

# Metaverse as a booster of tourism transformation towards virtual management strategies

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## Abstract

**Purpose** – *The primary objective of this study is to ascertain how Metaverse technologies, primarily virtual reality (VR) and augmented reality (AR), redefine tourism experiences. It aims to delve into the capabilities of these technologies in eliminating conventional physical and economic barriers and enabling virtual exploration of destinations. Additionally, this study seeks to understand how tourism enterprises can leverage Metaverse technologies for operational efficiency and enhance customer satisfaction.*

**Design/methodology/approach** – *This research uses a two-pronged methodological approach, incorporating bibliometric analysis techniques and a systematic literature review. Bibliometric analysis provides a quantitative assessment of existing literature, identifying key trends, authors and publications in the domain of Metaverse tourism. Concurrently, this systematic literature review qualitatively evaluates the content and context of these studies, focussing on the applications of VR and AR in tourism as well as the managerial and consumer implications therein.*

**Findings** – *The findings reveal a significant uptick in literature production in the Metaverse tourism domain post-2018, indicating a burgeoning interest in this field. Metaverse facilitates a unique blend of engaging and personalised tourism experiences from the comfort of one's home. Moreover, tourism enterprises stand to gain from streamlined booking processes and to improve operational efficiency, which in turn augments customer satisfaction.*

**Research limitations/implications** – *This research is confined to the analysis of the existing literature and does not involve primary data collection, which could limit the comprehensiveness of the insights. Moreover, the nascent stage of Metaverse technology in tourism presents a challenge in deriving conclusive implications. This study underscores the need for further empirical research to validate the theoretical frameworks discussed and explore the long-term implications of Metaverse technologies in the tourism sector.*

**Practical implications** – *Metaverse opens avenues for tourism enterprises to enhance their customer engagement and operational efficiency. It offers a novel platform for immersive and personalised travel experiences, thereby potentially increasing the market reach and customer satisfaction. The streamlined processes facilitated by Metaverse could also lead to cost reduction and increased profitability for tourism enterprises.*

**Social implications** – *The integration of Metaverse technologies could democratise travel experiences, allowing individuals who might be economically or physically constrained to virtually explore global destinations. However, it also raises concerns regarding the digital divide and potential loss of authentic human interactions and cultural exchanges that traditionally characterise tourism.*

**Originality/value** – *This study is among the pioneering efforts to quantitatively and qualitatively analyse the burgeoning field of metaverse tourism. By amalgamating bibliometric analysis with a systematic literature review, it unveils the potential of Metaverse technologies in transcending conventional tourism paradigms, presenting a comprehensive understanding of the practical, managerial and consumer-centric implications therein.*

**Keywords** *Engagement, Marketing strategies, Consumer behaviour, Digital transformation, Traveller experience, Virtual tourism*

**Paper type** *Research paper*

## 元宇宙作为旅游业向虚拟管理战略转型的助推器

### 摘要

**设计/方法/途径:** 本研究采用了双管齐下的方法,既有文献计量分析技术,又有系统的文献综述。文献计量分析对现有文献进行定量评估,确定元宇宙领域的主要趋势、作者和出版物。同时,系统性文献综述对这些作品的内容和背景进行了定性评估,重点关注虚拟现实(VR)和增强现实(AR)在旅游业中的应用以及对管理和消费者的影响。

**研究目的:** 本研究的主要目的是确定元宇宙技术(主要是VR和AR)如何重新定义旅游体验。研究旨在深入探讨这些技术在消除传统物理和经济障碍以及实现目的地虚拟探索方面的能力。此外,本研究还试图了解旅游企业如何利用元数据技术提高运营效率和客户满意度。

**研究结果:** 研究结果表明,2018年后,Metaverse旅游领域的文献产量大幅上升,表明人们对这一领域的兴趣日益浓厚。Metaverse可以让人们在家中就能享受到独特的个性化旅游体验。此外,旅游企业可从简化预订流程和提高运营效率中获益,进而提高客户满意度。

**研究限制/影响:** 本研究仅限于对现有文献的分析,不涉及原始数据收集,这可能会限制研究见解的全面性。此外,Metaverse技术在旅游业中的应用尚处于起步阶段,这对得出结论性影响提出了挑战。本研究强调有必要开展进一步的实证研究,以验证所讨论的理论框架,并探索元数据技术在旅游业中的长期影响。

**实际意义:** Metaverse为旅游企业提高客户参与度和运营效率开辟了道路。它为身临其境的个性化旅游体验提供了一个新颖的平台,从而有可能提高市场覆盖率和客户满意度。Metaverse推动的简化流程还可降低旅游企业的成本,提高其盈利能力。

**社会影响:** Metaverse技术的整合可以使旅游体验平民化,让经济或身体条件有限的人也能以虚拟方式探索全球旅游目的地。然而,它也引发了人们对数字鸿沟的担忧,以及对传统旅游业所特有的真实人际互动和文化交流的潜在损失的担忧。

**原创性/价值:** 本研究是定量和定性分析新兴的Metaverse旅游领域的开创性研究之一。通过将文献计量学分析与系统的文献综述相结合,本研究揭示了元数据技术在超越传统旅游范式方面的潜力,并对其中的实用、管理和以消费者为中心的含义提出了全面的理解。

**关键词** 虚拟旅游、游客体验、数字化转型、消费者行为、参与、营销策略、用户体验

**文章类型** 研究型论文

## **Metaverso como impulsor de la transformación del turismo hacia estrategias de gestión virtual**

### **Resumen**

**Diseño/metodología/enfoque:** Esta investigación utiliza un enfoque metodológico doble, que incorpora técnicas de análisis bibliométrico y una revisión sistemática de la literatura. El análisis bibliométrico proporciona una evaluación cuantitativa de la literatura existente, identificando tendencias, autores y publicaciones clave en el ámbito del turismo en el Metaverso. Al mismo tiempo, la revisión sistemática de la literatura evalúa cualitativamente el contenido y el contexto de estos trabajos, centrándose en las aplicaciones de la Realidad Virtual (RV) y la Realidad Aumentada (RA) en el turismo, así como en sus implicaciones para la gestión y el consumidor.

**Objetivo:** El objetivo principal de este estudio es determinar cómo las tecnologías asociadas al Metaverso, principalmente la RV y la RA, redefinen las experiencias turísticas. Pretende profundizar en las capacidades de estas tecnologías para eliminar las barreras físicas y económicas convencionales y permitir la exploración virtual de los destinos. Además, este estudio pretende entender cómo las empresas turísticas pueden aprovechar las tecnologías relacionadas con el Metaverso para mejorar la eficiencia operativa y la satisfacción del cliente.

**Conclusiones:** Los resultados revelan un aumento significativo en la producción de literatura en el ámbito del turismo en el Metaverso desde el año 2018, lo que indica un creciente interés en este campo. El Metaverso facilita una combinación única de experiencias turísticas atractivas y personalizadas desde la comodidad del hogar. Además, las empresas turísticas se benefician de la agilización de los procesos de reserva y la mejora de la eficiencia operativa, lo que a su vez aumenta la satisfacción del cliente.

**Limitaciones e implicaciones de la investigación:** La investigación se limita al análisis de la bibliografía existente y no incluye la recopilación de datos primarios, lo que podría limitar la exhaustividad de las conclusiones. Además, el estado incipiente de la tecnología relacionada con el Metaverso en el turismo supone un reto a la hora de extraer implicaciones concluyentes. Este estudio subraya la necesidad de realizar más estudios empíricos para validar los marcos teóricos discutidos y explorar las implicaciones a largo plazo de estas tecnologías en el sector turístico.

