Case Studies + Quantitative Data	14.30%	
Conceptual / Theoretical	10	14.70%	Systematic Literature Review	60%	Mihalic (2024), Hassan & Saleh (2024), Filimonau et al. (2024), Go & Kang (2023)
			Bibliometric Analysis	40%	
Innovative	4	5.90%	Scenario-Based Experiments	50%	Gómez-Quintero et al. (2024), Cha et al. (2024), Triviño-Tarradas et al. (2024), Liu & Hao (2024)
			Digital Ethnography	50%	

However, challenges exist in terms of validating digital ethnographic findings, as the nature of Metaverse interactions is highly fluid and context-dependent (Liu & Hao, 2024).

4.3 Discussion

This study conducted a systematic literature review on Metaverse in tourism and investigated the evolution of its role by analysing the theoretical, contextual, and methodological approaches employed across 68 research articles. Despite previous research (e.g., Di Paolo et al., 2024; Liu & Park, 2024), a gap remains in understanding how Metaverse tourism shapes tourists' perceptions of the destinations. This research addresses that gap by systematically reviewing the past, present, and future of Metaverse tourism, utilizing the *Theory-Context-Method* (TCM) framework to structure its analysis.

By synthesizing key theoretical foundations, contextual applications, and methodological trends, this study highlights both existing knowledge and unexplored areas within Metaverse tourism research. The findings suggest that traditional models of technology adoption and user engagement provide an essential base, but there is also a pressing need for new conceptual approaches that consider the socio-cultural, economic, and environmental factors influencing Metaverse tourism.

4.3.1. Theories in Metaverse Tourism and their Limitations

The findings reveal that several theoretical frameworks have been applied in Metaverse tourism research, with some traditional models adapted to fit new technological realities, while others introduce innovative perspectives tailored to immersive experiences. One of the most frequently applied models is the *Technology Acceptance Model* (TAM), which assesses how users perceive ease of use, usefulness, and adoption of Metaverse platforms. Similar to prior research (Liu & Park, 2024; Zhu et al., 2023), our analysis reaffirms that perceived ease of use, usefulness, and behavioral intentions are pivotal in shaping engagement in Metaverse tourism. However, TAM has been critiqued for its oversimplification of user behavior, as it does not fully account for social influence, intrinsic motivation, or evolving consumer expectations in virtual environments (Liu & Park, 2024; Zhu et al., 2023).

Similarly, *Media Richness Theory* (MRT) has been used to explain how highly interactive and immersive environments enhance user engagement in Metaverse tourism. While

MRT effectively outlines the role of media quality in shaping user perceptions, our findings identify limitations in its ability to capture the emotional and sensory complexities of digital environments (Shukla et al., 2024; Mihalic, 2024). Unlike earlier studies, this research incorporates *Presence and Telepresence Theories*, which provide a more nuanced perspective on digital embodiment, engagement, and interactivity in Metaverse tourism (Zhu et al., 2023; Liu & Park, 2024). This broader theoretical approach suggests that Metaverse tourism research should move beyond technical affordances and consider how digital spaces shape user psychology and engagement.

The *Theory of Planned Behaviour* (TPB) has also been employed to assess decision-making processes in Metaverse tourism, particularly in analyzing user intentions to visit virtual destinations. However, TPB has been found to be limited in scope, as it focuses primarily on individual behaviors without considering external influences, such as economic constraints, policy regulations, or technological barriers (Saleh, 2024; Di Paolo et al., 2024).

Newer conceptual models, such as *Metaversal Sustainability* and the *4Is Taxonomy*, offer more context-specific approaches that integrate sustainability, digital economy, and cross-sectoral collaborations in Metaverse tourism (Go & Kang, 2023). These emerging theories emphasize that Metaverse tourism is not only about virtual experiences but also about its broader impact on economic structures, environmental sustainability, and social inclusion. The findings suggest that while existing theories offer valuable insights, future research should aim to develop more holistic models that integrate technological, behavioral, and policy-oriented perspectives into Metaverse tourism research.

4.3.2 Contextual Applications of Metaverse Tourism

Metaverse tourism has emerged as a multifaceted domain that intersects with various aspects of heritage conservation, hospitality, digital marketing, and sustainability. One of the most prominent areas of application is *heritage and cultural tourism***,** where Metaverse technologies are used to digitally preserve and recreate historical landmarks, archaeological sites, and museum experiences. Studies have shown that Metaverse-based heritage tourism allows for wider accessibility, enhanced engagement, and interactive learning experiences, making cultural sites more inclusive and immersive (Dayoub et al., 2024; Triviño-Tarradas et al., 2024).

In the domain of *digital marketing and destination branding*, Metaverse has redefined how destinations engage with travelers. The rise of virtual influencers, immersive advertisements, and gamified travel experiences is transforming the way tourists explore and interact with potential destinations before making travel decisions (Shukla et al., 2024; Liu & Hao, 2024). The application of Metaverse-based marketing strategies enables brands to simulate real-world travel experiences, thereby fostering higher engagement and conversion rates.

The findings also emphasize the role of Metaverse tourism in promoting *sustainability*. Researchers have noted that Metaverse-based virtual tourism experiences offer an alternative to traditional travel, reducing carbon footprints and minimizing over-tourism (Mihalic, 2024; Saleh, 2024). The concept of "sustainable Metaverse tourism" suggests that digital travel can complement rather than replace physical tourism by providing more responsible and eco-friendly alternatives.