**Implicaciones prácticas:** El Metaverso abre vías para que las empresas turísticas mejoren su compromiso con el cliente y su eficiencia operativa. Ofrece una plataforma novedosa para experiencias de viaje inmersivas y personalizadas, con lo que aumenta potencialmente el alcance del mercado y la satisfacción del cliente. La racionalización de los procesos facilitados por el Metaverso también podría conducir a la reducción de costes y al aumento de la rentabilidad de las empresas turísticas.

**Implicaciones sociales:** *La integración de las tecnologías relacionadas con el Metaverso podría democratizar las experiencias de viaje, permitiendo a personas con limitaciones económicas o físicas explorar virtualmente destinos globales. Sin embargo, también suscita preocupación en relación con la brecha digital y la posible pérdida de interacciones humanas auténticas e intercambios culturales que tradicionalmente caracterizan al turismo.*

**Originalidad/valor:** *Este estudio es uno de los pioneros en analizar cuantitativa y cualitativamente el creciente campo del turismo en el Metaverso. Amalgamando el análisis bibliométrico con una revisión sistemática de la literatura, desvela el potencial de las tecnologías relacionadas con el Metaverso para sacar a la luz los paradigmas turísticos convencionales, presentando una comprensión exhaustiva de sus implicaciones prácticas, de gestión y centradas en el consumidor.*

**Palabras clave** *Turismo virtual, experiencia del viajero, transformación digital, comportamiento del consumidor, compromiso, estrategias de marketing, experiencia del usuario*

**Tipo de papel** *Trabajo de investigación*

## 1. Introduction

Digital transformation in the tourism industry has given way to the growth of concepts related to Metaverse, a three dimensions virtual space (Buhalis *et al.*, 2023a), because of its potential application in the tourism industry. Metaverse, as a concept, refers to an immersive digital environment in which users can interact with each other through different advanced technologies, such as virtual reality (VR) and augmented reality (AR). In tourism practice, this provides an opportunity for people to visit virtual destinations and enjoy experiences anywhere. An example is the possibility of taking a virtual tour of a museum through Metaverse, which can provide a unique and immersive experience. Another example is reality goggles can help transport users on a virtual tour of a historic city or offer a new way to experience tourist destinations.

Previous studies have shown opportunities for the Metaverse in the tourism industry. According to Barrera and Shah (2023), the most promising trends related to Metaverse in the field of marketing are immersion, social interaction and user experience, giving Metaverse a transformative potential for experiential tourism from the end consumer's point of view. This raises numerous research questions in areas such as data intelligence, innovation, communication, user experience, consumer behaviour and policy formulation related to ownership and privacy. In the realm of hospitality, Metaverse empowers consumers to personalise virtual experiences, offering a promising yet untapped opportunity. To capitalise on this potential, collaboration between tourism and technology companies is essential (Dwivedi *et al.*, 2022, 2023). From a marketing and consumer behaviour perspective, Metaverse offers opportunities for innovative strategies and highly personalised experiences in tourism (Buhalis *et al.*, 2023a). Moreover, according to Correia Loureiro *et al.* (2020), three themes can be identified that will determine the future from a Metaverse research point of view: the use of mobile devices for sustainable tourism, the application of the technology acceptance model (TAM) in AR/VR research and the exploration of the potential to create immersive, inclusive and accessible tourism experiences, especially for individuals with disabilities and for the preservation of heritage sites (Wang *et al.*, 2023). Other studies have analysed the purchase intention (Liu and Sun, 2023) of these virtual experiences.

Despite the growing academic literature in recent years, there are still gaps in the understanding of the implications of these technologies from a management perspective. From a management and user experience perspective, Metaverse has the potential to transform the tourism industry. On the management side, the integration of technologies, including Metaverse, is crucial for optimising operational efficiency and customer satisfaction (Buhalis *et al.*, 2023b). However, at the same time, it is key to address challenges such as data security and the ethical behaviour of the industry (Jo, 2023). From a user experience perspective (Jafar and Ahmad, 2023), research is required to support the design of personalised immersive experiences to ensure user acceptance (Jafar *et al.*, 2023).

Therefore, the theoretical support of this research in areas such as technology adoption and strategic management will provide relevant frameworks for understanding technology and maximising benefits for the tourism sector.

To fill this gap and improve the literature review analysed in this study, a systematic review is used to further explore the issues addressed. To this end, the following research questions were posed.

- RQ1.* What is the intellectual structure of the literature on Metaverse in the tourism sector and its implications for management and the end consumer?
- RQ2.* What theoretical frameworks have been used and which are proposed to study the Metaverse in the tourism sector and its implications for management and the end consumer?
- RQ3.* What are the future avenues of research in relation to the Metaverse in the tourism sector and its implications for management and the end consumer?

This study investigates the Metaverse concept, focusing on the implications for business management in terms of consumer behaviour and decision-making. These research findings can benefit stakeholders in the tourism sector and provide relevant information for inclusive tourism. Bibliometric techniques were used to conduct the analysis, with the results presented and conclusions, limitations, future research directions and recommendations from a business management perspective derived through a systematic review.

## 2. Evolution and context of Metaverse in tourism

Traditionally, technological advances have been key to the evolution of the tourism industry, generating new business models and modernising the distribution of tourism services (Standing *et al.*, 2014). These innovations are fundamental to addressing the growing concern for sustainability in tourism (Go and Kang, 2023) and their implications for tourism demand and environmental impact (Puertas Medina *et al.*, 2022). In this respect, the concepts of VR and Metaverse promise to revolutionise the tourism industry by offering realistic immersive experiences without the need for physical presence (Ball, 2022). These technologies offer the opportunity to access tourist destinations and attractions through immersive experiences, without the need for the aforementioned physical. Virtual tourism has become a global trend in recent years, as is evident throughout this paper, based on redefining the way people experience tourist destinations, allowing users to explore places and attractions, bringing benefits ranging from experiencing destinations from home without the aforementioned physical and economic limitations (Hollensen *et al.*, 2022). New technical advances have enabled close-to-reality immersion through the development of digital environments. The advent of VR, AR and mixed reality technologies has transformed the customer experience by offering new hybrid experiences that integrate physical (Yang *et al.*, 2023) and virtual objects.

The promise of Metaverse in the tourism industry is to revolutionise the way end-users jump physical and economic limitations by offering travellers the possibility of exploring destinations in exciting ways (Accenture, 2022). Major industry leaders expect a positive impact on revenue generation opportunities and improvements in the customer experience. The interaction between consumers and brands in Metaverse raises interesting discussions and debates in the marketing field, addressing the challenges and areas of transformation in the tourism sector. In addition, Metaverse has emerged as a fertile ground for marketing and understanding consumer behaviour in tourism (Zhang *et al.*, 2023).

Companies harness their immersive potential to influence travellers' decisions and deliver personalised offers, which in turn increases customer satisfaction and brand loyalty in this new digital reality. For example, the hotel company Leven ventured into Metaverse through its Levenverse, an immersive virtual hotel environment located in Decentraland's Fashion

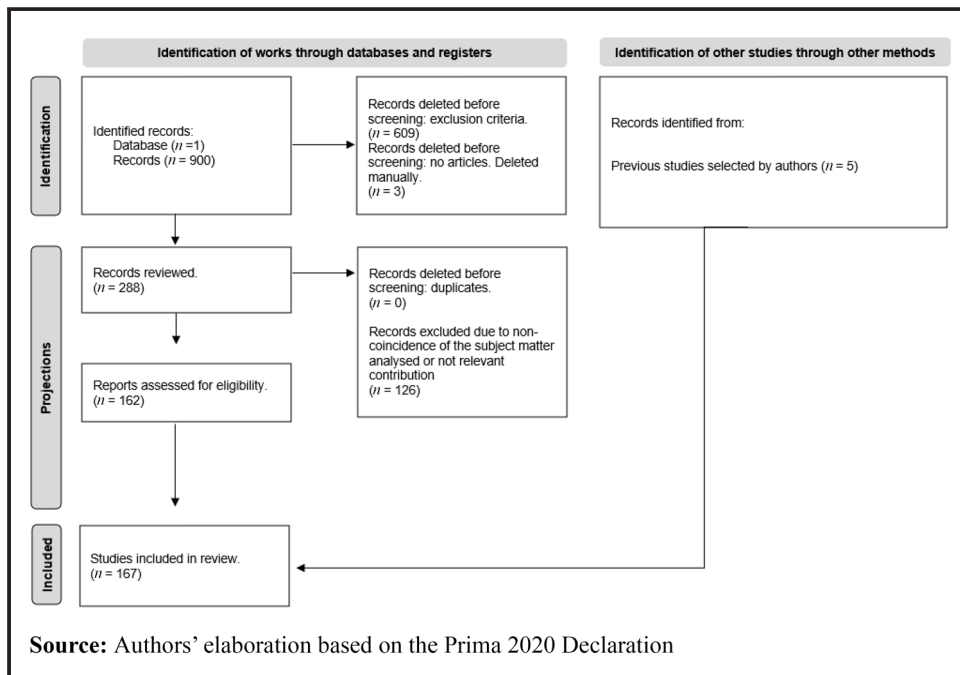
District (Leven, 2023). This innovative extension of Leven's physical spaces offers a visually stunning and creatively designed environment in which traditional hotel areas such as lobbies, rooms and lifts have been reinvented. It represents a facet of the hospitality industry influenced by Metaverse and VR, where travellers can fully immerse themselves in digital experiences (Casais and Ferreira, 2023). These experiences range from visiting remote destinations to exploring historical and cultural sites using VR technology (Tsai, 2022a).

### 3. Methodology

The Web of Science (WoS) database was chosen as the primary resource for this systematic analysis during the initial phase. This indexing source is the most extensive collection of scholarly publications worldwide (Zhu and Liu, 2020). Peer-reviewed articles, mainly written in English, were analysed, as they are considered the most legitimate academic source (Elvik, 1998), published up to 18 September 2023. A Boolean approach was used, where the keywords chosen were “Metaverse tourism” and “virtual reality tourism”. The use of the fields' titles, abstracts and keywords is justified by the specificity of the subject matter analysed, as it is necessary to be specific to the breadth of the keywords used. Using the Prisma Statement methodology (Page et al., 2021) and following the guidelines of prominent authors in the field of bibliometric analysis and literature review (Kraus et al., 2022), data were extracted from WoS sources until the aforementioned date. Only published and early access articles published in English and in research areas related to Hospitality Leisure Sport Tourism, Management and Business were considered. The data set obtained from WoS contains 162 documents after carrying out the above-mentioned exclusions. The Biblioshiny software tool was used for analysis (Aria and Cuccurullo, 2017).

The researchers selected five pertinent documents that were not previously examined and deemed relevant to the objectives of the study. These were websites and blog entries. The process used in this study, as depicted in Figure 1, has been substantiated by multiple scientific investigations. An initial assessment of the bibliographic information was carried

**Figure 1** Exclusion criteria and protocols used in the analysis



out on the first set of 162 documents, suitable for description and visualisation through bibliometric techniques. Verification of the research questions is illustrated using the 167 documents detailed in the Supplementary Material (Table S1). This culminated in the discussion and conclusions of the documents in the final phase.

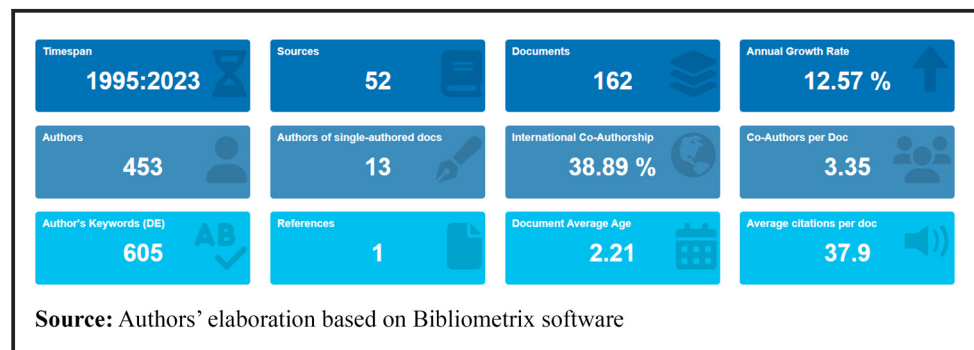
## 4. Results of the descriptive analysis

### 4.1 Overview and production trends

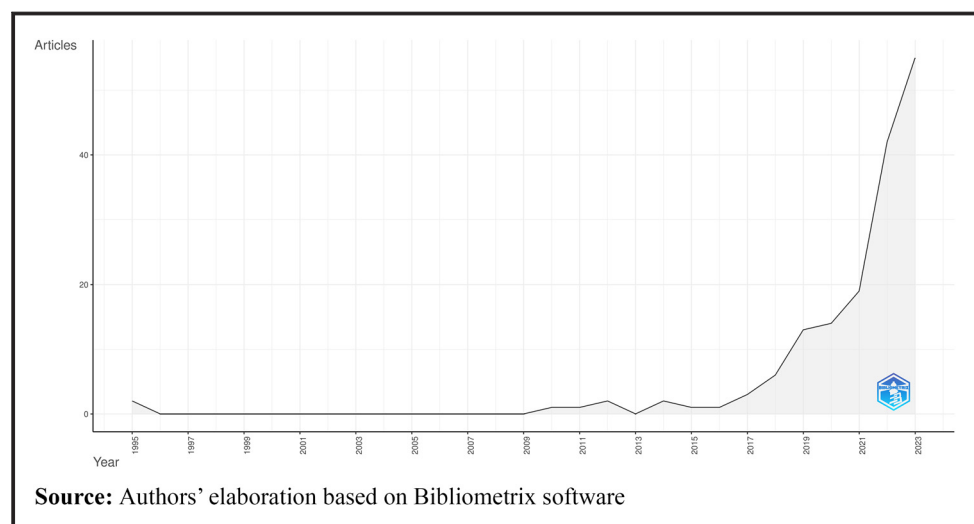
After analysing data from 1995 to 2023 across 52 sources, including 162 documents, the average annual growth rate was found to be 12.57% (Figure 2). This indicates a constantly evolving research field. On average, each paper received 37.9 citations, demonstrating its influence and relevance. There were 453 authors involved in the analysis, with 13 single-author papers and significant international collaboration of 38.89%.

As shown in Figure 3, the field of research has experienced a significant change in the annual production of articles over time. Only two articles were published from 1995 to 2000. However, since 2010, production has steadily increased with notable growth in recent years, particularly in 2018. The year 2022 marked a turning point with 42 articles published,

**Figure 2** Data characteristics



**Figure 3** Annual scientific production



and by 2023, the output peaked at 55 articles, indicating growing interest and increased research activity in this field.

#### 4.2 Trend of the annual citations

As depicted in Table 1 and in line with the above, from 2018 onwards, there has been remarkable growth in article production, with a steady increase in the number of publications per year. This period is also characterised by a significant increase in the average number of citations per article per year, indicating an increase in the influence and impact of research in the field.

#### 4.3 Most influential documents

According to Table 2, the three most cited papers in this data set have a significant influence on the research field. First, the paper by “Guttentag DA” published in 2010 in *Tourism Management* with a total of 588 citations and a robust annual citation rate of 42, stands out as the most cited, demonstrating its continued relevance over time.