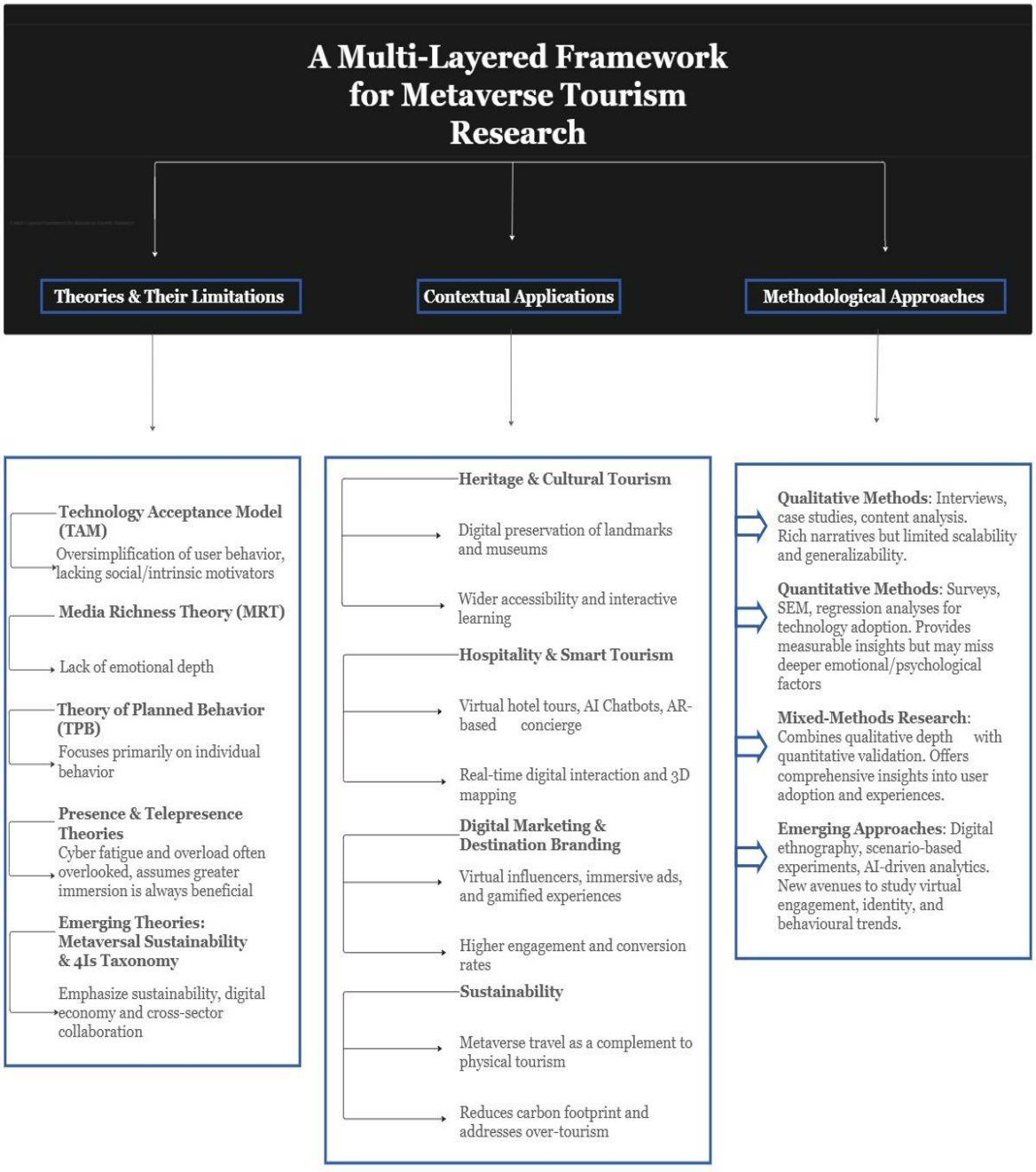
4.3.3 Methodological Contributions and Research Trends

The methodological approaches in Metaverse tourism research reflect the field's interdisciplinary nature. The study found that *qualitative research methods*, including case studies, interviews, and content analysis, provide rich narratives about user engagement, cultural perceptions, and virtual tourism experiences (Akyürek et al., 2024; Di Paolo et al., 2024). However, qualitative research is seen to often lack scalability and generalizability, which limits its ability to provide broader industry insights.

Conversely, *quantitative research* using surveys, regression analysis, and structural equation modeling (SEM) is widely used to empirically validate technology adoption models in Metaverse tourism. While these methods offer measurable insights into user preferences and engagement patterns, they do not always capture the deeper emotional and psychological factors that influence Metaverse tourism experiences (Liu & Park, 2024). *Mixed-methods research* has emerged as an effective approach that integrates both qualitative and quantitative techniques, offering a comprehensive view of how Metaverse tourism is adopted and experienced (Saleh, 2024; Prados-Castillo et al., 2024). This aligns with research trends in *digital ethnography*, *scenario-based experiments*, and *AI-driven analytics*, which provide new opportunities to analyze virtual engagement, digital

identity, and behavioral trends in Metaverse spaces (Gómez-Quintero et al., 2024; Cha et al., 2024).

Figure 4.2. Multi-Layered TCM Framework



Source: Own Elaboration

In comparison to previous literature reviews on Metaverse tourism, this study uniquely integrates a multi-layered analysis of theories, contexts, and methodologies, offering a structured synthesis of findings. While earlier studies have focused on single theoretical models or specific research methodologies, this research connects these components,

allowing for a broader and more interdisciplinary understanding of Metaverse tourism and its implications.

4.4 Future Avenues

The findings of this study suggest several key areas for further exploration in Metaverse tourism research. While technology adoption models have provided valuable insights, future research should develop more holistic frameworks that integrate socio-cultural, economic, and ethical dimensions of Metaverse tourism. Existing theoretical models often fail to account for regional disparities, cultural differences, and evolving user expectations, which underscores the need for more geographically diverse studies (Mihalic, 2024; Saleh, 2024).

Additionally, while Metaverse tourism research has advanced significantly in recent years, longitudinal studies are still lacking. Most studies reviewed in this research rely on cross-sectional data, making it difficult to assess long-term adoption patterns, user retention, and the sustainability of Metaverse tourism initiatives. Future research should explore how consumer attitudes toward Metaverse tourism evolve over time, particularly in response to technological advancements, regulatory changes, and shifting societal attitudes (Go & Kang, 2023; Prados-Castillo et al., 2024).

Another critical area for future research is the role of artificial intelligence (AI) and machine learning in enhancing virtual tourism experiences. AI-driven personalization, predictive analytics, and adaptive virtual environments could transform Metaverse tourism, yet there is limited empirical research on how these technologies influence user engagement and satisfaction (Shukla et al., 2024; Liu & Hao, 2024). Future studies should investigate how AI can optimize Metaverse tourism experiences while maintaining ethical considerations related to data privacy and algorithmic bias.

Finally, sustainability remains a key challenge in Metaverse tourism. While digital tourism offers an alternative to physical travel, reducing carbon footprints and over-tourism, there are concerns about the environmental impact of data centers, blockchain transactions, and virtual infrastructure (Mihalic, 2024). Future research should explore how the tourism industry can balance digital innovation with sustainability, potentially

by developing eco-friendly virtual tourism solutions and energy-efficient Metaverse applications (Saleh, 2024).

In conclusion, this study highlights the interdisciplinary nature of Metaverse tourism research, offering insights into theories, methodologies, and contextual applications. However, further studies are needed to expand the empirical base, enhance theoretical models, and address emerging technological and ethical challenges. The future of Metaverse tourism research lies in integrating new technologies, regional perspectives, and sustainability frameworks to ensure that digital tourism evolves in a responsible, inclusive, and user-centric manner.