**Table 1** Annual citations evolution

Year	N <sup>a</sup>	MeanTCperArt <sup>b</sup>	MeanTCperYear <sup>c</sup>	Citable years
2018	6	115.67	23.13	5
2019	13	111.23	27.81	4
2020	14	65.79	21.93	3
2021	19	31.47	15.74	2
2022	42	18.52	18.52	1
2023	55	5.64	–	0

Notes: <sup>a</sup>N, number of documents; <sup>b</sup>MeanTCperArt, mean total citations per document; <sup>c</sup>MeanTCperYear, total citations per year

Source: Authors' own elaboration

**Table 2** Most cited documents

Author	Year	Title	Total citations	Total citations per Year	Context
Guttentag DA	2010	Virtual Reality: Applications and implications for tourism	588	42.00	VR applications in tourism
Tussyadiah IP	2018	Virtual Reality, presence, and attitude change: Empirical evidence from tourism	389	64.83	Impact of VR on attitudes in tourism
Kim MJ	2020	Exploring Consumer Behavior in Virtual Reality Tourism Using an Extended Stimulus-Organism-Response Model	371	92.75	Consumer behaviour in VR tourism
Flavian C	2019	The impact of virtual, Augmented and mixed reality technologies on the customer experience	360	72.00	Impact of VR/AR technologies on clients
Buhalis D	2019	Technological disruptions in services: lessons from tourism and hospitality	242	48.40	Technological disruptions in tourism and hospitality
Correia Loureiro SM	2020	20 years of research on Virtual Reality and Augmented Reality in tourism context: A text-mining approach	195	48.75	Evolution of VR and AR in tourism
Bogicevic V	2019	Virtual Reality presence as a preamble of tourism experience: The role of mental imagery	171	34.20	VR as a preliminary tourist experience
Hudson S	2019	With or without you? Interaction and immersion in a Virtual Reality experience	152	30.40	Social interaction in VR experience

Source: Authors' own elaboration

Supplementary Table S2 provides further information on the journals of publication, context, key concepts, applied methodology and theoretical foundations.

#### 4.4 Most influential countries

According to [Table 3](#), the most influential countries in this field of research, based on the number of articles and the average number of citations per article, the most influential countries in this field of research are notable for their contribution to the advancement of knowledge. The USA leads the list with 18 articles and 1,115 citations, with an average of 61.94 citations per article. It is followed by the UK, with 14 articles and 893 citations, with an impressive average of 63.79 citations per article.

#### 4.5 Thematic map analysis

As shown in [Figure 4](#), thematic analysis of the documents revealed the presence of several emerging themes and areas of interest in the field of VR and technology applied to tourism. Among emerging themes, “gamification in online environments” ([Ahmed and Sutton, 2017](#)) stands out, suggesting a focus on creating theoretical and practical frameworks for gamification in virtual contexts. This theme reflects the importance of developing pedagogical strategies and typologies for online educational content, indicating a concern for virtual education and training in the digital age. This area has also been studied from a tourism perspective ([Wei et al., 2023](#)), analysing how the virtual tourism experience can be enhanced by gamification to introduce fatigue-reduction factors. Another relevant emerging theme is “user acceptance”, which encompasses a wide variety of terms related to technology adoption ([Talwar et al., 2022](#)), user motivation ([Buhalis et al., 2023a, 2023b](#)) and quality of technological solutions ([Martins et al., 2017](#)). This suggests a significant interest in understanding how users interact with information technology and how technological experiences can be improved to ensure their acceptance and success, as reflected in other tourism studies.

#### 4.6 Thematic map evolution

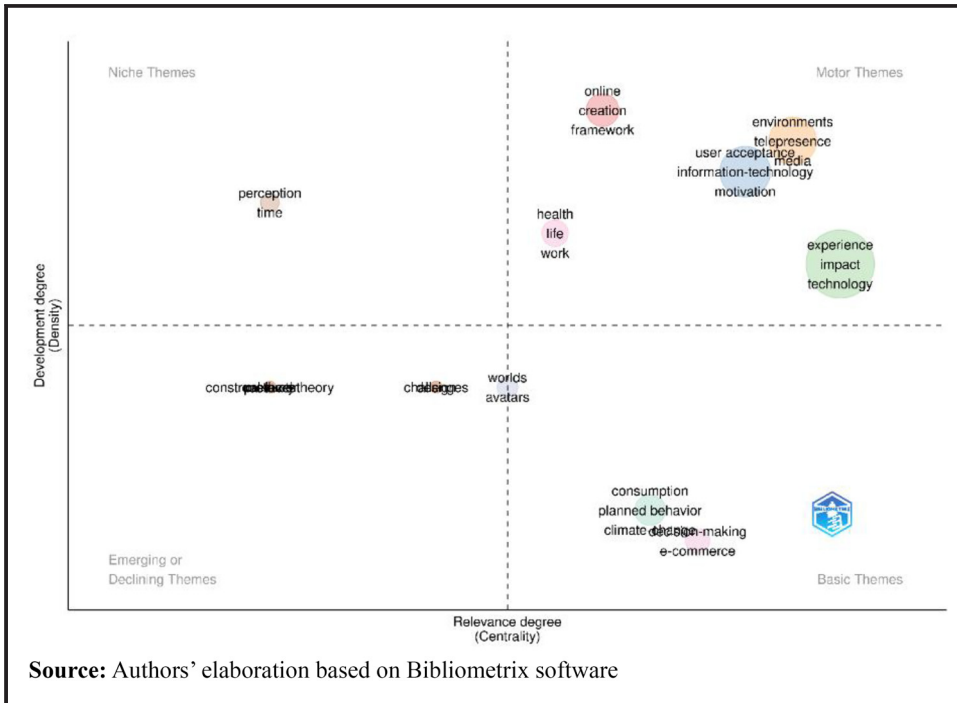
With regard to the evolution of the subject matter ([Figure 5](#)), the documents analysed show a significant change in the research focus over time. Prior to 2023, the main areas of interest included concepts such as intention behaviour, consumption, user acceptance and experience. However, in 2023, there will be a shift towards more specific topics related to decision-making, technology, co-creation and the quality of user experience. The concept of “intention behaviour” has been transformed into “decision making” ([Escandon-Barbosa and Salas-Paramo, 2022](#); [Maaiah et al., 2019](#); [Skard et al., 2021](#); [Tan et al., 2023](#)), suggesting a shift towards

**Table 3** Nationalities of the analysed authors

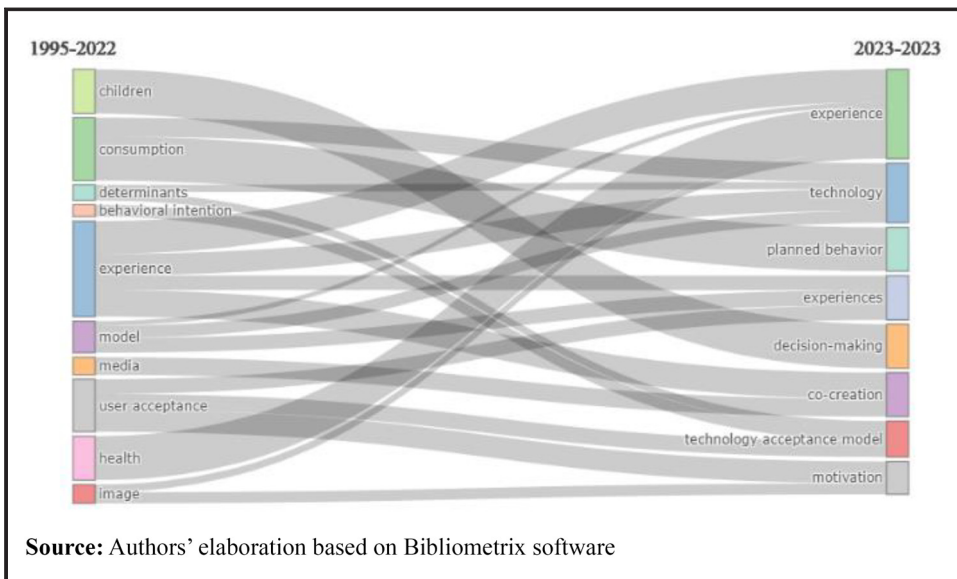
Country	Articles	Average article citations
USA	18	61.94
UK	14	63.79
Korea	9	82.00
Canada	4	155.50
Spain	9	69.00
China	37	13.86
Australia	9	45.22
Italy	8	41.50
France	2	80.50
Norway	5	29.80