Even though Metaverse and tourism show great potential, some discoveries show that Metaverse tourism also has drawbacks: some of these areas include technology access, technology equity, and more worrisome, dependency on technology enabled interactions. Hence, building on Saleh (2024), 'Darkverse' reveals the danger of replacing 'real travel' or travel in the physical realm as the kind of tourism it claims to complement.

However, these problems are opportunities for creating greater awareness as well as innovations and specific legislation. The conclusions propose that professional ethical standards and that sustainable orientation by and together with the stakeholders can therefore be imperative for maintaining an efficient and responsible development of Metaverse tourism as a novelty sector in accordance with established principles of sustainable economy and leadership of the United Nations. For instance, the application of *Service-Dominant Logic* to value co-creation underscores the need for collaborative efforts between technology providers, tourism operators, and communities to optimize Metaverse implementations.

The discussion of findings points to the fact that Metaverse is no longer a mere technological fad but a disruptive force with far reaching implications for tourism. This research aligns theoretical frameworks, empirical studies, and real-world cases, and thereby strengthens the case for Metaverse as an engine of change in the realm of tourism at the crossroads of sustainability and cultural heritage. Nonetheless, the realization of this potential is possible only by overcoming current issues through analytical research and cooperation with other disciplines and other stakeholders and employing new approaches. Nonetheless, as this technology develops, the contribution of Metaverse in

the tourism industry and further creation of human-based experiences and the worth of societies is bound to grow. Table 4.5 below summarizes the main research gaps that remain open for future investigation in the tourism field.

Table 4.6 Research Gaps and Future Directions in Metaverse Tourism

Present Research	Future Avenues
Theories	
Limited theoretical integration Most studies focus narrowly on tourism aspects, with minimal incorporation of behavioral psychology, digital marketing, and sustainability. TAM oversimplifies user behavior while Presence Theory ignores cyber fatigue.	**Expand theoretical foundations** - Integrate behavioral psychology, digital marketing, and sustainability studies to build a holistic framework for understanding the impacts of virtual tourism (Liu & Park, 2024). - Develop fatigue-aware immersion models combining Presence Theory with cyber-fatigue mitigation (Zhu et al., 2023; Mihalic, 2024) - Apply 4Is Taxonomy for sustainability integration in virtual experiences (Go & Kang, 2023)
Context	
Short-term analyses Current work often relies on cross-sectional methods, providing only snapshots of tourists' interactions with Metaverse technologies and urban-centric applications	**Longitudinal studies** - Conduct extended research to examine how tourists' attitudes and behaviors evolve over time as they engage with Metaverse platforms. - Include longitudinal case studies of UNESCO World Heritage VR applications (Liu & Hao, 2024). - Expand geographical focus to rural/indigenous tourism contexts currently underrepresented in research.
Methods	
Limited cross-cultural insights - Only 9 studies compare Western and Asian contexts, leaving a gap in understanding how cultural factors influence digital tourism preferences (Florido-Benítez, 2024; Di Paolo et al., 2024). - Dominance of quantitative surveys - Limited AI-driven personalization	**Cross-cultural exploration** - Prioritize studies that investigate regional variations in Metaverse adoption and experience design, addressing cultural nuances in virtual tourism behavior. - Scale digital ethnography for culturally sensitive Metaverse design (Gómez-Quintero et al., 2024). - Develop AI-driven cross-cultural analytics frameworks (Shukla et al., 2024)
Ethics and governance in infancy Preliminary discussions center on regulating virtual experiences, AI-driven marketing, and avatar-based interactions.	**Examination of Metaverse ethics** - Develop regulatory frameworks to ensure equitable, safe, and ethical practices, particularly regarding deepfake tourism influencers, AI-generated content, and blockchain-backed virtual passports (Gómez-Quintero et al., 2024). - Establish GDPR-compliant data collection protocols for VR tourism (Triviño-Tarradas et al., 2024). - Address "Darkverse" risks through industry-wide ethical guidelines (Saleh, 2024).

CHAPTER 5. CONCLUSIONS AND IMPLICATIONS

5.1 Conclusions

This study researched the role of Metaverse in shaping tourists' perceptions of destinations. The findings reveal that immersive technologies, such as VR and AR, significantly enhance user engagement and satisfaction by providing realistic, interactive experiences. Moreover, we can conclude that has the capacity to create immersive environments which can influence positively tourists' perceptions of destinations, aiding to their promotion and branding. We can also conclude that, metaverse may become a transformative technology driving innovation towards more sustainable tourism activity in specific contexts (e.g., heritage sites), increasing the wellbeing of local communities and tourists.

It was also found that the theoretical frameworks, like TAM and *Presence Theory*, offer valuable insights into user behavior, while practical applications, such as gamification and AI-driven storytelling, demonstrate the potential for transformative tourism experiences. However, challenges such as technological accessibility, ethical concerns, and the lack of longitudinal studies highlight the need for further research. In conclusion, Metaverse represents a paradigm shift in tourism, but its full potential can only be realized through more inclusive, sustainable, and ethically responsible practices.

The findings of this research provide significant insights into the role of Metaverse in shaping tourism. With the tourism industry rapidly evolving due to digital shifts, Metaverse introduces new opportunities and challenges that require academic and practical exploration. This chapter synthesizes the study's findings, linking them to theoretical and practical implications, while addressing limitations and areas for future research.

5.2 Theoretical and Practical Implications

5.2.1 Theoretical Contributions

This research contributes to Metaverse tourism literature by expanding existing theories and validating novel conceptual frameworks. Out of the 68 studies reviewed, the *Technology Acceptance Model* (TAM) was the most frequently applied theoretical

framework, appearing in 12 studies (Liu & Park, 2024; Shukla et al., 2024). TAM helps explain perceived ease of use and usefulness, yet this study finds that TAM alone does not fully capture user engagement in Metaverse tourism, requiring complementary frameworks like *Presence Theory* and *Telepresence Theory* (9 studies), which emphasize psychological immersion and realism in virtual experiences (Zhu et al., 2023; Go & Kang, 2023).

Self-Determination Theory (SDT) was referenced in 7 studies, particularly in research on sustainable and regenerative tourism, highlighting intrinsic motivations such as authenticity, identity, and prosocial engagement (Assiouras & Bayer, 2024). Furthermore, *Service-Dominant Logic* (SDL) was adopted in 5 studies, demonstrating the role of value co-creation between users, tourism stakeholders, and developers (Di Paolo et al., 2024). This underscores the increasing importance of co-created tourism experiences within Metaverse, where digital avatars and AI-driven recommendations personalize user engagement.