Source: Authors' own elaboration

**Figure 4** Thematic maps analysis



**Figure 5** Thematic maps evolution



understanding how users' decisions are influenced by technology and information; in line with technology acceptance theory (Davis, 1989). Moreover, the "consumption" perspective has been extended to address "behavioural planning" (Elkhwesky *et al.*, 2023; Hamid *et al.*, 2023; Huang, 2023; Iftikhar *et al.*, 2022; Lu *et al.*, 2022), implying a concern with understanding how individuals plan and make consumption-related decisions. User acceptance remains a relevant topic, as discussed in the evolution of this subject.

#### 4.7 Bibliographical coupling

Different clusters were identified, revealing a wide variety of relevant topics based on the keywords that make them up and in accordance with the previous section. The results are presented in Table 4. The themes of each cluster are detailed below.

Figure 6 highlights the importance of understanding the dynamics driving changes in tourism today, where technology plays a fundamental role in shaping travellers' experiences and the way they interact with tourism destinations. Technology adoption, co-creation of experiences, quality of user experience and heritage preservation are relevant areas for researchers and tourism managers to consider in an increasingly digitised world. These clusters open the door to new opportunities and challenges in the quest to offer remarkable and culturally enriched tourism experiences in the modern era.

#### 4.8 Theoretical framework's contributions

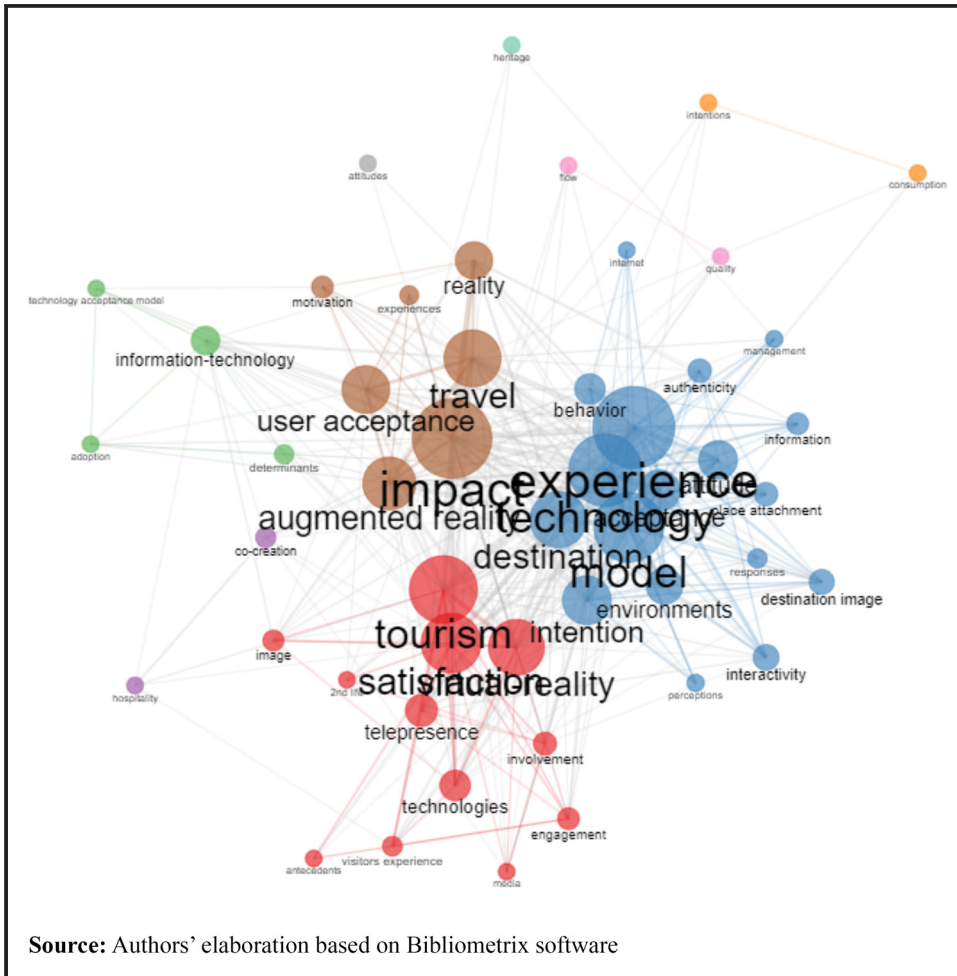
This section discusses different theoretical frameworks, represented as novel or modifications of the existing frameworks. The article "Investigating Metaverse Marketing for Travel and Tourism" (Tsai, 2022b) discusses concepts related to enactive cognition and positive psychology that attempt to shed light on the implications of the Metaverse from the point of view of the user's prior experience with such technology and with respect to decision-making by companies that manage travel and tourism services. Another article, "Metaverse in Tourism" (Chen et al., 2023), presents and analyses a modified conceptual model that draws on destination competitiveness and stakeholder theory to analyse the key drivers and barriers faced by the tourism industry in implementing Metaverse-based solutions. Another example is the article "Rethinking Metaverse tourism" (Yang and Wang, 2023) which analyses a classification called "4Is" to classify Metaverse experiences from a tourism perspective, proposing an interdisciplinary research plan. The paper "The Metaverse in the hospitality and tourism industry" (Gursoy et al., 2022) addresses the development of experiences in the context of the hospitality industry. These theoretical frameworks reflect the complexity and scope of research on Metaverse in the tourism industry, highlighting the importance of considering multiple perspectives and approaches

**Table 4** Theoretical frameworks provided

Cluster	Thematic	Key terms
1	Virtual tourism and user experience in virtual environments	User experience in virtual environments Impact on user satisfaction Engagement Involvement
2	User experience in tourist destinations and technology	Quality of user experience in tourism contexts Technology adoption in tourism destinations User attitudes towards technology in tourism
3	Information technology adoption	Adoption of information technology Factors influencing adoption
4	Co-creation and accommodation in the tourism industry	Co-creation of tourism experiences Collaboration between providers and users
5	Consumption and behaviour	Consumption decisions Purchase intention behaviours
6	Impact, travel and AR on user acceptance	Impact of (previous) trips on user acceptance AR experiences during travel User motivation to engage in AR experiences
7	Quality and flow of experience	Quality of experience Optimal flow state
8	Attitudes	Perception of technology in specific contexts
9	Heritage	Preservation of cultural heritage Appreciation of culture and history

Source: Authors' own elaboration

**Figure 6** Cluster analysis by keywords



that could be used in the future to understand the complexity of the analysed field of study and its impact on the tourism industry. Finally, the study “Exploring Consumer Behaviour in virtual reality Tourism Using an Extended Stimulus-Organism-Response Model” aims to provide insights into the impact of VR on the tourism industry. By extending the traditional stimulus–organism–response model (Morrison *et al.*, 2023), this study examines consumer behaviour within VR tourism contexts.