5.2.2 Practical Implications

From a practical standpoint, findings from 18 studies emphasize that destination managers and tourism marketers must rethink digital engagement strategies to accommodate Metaverse tourism. Findings indicate that interactive experiences, gamification, and AI-driven personalization enhance virtual tourism adoption (Go & Kang, 2023). Similarly, virtual museums, cultural reconstructions, and AI-powered concierge services have been identified as valuable assets for destination branding (Lee, 2022), therefore should be further pursued. However, digital accessibility remains a significant barrier, particularly for users in regions where VR infrastructure is still underdeveloped (10 studies) (Mihalic, 2024).

Additionally, 14 studies highlight the importance of gamification and AI-enhanced storytelling in shaping tourist engagement. Virtual platforms such as VR exhibitions, interactive 3D tours, and AI-enhanced digital guides have been found to increase engagement, knowledge retention, and emotional connections to destinations (Shukla et al., 2024; Liu & Hao, 2024). These findings suggest that businesses in the tourism sector should prioritize immersive digital marketing strategies, leveraging social VR experiences, blockchain-based travel authentication, and AI-driven itinerary planning.

Policymakers should establish guidelines for AI/blockchain integration in Metaverse tourism, ensuring algorithmic fairness (e.g., auditing tools for bias in VR content curation) and decentralized governance to prevent data exploitation (Darkverse risks - Singh et al., 2024; Metaverse crime - Gómez-Quintero et al., 2024; Metaversal Sustainability - Mihalic, 2024). Collaborations with NGOs like UNESCO could prototype ethical frameworks for blockchain-based virtual heritage preservation.

5.3 Limitations

5.3.1 Limitations

Despite its contributions, this study has several limitations. Firstly, the geographic distribution of Metaverse tourism research is highly concentrated in a few countries. The majority of reviewed studies originate from technologically advanced nations, such as the USA, China, and South Korea, collectively accounting for 43 studies (Liu & Hao, 2024; Zhu et al., 2023). This geographic imbalance limits the generalizability of findings to developing regions, where infrastructure for Metaverse tourism remains underdeveloped.

While the study covers diverse contexts, the overrepresentation of developed economies may skew insights toward high-resource settings, overlooking unique socio-technical challenges (e.g., connectivity gaps, cultural preferences) in underrepresented regions like Africa and Latin America. Future research should prioritize cross-cultural studies in the Global South to validate and contextualize these findings.

A second limitation is the lack of longitudinal studies, as the majority of research examines short-term perceptions and behavioral responses to Metaverse tourism. Only 5 studies (Triviño-Tarradas et al., 2024; Mihalic, 2024) adopt longitudinal designs, making it difficult to assess the long-term adoption, retention, and evolving consumer expectations within Metaverse environments.

Additionally, privacy, security, and ethical concerns in Metaverse tourism remain underexplored, with only 6 studies directly addressing data protection, biometric tracking, and misinformation risks (Gómez-Quintero et al., 2024). The increasing use of AI-driven digital concierges, behavioural tracking, and deep-learning algorithms for personalized

recommendations raises concerns about user autonomy, data security, and digital surveillance in tourism spaces.

5.3.2 Addressing the Research Aim

This study set out to explore how virtual experiences, particularly those enabled by the Metaverse, influence tourists' perceptions of destinations. Through a systematic review of 68 scholarly articles, the findings reveal that virtual experiences significantly shape how tourists perceive, engage with, and form expectations about destinations. These experiences foster emotional connection, enhance destination image, and support more informed travel decisions. While not a full substitute for physical travel, Metaverse-based experiences serve as powerful complements by offering immersive previews that influence pre-travel perceptions and planning (Liu & Park, 2024). The study identifies three key thematic areas:

- Perception Shaping: The Metaverse enhances destination appeal through virtual tours and simulations that impact travelers' emotional and cognitive evaluations.
- Sustainability: Virtual tourism offers environmental benefits by reducing travel-related emissions; however, challenges such as digital accessibility remain (Mihalic, 2024).
- Marketing and Co-Creation: Tourism stakeholders leverage Metaverse platforms for collaborative branding and experience co-creation, though concerns around data privacy and ethical governance persist (Gómez-Quintero et al., 2024).

Overall, the Metaverse emerges as a transformative, though not substitutive, innovation that reshapes tourist perceptions through immersive engagement. Its continued integration into tourism strategy will depend on addressing ethical, accessibility, and infrastructural challenges to ensure inclusive and effective deployment.

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APPENDICES

Appendix 1. Review Protocol for the Study

Section	**Description**	**Justification**
Objective	To identify and analyze research articles that explore the intersection of Metaverse and tourism.	The objective ensures a focused exploration of how Metaverse technologies impact the tourism industry, creating a basis for comprehensive analysis.
Search Strategy	To utilize Boolean operators and specific search strings to locate relevant literature for analysis.	The search strategy ensures a systematic approach to literature collection, enabling comprehensive coverage of relevant articles.
Databases Searched	Scopus AND reference search	Scopus is chosen for its comprehensive indexing of peer-reviewed articles and high relevance to academic and professional research.
Boolean Operators	AND, OR, NOT	
Search Strings	"Metaverse" "Tourism" "Augmented Reality" "Tourism Marketing" "Virtual Reality" "Digital Twin", "Immersive Experiences" OR "Immersive Technologies" "Smart Tourism" OR "Smart Destinations" "Gamification" "Telepresence" AND "Digital Marketing"	These terms ensure a wide net is cast to capture articles dealing with diverse aspects of Metaverse and its applications in tourism.
Selection Criteria		
- Inclusion	- Articles published in peer-reviewed journals or conferences	Inclusion criteria ensure that the most relevant and high-quality articles are selected for analysis, focusing on Metaverse-tourism relationship.
	- Studies that specifically focus on applications or implications of Metaverse in tourism	
	- Publications in English	
	- Article up until July 2024	
- Exclusion	- Non-English articles	Exclusion criteria prevent irrelevant or tangential studies from distorting the analysis or diluting the focus on Metaverse applications in tourism.
	- Studies focused solely on other unrelated technologies in tourism without mention of Metaverse	
	- Articles with only a general discussion of technology without focus on tourism or Metaverse	
Screening Process	Each article is screened by one researcher using predefined criteria, ensuring alignment with the study's focus on Metaverse and tourism.	A systematic screening process minimizes bias and ensures that all selected articles align with the defined objectives and focus areas.
Data Extraction	Extracted data include: author(s), publication year, study focus, methodology, and main contributions.	Data extraction ensures consistency in evaluating and comparing articles, facilitating comprehensive analysis and synthesis of findings.
Quality Assessment	Quality and relevance of articles are assessed based on: theoretical contribution, clarity of methodology, and relevance to study objectives.	Quality assessment ensures that only rigorous and impactful studies are included, enhancing the reliability and credibility of the analysis and conclusions drawn.