## 5. Future research findings and limitations

### 5.1 Intellectual structure

The findings derived from the thematic analysis confirm that there is increasing interest from a scientific research point of view, as shown in Figure 4. One of the major themes is “gamification in online environments” (Wei *et al.*, 2023), underlining the importance of formulating pedagogical strategies for online educational content and reflecting on the latter for virtual education and training in the digital age (Ji *et al.*, 2023). Another relevant issue is the concept of “user acceptance”. It encompasses various terms related to technology adoption, user motivation and quality of technological solutions (Baker *et al.*, 2023).

It reflects the interest in understanding how users interact with technology and the need to optimise and personalise experiences to ensure user acceptance. The theme of “user experience” (Jo, 2023; Wei *et al.*, 2019) stands out as one of the most relevant, including a wide range of topics related to perception and satisfaction (An *et al.*, 2021), and the influence of VR on user experience in the tourism sector. There is great interest in the literature reviewed in understanding how technology associated with the Metaverse, such as VR and AR, affects tourist perception and satisfaction. Furthermore, it also affects loyalty to tourism destinations (Geng *et al.*, 2023). There is a need to understand how people plan their trips and make tourism-consumption decisions. In this sense, Metaverse, in its function of promoting tourist destinations, can be key to influencing users’ decision-making.

### ***5.2 Contribution to theoretical frameworks***

Different theoretical frameworks are being applied in Metaverse research applied to the travel and tourism industry. An example of this is the paper “Investigating Metaverse Marketing for Travel and Tourism” (Tsai, 2022b), where concepts of active cognition and positive psychology are applied to explore the implications of the Metaverse on user experience decision-making before and during the trip. Another paper, “Metaverse in Tourism: drivers and hindrances from stakeholders’ perspective” (Chen *et al.*, 2023), works on a modified conceptual construct of tourism destination competitiveness, combined with stakeholder theory to analyse the drivers of technology in tourism and hindrances from multiple perspectives. At the other extreme, the paper “Rethinking Metaverse Tourism” (Yang and Wang, 2023) introduces a classification called “4Is” to categorise experiences in the Metaverse and their application in the tourism sector. Finally, “The Metaverse in the Hospitality and Tourism Industry” (Gursoy *et al.*, 2022) highlights the importance of creating Metaverse-based tourism experiences. These theoretical approaches reflect the complexity and scope of current research in the research area analysed, highlighting the importance and necessity of considering diverse perspectives and theoretical approaches to comprehensively understand the impact of Metaverse and its potential on the tourism industry.

### ***5.3 Conclusions***

It reveals a marked increase in article production since 2010, highlighting the growing academic and business interest in technology implied by the metaverse concept. Different theoretical frameworks have been identified and analysed as fundamental to understanding the role of Metaverse within the tourism sector. These frameworks have facilitated a deeper understanding of the implications of the Metaverse for business management and its impact on end-consumer behaviour. They highlight its potential to enhance travel experiences and offer companies new ways of engaging with customers in a more competitive and immersive environment, enabling the co-creation of experiences and the optimisation of business segmentation strategy. It is possible to enrich tourism experiences and offer innovative interaction channels between companies and users, leading to better positioning strategies and new business niches in the sector.

The identified trends and theoretical perspectives outline the current landscape and point to future research directions in the analysed field, emphasising the need to explore the full potential of Metaverse in the field of tourism. Particularly relevant is the role of these technologies in sustainability and the integration of cultural narratives in different platforms, formats and digital platforms. In addition, there is a debate on the adoption of this technology and the security of data in Metaverse. This study lays the foundations for future academic research and practical business applications, with the aim of maximising the benefits offered by Metaverse for tourism users and companies involved in the tourism value chain, considering the possibilities of combining these technologies with others, such as blockchain or artificial intelligence (AI).

#### **5.4 Future research and limitations**

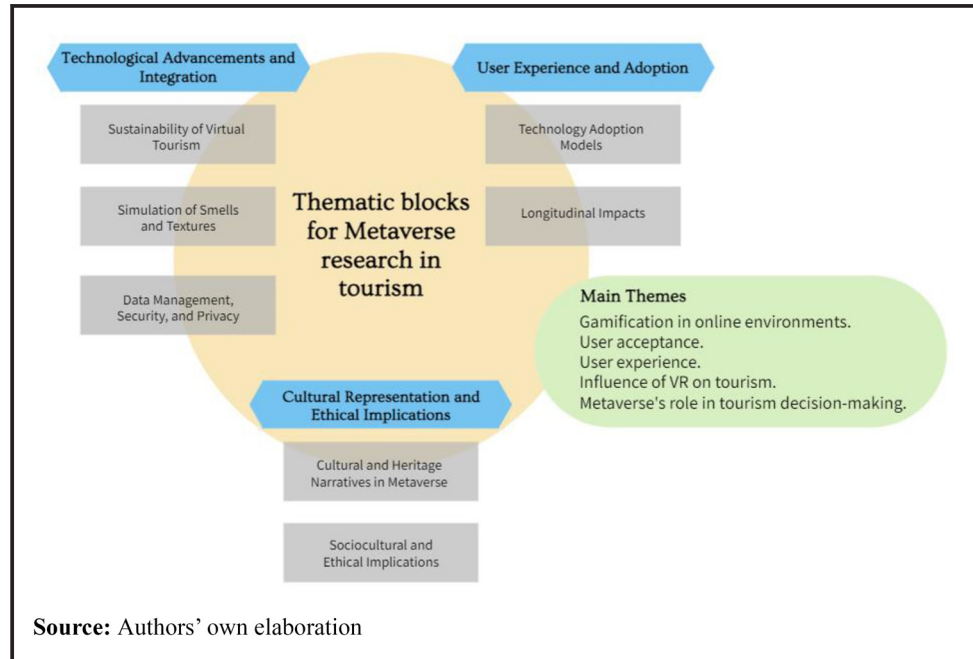
Additional research areas include the sustainability of virtual tourism, such as reducing the carbon footprint and conserving cultural heritage in the tourism industry. Investigating how cultural narratives can be integrated in Metaverse and how they affect user perception and experience is also of interest. Incorporating multisensory experiences such as simulated smells and textures for greater immersion and authenticity in virtual tourism also holds promise. From a security and privacy perspective, data management within Metaverse is crucial. In this sense, the future integration of other technologies, such as blockchain and AI, can guarantee a secure, private and total user experience. Technology adoption is a determining factor for the success of these initiatives, and models such as the TAM and the unified technology acceptance and usage model (UTAUT) can provide valuable results in future research. Briefly, the TAM can help to identify the propensity profiles and willingness to pay, exploring variables such as perceived usefulness and ease of use that may influence the adoption of Metaverse technologies. On the other hand, UTAUT, which has a more complex structure and considers additional variables such as performance expectancy, effort expectancy, social influence and enabling conditions, provides a broader framework for understanding how and why users and communities adopt, or resist adopting, the Metaverse, and its associated technologies. Understanding these dynamics through the application of models such as TAM and UTAUT can enable more effective implementation of security and privacy measures associated with the systems that comprise the Metaverse, as well as a well-structured technology adoption strategy that can mitigate barriers that users might encounter when interacting in the Metaverse. These models can help stakeholders and business decisions to design more inclusive and accessible experiences, aligning Metaverse technologies with the expectations and needs of users in the context of the tourism sector. In this sense, it would be beneficial to consider future longitudinal research incorporating primary data as important for understanding the long-term effects of Metaverse on the tourism sector. When evaluating the effectiveness of Metaverse-based solutions for the tourism sector in the companies involved, studies incorporating the analytical hierarchical process methodology could be considered, as it could help decision-making structures in the business value chain.

This work is based on a comprehensive analysis of the subject matter analysed, based on technological and user experience aspects, containing a limited exploration from the point of view of the sociocultural and ethical implications of Metaverse in the tourism sector (Figure 7). From a future improvement point of view, it would be useful to consider future longitudinal research to understand the long-term implications of the use of Metaverse in the tourism industry and how user perceptions and experiences evolve over time with the continued use of such immersive technology. Finally, the exclusive use of the WoS database may mean that some relevant documents were left behind. Extending this study to other databases in the future may increase our knowledge of the phenomenon analysed. Finally, future research could explore a broader set of keywords to expand the scope of the analysed topic.

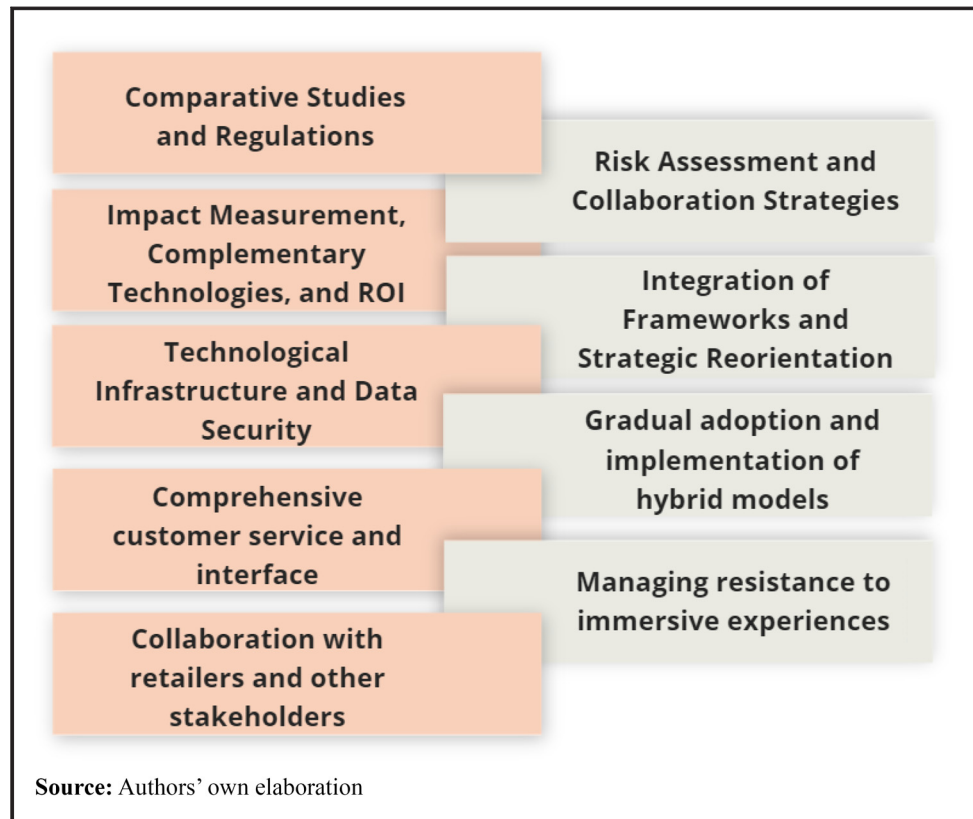
#### **6. Theoretical implications**

The implications for the management of Metaverse integration in the tourism sector are manifold, ranging from comparative studies of different platforms for optimal user engagement to addressing ethical challenges related to privacy and data security and exploring collaboration strategies within virtual environments. This involves the integration of technologies such as blockchain and AI and the need to create new metrics for evaluating the impact of investments and incorporating theoretical frameworks into marketing strategies to understand the drivers and barriers to the growth of technology in the tourism sector. The development of a robust technology infrastructure and the prioritisation of data security, which entails public-private collaboration, is essential. Gradual adoption of

**Figure 7** Mapping the intellectual landscape



**Figure 8** Implications for management: main action points



Metaverse in the tourism industry is recommended, suggesting a mix of physical and virtual experiences through hybrid models. Strategies for managing user resistance to immersive experiences and fostering user acceptance are fundamental and future research is proposed in this regard.

## 7. Implications for management

Further research is required, as shown in [Figure 8](#). These include the exploration of how different Metaverse platforms influence user engagement and user experience, which requires comparative studies for a better theoretical understanding. Ethical and security concerns within Metaverse, especially with regard to privacy, trust, and security, also point to the need for theoretical exploration in these areas. Underlying this is an interest in understanding the factors that influence the adoption of technology in the tourism sector and how the proposed theoretical frameworks can be included and developed in tourism product marketing strategies to understand consumer behaviour and strategic decision-making, highlighting the impact of these theoretical frameworks on the development and implementation of effective marketing strategies in the dynamic tourism industry.

## References

- Accenture (2022), "Why the metaverse (really) matters for travel", Why the Metaverse (Really) Matters for Travel, 15 September, available at: [www.accenture.com/us-en/blogs/compass-travel-blog/metaverse-travel](http://www.accenture.com/us-en/blogs/compass-travel-blog/metaverse-travel) (accessed 22 September 2023).
- Ahmed, A. and Sutton, M. (2017), "Gamification, serious games, simulations, and immersive learning environments in knowledge management initiatives", *World Journal of Science, Technology and Sustainable Development*, Vol. 14 Nos 2/3, pp. 78-83, doi: [10.1108/WJSTSD-02-2017-0005](https://doi.org/10.1108/WJSTSD-02-2017-0005).
- An, S., Choi, Y. and Lee, C.-K. (2021), "Virtual travel experience and destination marketing: effects of sense and information quality on flow and visit intention", *Journal of Destination Marketing & Management*, Vol. 19, doi: [10.1016/j.jdmm.2020.100492](https://doi.org/10.1016/j.jdmm.2020.100492).
- Aria, M. and Cuccurullo, C. (2017), "Bibliometrix: an R-tool for comprehensive science mapping analysis", *Journal of Informetrics*, Vol. 11 No. 4, pp. 959-975, doi: [10.1016/j.joi.2017.08.007](https://doi.org/10.1016/j.joi.2017.08.007).
- Baker, J., Nam, K. and Dutt, C.S. (2023), "A user experience perspective on heritage tourism in the metaverse: empirical evidence and design dilemmas for VR", *Information Technology & Tourism*, Vol. 25 No. 3, doi: [10.1007/s40558-023-00256-x](https://doi.org/10.1007/s40558-023-00256-x).
- Ball, M. (2022), *The Metaverse: And How It Will Revolutionize Everything*, Liveright, New York, NY.
- Barrera, K.G. and Shah, D. (2023), "Marketing in the metaverse: conceptual understanding, framework, and research agenda", *Journal of Business Research, Elsevier*, Vol. 155, p. 113420.
- Buhalis, D., Leung, D. and Lin, M. (2023a), "Metaverse as a disruptive technology revolutionising tourism management and marketing", *Tourism Management*, Vol. 97, doi: [10.1016/j.tourman.2023.104724](https://doi.org/10.1016/j.tourman.2023.104724).
- Buhalis, D., Lin, M.S. and Leung, D. (2023b), "Metaverse as a driver for customer experience and value co-creation: implications for hospitality and tourism management and marketing", *International Journal of Contemporary Hospitality Management*, Vol. 35 No. 2, pp. 701-716, doi: [10.1108/IJCHM-05-2022-0631](https://doi.org/10.1108/IJCHM-05-2022-0631).
- Casais, B. and Ferreira, L. (2023), "Smart and sustainable hotels: tourism agenda 2030 perspective article", *Tourism Review*, Vol. 78 No. 2, pp. 344-351, doi: [10.1108/TR-12-2022-0619](https://doi.org/10.1108/TR-12-2022-0619).
- Chen, S., Chan, I.C.C., Xu, S., Law, R. and Zhang, M. (2023), "Metaverse in tourism: drivers and hindrances from stakeholders' perspective", *Journal of Travel & Tourism Marketing, Routledge*, Vol. 40 No. 2, pp. 169-184, doi: [10.1080/10548408.2023.2227872](https://doi.org/10.1080/10548408.2023.2227872).
- Correia Loureiro, S.M., Guerreiro, J. and Ali, F. (2020), "20 Years of research on virtual reality and augmented reality in tourism context: a text-mining approach", *Tourism Management*, Vol. 77, doi: [10.1016/j.tourman.2019.104028](https://doi.org/10.1016/j.tourman.2019.104028).
- Davis, F.D. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology", *MIS Quarterly: Management Information Systems, Management Information Systems Research Center*, Vol. 13 No. 3, pp. 319-339, doi: [10.2307/249008](https://doi.org/10.2307/249008).