Appendix 2. List of Articles Retrieved for SLR

Nr.	Title	Authors	Year	Source	Focus	Method	Contribution
1	From Metaverse Experience to Physical Travel: The Role of the Digital Twin in Metaverse Design	Deng, B., Wong, I.A., Lian, Q.L.	2024	Tourism Review	Impact of digital-twin design on travel intentions	Design science approach; experimental design	Guidance for digital-twin platform design
2	Tourism Metaverse from the Attribution Theory Lens: A Metaverse Behavioral Map and Future Directions	Hassan, T., Saleh, M.I.	2024	Tourism Review	Application of attribution theory in tourism	Literature review and theoretical analysis	Foundation for attribution theory in tourism
3	Virtual Spaces as the Future of Consumption in Tourism, Hospitality, and Events	Filimonau, V., Ashton, M., Stankov, U.	2024	Journal of Tourism Futures	Future consumption in tourism and events	Review of academic and grey literature	Research directions for virtual consumption
4	Tourist Loyalty in Metaverse: The Role of Immersive Tourism Experience and Cognitive Perceptions	Jafar, R.M.S., Ahmad, W.	2024	Tourism Review	Tourist loyalty through immersive experiences	Online survey; structural equation modeling	Guidelines for enhancing tourist loyalty
5	Metaverse Research Propositions: Online Intermediaries	Ampountolas, A., Menconi, G., Shaw, G.	2024	Tourism Economics	Metaverse potential for online travel agencies	Research note; conceptual propositions	Future research for online intermediaries
6	Embracing Metaverse: Cultivating Sustainable Tourism Growth on a Global Scale	Adnan, N., Rashed, M.F., Ali, W.	2024	Current Issues in Tourism	Sustainability in tourism through Metaverse	Systematic meta-analysis; behavioral theories	Framework for sustainable tourism practices
7	Gen Z Travel Intentions and Museum Visits in Metaverse: Case of Egypt, Scotland, and Turkey	Nazli, M., Bulut, C., Ozarslan, Y.	2024	Current Issues in Tourism	Gen Z virtual museum visits and travel intentions	Semi-structured interviews; lab sessions	Experience design for Gen Z museum visits

Nr.	Title	Authors	Year	Source	Focus	Method	Contribution
8	Metaverse? It is virtual hell! Understanding the dark side of Metaverse (darkverse) for hospitality and tourism customers	Singh, R., Iqbal, J., Kukreja, P., Yadav, M., Ramkissoon, H.	2024	Tourism Review	Dark side of Metaverse for hospitality and tourism customers	Literature review and conceptual analysis	Theoretical framework on the negative impacts of Metaverse in tourism
9	Impact of Metaverse technology on hospitality and tourism industry: an interplay of social media marketing on hotel booking in India	Ahmad, K., Sharma, B., Khatwani, R., Mishra, M., Mitra, P.K.	2024	International Journal of Tourism Cities	Role of social media marketing in Metaverse hotel booking	Structural model analysis using SmartPLS	Empirical evidence on factors influencing Metaverse technology adoption
10	Unlocking the power of Metaverse technology in tourism: enhancing experiences and perceptions about tourism destinations	Jafar, R.M.S., Zhu, J., Crabbe, M.J.C., Yue, G.X.-G., Yang, Y.	2024	Asia Pacific Journal of Tourism Research	Visitor interaction in Metaverse	Partial least squares structural equation modeling	Insights on how telepresence enhances behavioral perceptions in tourism
11	Beyond the real world: Metaverse adoption patterns in tourism among Gen Z and Millennials	Calderón-Fajardo, V., Puig-Cabrera, M., Rodríguez-Rodríguez, I.	2024	Current Issues in Tourism	Metaverse adoption among Gen Z and Millennials	PLS-SEM analysis using UTAUT-2 model	Understanding factors influencing Metaverse technology acceptance
12	The impacts of Metaverse on tourist behaviour and marketing implications	Kılıçarslan, Ö., Yozukmaz, N., Albayrak, T., Buhalis, D.	2024	Current Issues in Tourism	Influence of Metaverse on tourist behavior	Exploratory qualitative research	Identification of Gen Z motivations and marketing implications
13	Technological evolution in tourism: a Horizon 2050 perspective	Chon, K.K.S., Hao, F.	2024	Tourism Review	Impact of technology on tourism until 2050	Hybrid approach: historical analysis and future projections	Longitudinal perspective on technological milestones and future trends

Nr.	Title	Authors	Year	Source	Focus	Method	Contribution
14	Metaverse as a booster of tourism transformation towards virtual management strategies	Prados-Castillo, J.F., Torrecilla-García, J.A., Liébana-Cabanillas, F.	2024	Tourism Review	Virtual tourism management strategies	Bibliometric analysis and systematic literature review	Framework for leveraging VR and AR in tourism operations
15	Exploring the impact of Metaverse tourism experiences on actual visit intentions	Liu, H., Park, K.-S.	2024	International Journal of Tourism Research	Metaverse tourism and visit intentions	Structural equation modeling	Model integrating TAM and TPB, highlighting presence's impact on visit intentions
16	How to use augmented reality to promote a destination?	Zhu, C., Io, M.-U., Hall, C.M., Ngan, H.F.B., Peralta, R.L.	2024	International Journal of Tourism Research	Role of AR in destination promotion	Structural equation modeling	Introduction of AR attachment as a mediator in tourism marketing
17	How does Metaverse affect the tourism industry? Current practices and future forecasts	Özdemir Uçgun, G., Şahin, S.Z.	2024	Current Issues in Tourism	Metaverse's impact on tourism practices	Qualitative interviews	Analysis of potential benefits and challenges for tourism marketing and operations
18	Metaverse tourism for sustainable tourism development: Tourism Agenda 2030	Go, H., Kang, M.	2023	Tourism Review	Sustainability in Metaverse tourism	UNWTO reports, Google Trends data, and literature review	Highlights Metaverse's role in achieving sustainable tourism goals
19	Metaverse customer journeys in tourism: building viable virtual worlds	Zhong, L., Xu, Z., Morrison, A.M., Li, Y., Zhu, M.	2023	Tourism Review	Customer journeys in Metaverse tourism	Media analysis and practitioner interviews	Proposes the MIEB model for Metaverse customer journey management
20	Tourism Using Virtual Reality: Media Richness and Information System Successes	Lee, U.-K.	2022	Sustainability (Switzerland)	Virtual reality in tourism during COVID-19	PLS algorithm-based analysis	Explains media richness's effect on tourism experience

Nr.	Title	Authors	Year	Source	Focus	Method	Contribution
21	The orientation of Gen Zs towards Metaverse tourism	Mandal, S., Paul, J., Kotni, V. V. D. P., Chintaluri, M. G.	2024	Journal of Destination Marketing and Management	Gen Z engagement with Metaverse tourism	SmartPLS analysis	Explores enablers of Gen Z engagement and satisfaction with Metaverse tourism
22	Metaverse and Tourism: From a New Niche to a Transformation	Volchek, K., Brysch, A.	2023	Springer Proceedings in Business and Economics	Metaverse transforming tourism	Semi-systematic literature review	Conceptualizes Metaverse's alignment with tourism
23	Metaverse marketing and consumer research: theoretical framework and future research agenda in tourism and hospitality industry	Rather, R. A.	2023	Tourism Recreation Research	Consumer research in Metaverse tourism	Theoretical framework and literature review	Offers a future research agenda for Metaverse tourism marketing
24	Metaverse in the hospitality and tourism industry: An overview of current trends and future research directions	Gursoy, D., Malodia, S., Dhir, A.	2022	Journal of Hospitality Marketing and Management	Current trends and future directions in Metaverse tourism	Conceptual framework development	Identifies research gaps and future directions for Metaverse in tourism
25	Beyond boundaries: exploring Metaverse in tourism	Chen, Z.	2024	International Journal of Contemporary Hospitality Management	Metaverse engagement gap in tourism	Case studies and practical implications	Discusses engagement gaps and challenges in Metaverse tourism
26	Metaverse in tourism: drivers and hindrances from stakeholders' perspective	Chen, S., Chan, I. C. C., Xu, S., Law, R., Zhang, M.	2023	Journal of Travel and Tourism Marketing	Drivers and hindrances in Metaverse tourism	In-depth stakeholder interviews	Reveals factors driving and hindering Metaverse tourism development

Nr.	Title	Authors	Year	Source	Focus	Method	Contribution
27	The Effects of Metaverse on the Tourism Industry	Özdemir Uçgun, G.	2024	Journal of Metaverse, 4(1), pp. 71–83	Examines impacts of Metaverse, XR, and AI on tourism, including sustainability benefits	In-depth interviews with 28 experts, content analysis	Informs stakeholders on technology integration, highlights benefits for minority groups, supports training and sustainable tourism
28	Exploring regenerative tourism using media richness theory: Emerging role of immersive journalism, Metaverse-based promotion, eco-literacy, and pro-environmental behavior	Hui, X., Raza, S. H., Khan, S. W., Zaman, U., & Ogadimma, E. C.	2023	Sustainability, 15(6), 5046	Investigates regenerative tourism and Metaverse's role in promoting eco-literacy and behavior	Cross-sectional online survey with 776 digital media users	Highlights immersive journalism and Metaverse promotion's impact on regenerative tourism intention and eco-conscious behavior
29	Leveraging social capital for destination promotion in Metaverse: The Enoverse case	Di Paolo, F., Bettiga, D., & Lamberti, L.	2024	Tourism Management, 107(105072)	Investigates social capital's role in rural tourism promotion through Metaverse-based community	Case study on Italian winery consortium using social capital theory	Highlights Metaverse's role in community-led tourism promotion, enhancing stakeholder engagement
30	Rethinking Metaverse Tourism: A Taxonomy and an Agenda for Future Research	Yang, F. X., & Wang, Y.	2023	Journal of Hospitality & Tourism Research	Metaverse applications in tourism	Conceptual analysis, creation of "4Is" taxonomy	Proposes a taxonomy of Metaverse tourism: imitation, intensification, interaction, and integration; sets an agenda for future research

Nr.	Title	Authors	Year	Source	Focus	Method	Contribution
31	Beyond Virtual Boundaries: The Intersection of Metaverse Technologies, Tourism, and Lifelong Learning	Saneinia, S., Zhai, X., Zhou, R., Gholizadeh, A., Wu, R., & Zhu, S.	2024	Humanities & Social Sciences Communications	Integration of Metaverse in tourism education	Semantic network analysis, sentiment analysis on Weibo data	Explores Metaverse as a platform for tourism education, addressing ethical concerns and potential for lifelong learning; provides insights into public perceptions and educational value in China's tourism sector
32	Extensible Metaverse Implication for a Smart Tourism City	Suanpang, P., Niamsorn, C., Pothipassa, P., Chunhapataragul, T., Netwong, T., & Jermsittiparsert, K.	2022	Sustainability	Metaverse and smart tourism city	System architecture design, user satisfaction survey	Develops an open Metaverse platform for smart tourism cities; findings show high user satisfaction and the potential of Metaverse to enhance tourism experiences in smart destinations
33	Metaverse Cannot Be an Extra Marketing Immersive Tool to Increase Sales in Tourism Cities	Florido-Benítez, L.	2024	International Journal of Tourism Cities	Social impacts of Metaverse in tourism cities	Conceptual analysis, examination of Metaverse definitions	Introduces the concept of "MetaTourPolis" to enhance residents' well-being and connectivity in tourism cities through Metaverse integration; highlights accessibility and inclusivity benefits for people with disabilities
34	Gamification in Metaverse: Affordance, Perceived Value, Flow State, and Engagement	Cha, S.-S., Kim, C.Y., Tang, Y.	2024	International Journal of Tourism Research	Gamification in Metaverse tourism platforms	Survey-based quantitative analysis (confirmatory factor analysis, path analysis)	Explores how gamification affects engagement in Metaverse platforms; identifies affordances like identity and competition as drivers of flow state and engagement

Nr.	Title	Authors	Year	Source	Focus	Method	Contribution
35	Examining the Potential of Virtual and Augmented Reality in Enhancing Tourism Experiences	Shukla, V., Rana, S., Prashar, S.	2024	Bottom Line	VR and AR in tourism experiences	Survey and quantitative analysis (descriptive stats, structural equation modeling)	Highlights VR and AR's role in overcoming physical travel barriers, promoting inclusivity, and enhancing tourism experiences; emphasizes the potential for differentiation and customer satisfaction through immersive technology integration in tourism marketing efforts
36	Metaverse tourism and Gen-Z and Gen-Y's motivation: "will you, or won't you travel virtually?"	Zhang, J., Quoquab, F., Mohammad, J.	2024	Tourism Review, 79(2)	Self-determination theory, Theory of planned behaviour	Cross-sectional survey, PLS-SEM	Identifies attitude, perceived behavioral control, and intrinsic motivation as key factors for engaging in Metaverse tourism. Offers managerial implications for tourism practitioners and developers.
37	Exploring tourist's Metaverse experience using destination spatial presence quality & perceived augmentation (MEPE)	Natarajan, T., Pragha, P., et al.	2024	Current Issues in Tourism	Systems theory	Cross-sectional descriptive study, Smart PLS	Highlights factors like entertainment and FOMO in enhancing spatial presence quality and destination brand equity, influencing real-world visits.
38	Metaverse for tourists and tourism destinations	Ioannidis, S., Kontis, A. P.	2023	Information Technology and Tourism	Disruptive technologies	Literature review	Explores 19 ways Metaverse can transform tourism. Addresses trust, security, decision-making, and marketing challenges while proposing practical applications for Metaverse.

Nr.	Title	Authors	Year	Source	Focus	Method	Contribution
39	Metaverse marketing and consumer research in tourism	Rather, R. A.	2023	Tourism Recreation Research	Real-time multisensory-social-interactions (RTMSIs)	Extensive literature review	Develops a theoretical framework emphasizing RTMSIs in Metaverse tourism and marketing. Provides a research agenda for further exploration of engagement, immersion, and social presence.
40	Metaverse in the hospitality and tourism industry	Gursoy, D., Malodia, S., et al.	2022	Journal of Hospitality Marketing and Management	Hospitality and consumer behavior	Conceptual framework	Proposes staging experiences, consumer behavior changes, and operational strategies for leveraging Metaverse in the hospitality and tourism sectors.
41	The Application of Metaverse in the Tourism Sector as a Tool for Enhancing Sustainability—Case Study: A Medieval 'Perfume Burner' of the Local Historical Museum of Montilla (Cordoba, Spain)	Triviño-Tarradas, P., Mohedo-Gatón, A., Carranza-Cañadas, P., Hidalgo-Fernandez, R.E.	2024	Sustainability (Switzerland)	Tourism Sustainability	Case study on creating 3D virtual models of cultural heritage sites.	Highlighted how 3D models in Metaverse can promote accessibility to cultural heritage, reduce travel needs, and enhance digital sustainability.
42	Gemiverse: The blockchain-based professional certification and tourism platform with its own ecosystem in Metaverse	Wei, D.	2022	International Journal of Geoheritage & Parks	Blockchain for Tourism	Conceptualization of the Gemiverse platform integrated with blockchain for tourism certification.	Demonstrated the role of blockchain in creating trusted, immersive tourism ecosystems through prototypes and test scenarios.
43	Meet Your Digital Twin in Space? Profiling International Expat's Readiness for Metaverse Space Travel, Tech-Savviness, COVID-19 Travel Anxiety, and Travel Fear of Missing Out	Zaman, U., Koo, I., Abbasi, S., Raza, S.H., Qureshi, M.G.	2022	Sustainability (Switzerland)	COVID-19 Impact on Virtual Tourism	Survey-based study using SEM to evaluate Metaverse readiness among expats in UAE during COVID-19.	Showed that COVID-19 anxiety, combined with FOMO and tech-savviness, increased readiness for Metaverse tourism, enabling digital-tourism transformation.

Nr.	Title	Authors	Year	Source	Focus	Method	Contribution
44	The Development Of Metaverse Technology To Raise Up The Standard Of Health Tourism	Potjanajaruwit, P.	2023	Geojournal of Tourism and Geosites	VR for Health Tourism	Mixed methods: questionnaire for tourists, focus groups with entrepreneurs; regression analysis.	Found that VR spa glasses using Metaverse technology enhanced sensory experiences and boosted Thailand's health tourism industry.
45	When "Old" Me ets "New": Unlocking the Future of Innovative Technology Implementation in Heritage Tourism	Jia, S., Chi, O.H., Martinez, S.D., Lu, L.	2023	Journal of Hospitality & Tourism Research	Heritage Tourism Technology	Comprehensive literature review proposing Technology-Destination Interaction framework.	Identified future research directions, including ChatGPT and Metaverse technologies, for innovative heritage tourism.
46	Revitalizing Island Tourism in the Digital Transformation Era: Case of Jebudo Island	Kang, H.-C., Baek, W.-Y., Choi, J.-Y., Kim, J.-S.	2023	Journal of Marine and Island Cultures	Digital Transformation for Tourism	Focus group interviews with stakeholders from Jebudo Island.	Offered insights into adopting technologies to modernize underdeveloped tourist destinations like Jebudo Island.
47	Immersive cultural heritage digital documentation and information service for historical figure Metaverse: a case of Zhu Xi, Song Dynasty, China	Fan, Z., Chen, C., Huang, H.	2022	Heritage Science	Immersive Cultural Documentation	Metaverse-based framework for historical figure digital documentation; combined virtual-real experiences.	Developed a Zhu Xi Metaverse system, showcasing the role of immersive technology in enhancing cultural preservation and education.
48	Travelling Metaverse: Potential Benefits and Main Challenges for Tourism Sectors and Research Applications	Monaco, S., Sacchi, G.	2023	Sustainability (Switzerland)	Tourism Research Applications	Conceptual analysis of Metaverse benefits/challenges, using case studies in tourism and food sectors.	Identified challenges like social acceptance and data security while emphasizing Metaverse's potential for immersive tourism research.

Nr.	Title	Authors	Year	Source	Focus	Method	Contribution
49	Metaverse in the urban destinations in China: some insights for the tourism players	Zhang, J., Quoquab, F.	2023	International Journal of Tourism Cities	Urban Metaverse Tourism	Literature review and data from tour operators' websites; highlighted applications in Chinese urban tourism.	Revealed the vitality of Metaverse tourism in urban contexts, powered by China's gaming industry and traditional cultural integration.
50	From tourism in the Darkverse to tourism with digital detox	Saleh, M.I.	2024	Current Issues in Tourism	Egypt	Mixed methods, including content analysis and scenario-based experiments.	Provides design principles to responsibly leverage Metaverse tourism, mitigating risks of cybersickness and enhancing human-centered tourism experiences.
51	Metaversal sustainability: conceptualisation within the sustainable tourism paradigm	Mihalic, T.	2024	Tourism Review	Slovenia	Paradigmatic framework and scenario analysis.	Advances the sustainable tourism paradigm to integrate virtual environments like Metaverse for holistic development beyond physical dimensions.
52	Self-transcendent emotions as the locomotive of value co-creation in sustainable tourism	Assiouras, I., Bayer, R.	2024	Tourism Review	France	Service-dominant logic approach based on literature review.	Explores self-transcendent emotions in sustainable tourism, emphasizing their role in facilitating value co-creation while identifying risks of value co-destruction.
53	Tourism Metaverse from the attribution theory lens	Hassan, T., Saleh, M. I.	2024	Tourism Review	Saudi Arabia, Egypt, Russia	Literature review from Scopus and Web of Science, exploring attribution theory dimensions.	Highlights how attribution theory can guide transformative research in Metaverse tourism to understand tourists' judgments and decision-making processes.

Nr.	Title	Authors	Year	Source	Focus	Method	Contribution
54	Virtual spaces as the future of consumption in tourism, hospitality, and events	Filimonau, V., Ashton, M.	2024	Journal of Tourism Futures	UK, Netherlands, Serbia	Viewpoint analysis based on academic and grey literature.	Proposes a research agenda to understand the consumption of virtual spaces and their implications for tourism, hospitality, and events (THE) industries.
55	Metaverse tourism for sustainable tourism development	Go, H., Kang, M.	2023	Tourism Review	USA	Viewpoint and exploratory study using UNWTO reports and Google Trends data.	Defines Metaverse tourism in the context of UNWTO's Sustainable Development Goals (SDGs), offering insights for future discussions on sustainable tourism through virtual experiences.
56	Tourism using virtual reality: Media richness and information system successes	Lee, U.-K.	2022	Sustainability	South Korea	Online scenario survey and PLS algorithm analysis with 182 participants.	Examines how VR tourism content increases perceived enjoyment and visit intention, highlighting its significance for the tourism industry post-COVID-19.
57	Examining the potential of virtual and augmented reality in enhancing tourism experiences	Shukla, V., Rana, S., Prashar, S.	2024	The Bottom Line Managing Library Finances	India, UAE	Survey with 412 tourists using descriptive statistics, multidimensional scaling, and SEM.	Identifies VR/AR's capabilities to overcome travel constraints and foster inclusive tourism, emphasizing their potential for cultural exchange and sustainability.
58	Metaverse cannot be an extra marketing immersive tool to increase sales in tourism cities	Florido-Benítez, L.	2024	International Journal of Tourism Cities	Spain	Review and analysis of Metaverse definitions from experts and organizations.	Introduces the "MetaTourPolis" concept, exploring how Metaverse platforms can improve quality of life in tourism cities, especially for residents and people with disabilities.

Nr.	Title	Authors	Year	Source	Focus	Method	Contribution
59	Leveraging social capital for destination promotion in Metaverse: The Enoverse case	Di Paolo, F., Bettiga, D., Lamberti, L.	2024	Tourism Management	Italy	Case study of a winery consortium using Metaverse.	Analyzes social capital dynamics in promoting rural destinations, highlighting stakeholder cohesion and innovative marketing in virtual environments.
60	Exploring non-immersive virtual reality experiences in tourism	Zhu, C., Wu, D. C. W., et al.	2023	International Journal of Tourism Research	China, New Zealand, Finland, Sweden	Survey and telepresence theory application.	Explores antecedents and consequences of telepresence in non-immersive VR experiences, providing practical insights for tourism marketing strategies.
61	Metaverse and regenerative tourism: the role of avatars in promoting sustainable practices	Liu, S., Hao, F.	2024	Asia Pacific Journal of Tourism Research	China	PLS-SEM analysis of 483 participants.	Highlights the role of avatars in virtual tourism for promoting conservation and regenerative practices, linking virtual environments with ethical behaviors.
62	The role of Metaverse in Silk Road's tourism	Dayoub, B., Yang, P., Omran, S.	2024	International Review for Spatial Planning and Sustainable Development	China	Multi-disciplinary qualitative approach.	Explores Metaverse's potential in preserving and revitalizing Silk Road heritage through immersive technologies and storytelling.
63	Exploring the impact of Metaverse tourism experiences on actual visit intentions: An integrated model of presence, the Technology Acceptance Model, and the Theory of Planned Behavior.	Liu, H., Park, K.-S.	2024	International Journal of Tourism Research	South Korea	Structural equation modeling with a questionnaire-based experiment (478 responses).	Merges TAM and TPB models to examine how Metaverse tourism experiences influence visit intentions, emphasizing the role of presence in enhancing tourist attitudes and behaviors.

Nr.	Title	Authors	Year	Source	Focus	Method	Contribution
64	Metaversal sustainability: conceptualisation within the sustainable tourism paradigm	Mihalic, T.	2024	Tourism Review	Slovenia	Paradigmatic framework and scenario analysis.	Proposes "metaversal sustainability" to integrate virtual environments like Metaverse into the sustainable tourism paradigm for holistic development.
65	Metaverse as a booster of tourism transformation towards virtual management strategies	Prados-Castillo, J. F., Torrecilla-García, J. A., Liébana-Cabanillas, F.	2024	Tourism Review	Spain	Bibliometric analysis and systematic literature review.	Analyzes Metaverse tourism's potential for operational efficiency and customer satisfaction while highlighting virtual exploration opportunities.
66	Metaverse in tourism education: A mixed method on vision, challenges and extended TAM	Akyürek, S., Genç, G., Çalık, İ., Şengel, Ü.	2024	Journal of Hospitality, Leisure, Sport and Tourism Education	Turkey	Mixed methods: interviews with 13 academics and a survey of 268 students analyzed using PLS-SEM.	Explores Metaverse's potential in tourism education, outlining its benefits for interactive learning and challenges in accessibility and infrastructure.
67	A scoping study of crime facilitated by Metaverse	Gómez-Quintero, J., et al.	2024	Futures	UK	Nominal Group Technique (NGT) with literature review and expert elicitation exercises.	Identifies potential crime threats in Metaverse, emphasizing the need for preventative measures to manage these risks within tourism and other sectors.

Nr.	Title	Authors	Year	Source	Focus	Method	Contribution
68	The reality of virtual worlds: pros and cons of their application to foreign language teaching	Garrido-Iñigo, P., Rodríguez-Moreno, F.	2015	Interactive Learning Environments, 23(4), 453–470	Spain	Testing OpenSim with 108 tourism students learning French at Universidad Rey Juan Carlos. Observations, virtual world simulations, and repeated tests were used to assess language learning outcomes.	Demonstrates the potential of virtual worlds like OpenSim in enhancing language acquisition, emphasizing the role of avatars for self-identity and engagement. Discusses challenges related to technical, theoretical, and pedagogical sustainability.