- Dwivedi, Y.K., Hughes, L., Baabdullah, A.M., Ribeiro-Navarrete, S., Giannakis, M., Al-Debei, M.M., Dennehy, D., Metri, B., Buhalis, D., Cheung, C.M. and Conboy, K. (2022), "Metaverse beyond the hype: multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy", *International Journal of Information Management*, Vol. 66, p. 102542, doi: [10.1016/j.ijinfomgt.2022.102542](https://doi.org/10.1016/j.ijinfomgt.2022.102542).
- Dwivedi, Y.K., Hughes, L., Wang, Y., Alalwan, A.A., Ahn, S.J., Balakrishnan, J., Barta, S., Belk, R., Buhalis, D., Dutot, V. and Felix, R. (2023), "Metaverse marketing: how the metaverse will shape the future of consumer research and practice", *Psychology & Marketing*, Vol. 40 No. 4, pp. 750-776, doi: [10.1002/mar.21767](https://doi.org/10.1002/mar.21767).
- Elkhwesky, Z., Abuelhassan, A.E., Elkhwesky, E.F.Y. and Khreis, S.H.A. (2023), "Antecedents and consequences of behavioural intention to use virtual reality in tourism: evidence from Gen-Y and Gen-Z consumers in Egypt", *Tourism and Hospitality Research*, doi: [10.1177/14673584231170576](https://doi.org/10.1177/14673584231170576).
- Elvik, R. (1998), "Are road safety evaluation studies published in peer reviewed journals more valid than similar studies not published in peer reviewed journals?", *Accident Analysis & Prevention*, Vol. 30 No. 1, pp. 101-118, doi: [10.1016/S0001-4575\(97\)00068-7](https://doi.org/10.1016/S0001-4575(97)00068-7).
- Escandon-Barbosa, D. and Salas-Paramo, J. (2022), "Technology adoption intention of virtual reality in tourism: tourist and tourism agencies perspective", *Journal of Quality Assurance in Hospitality & Tourism*, doi: [10.1080/1528008X.2022.2144981](https://doi.org/10.1080/1528008X.2022.2144981).
- Geng, L., Li, Y., Zhang, Y., Jiang, Z. and Xue, Y. (2023), "Advancing tourism recovery through virtual tourism marketing: an integrated approach of uses and gratifications theory and attachment to VR", *Current Issues in Tourism*, doi: [10.1080/13683500.2023.2177834](https://doi.org/10.1080/13683500.2023.2177834).
- Go, H. and Kang, M. (2023), "Metaverse tourism for sustainable tourism development: tourism agenda 2030", *Tourism Review*, Vol. 78 No. 2, pp. 381-394, doi: [10.1108/TR-02-2022-0102](https://doi.org/10.1108/TR-02-2022-0102).
- Gursoy, D., Malodia, S. and Dhir, A. (2022), "The metaverse in the hospitality and tourism industry: an overview of current trends and future research directions", *Journal of Hospitality Marketing & Management*, Vol. 31 No. 5, pp. 527-534, doi: [10.1080/19368623.2022.2072504](https://doi.org/10.1080/19368623.2022.2072504).
- Hamid, S., Ali, R., Sujood, S.T., Jameel, S.T., Azhar, M. and Siddiqui, S. (2023), "Understanding behavioural intention of experiencing virtual tourism during covid-19: an extension of theory of planned behaviour", *Tourism and Hospitality Management*, Vol. 29 No. 3, pp. 423-437, doi: [10.20867/thm.29.3.10](https://doi.org/10.20867/thm.29.3.10).
- Hollensen, S., Kotler, P. and Opresnik, M.O. (2022), "Metaverse—the new marketing universe", *Journal of Business Strategy*, Vol. 44 No. 3, pp. 119-125, doi: [10.1108/JBS-01-2022-0014](https://doi.org/10.1108/JBS-01-2022-0014).
- Huang, Y.-C. (2023), "Integrated concepts of the UTAUT and TPB in virtual reality behavioral intention", *Journal of Retailing and Consumer Services*, Vol. 70, doi: [10.1016/j.jretconser.2022.103127](https://doi.org/10.1016/j.jretconser.2022.103127).
- Iftikhar, R., Khan, M.S. and Pasanchay, K. (2022), "Virtual reality tourism and technology acceptance: a disability perspective", *Leisure Studies*, Vol. 42 No. 6, doi: [10.1080/02614367.2022.2153903](https://doi.org/10.1080/02614367.2022.2153903).
- Jafar, R.M.S. and Ahmad, W. (2023), "Tourist loyalty in the metaverse: the role of immersive tourism experience and cognitive perceptions", *Tourism Review*, doi: [10.1108/TR-11-2022-0552](https://doi.org/10.1108/TR-11-2022-0552).
- Jafar, R.M.S., Ahmad, W. and Sun, Y. (2023), "Unfolding the impacts of metaverse aspects on telepresence, product knowledge, and purchase intentions in the metaverse stores", *Technology in Society*, Vol. 74, doi: [10.1016/j.techsoc.2023.102265](https://doi.org/10.1016/j.techsoc.2023.102265).
- Ji, F., Wang, F. and Wu, B. (2023), "How does virtual tourism involvement impact the social education effect of cultural heritage?", *Journal of Destination Marketing & Management*, Vol. 28, doi: [10.1016/j.jdmm.2023.100779](https://doi.org/10.1016/j.jdmm.2023.100779).
- Jo, H. (2023), "Tourism in the digital frontier: a study on user continuance intention in the metaverse", *Information Technology & Tourism*, Vol. 25 No. 3, doi: [10.1007/s40558-023-00257-w](https://doi.org/10.1007/s40558-023-00257-w).
- Kraus, S., Breier, M., Lim, W.M., Dabić, M., Kumar, S., Kanbach, D., Mukherjee, D., et al. (2022), "Literature reviews as independent studies: guidelines for academic practice", *Review of Managerial Science*, Vol. 16 No. 8, pp. 2577-2595, doi: [10.1007/s11846-022-00588-8](https://doi.org/10.1007/s11846-022-00588-8).
- Leven (2023), "Leven", Levenverse, available at: [www.liveleven.com/leven-verse](http://www.liveleven.com/leven-verse) (accessed 19 September 2023).
- Liu, Y. and Sun, X. (2023), "Tourism e-commerce live streaming: the effects of live streamer authenticity on purchase intention", *Tourism Review*, doi: [10.1108/TR-04-2023-0245](https://doi.org/10.1108/TR-04-2023-0245).
- Lu, J., Xiao, X., Xu, Z., Wang, C., Zhang, M. and Zhou, Y. (2022), "The potential of virtual tourism in the recovery of tourism industry during the COVID-19 pandemic", *Current Issues in Tourism*, Vol. 25 No. 3, pp. 441-457, doi: [10.1080/13683500.2021.1959526](https://doi.org/10.1080/13683500.2021.1959526).

- Maaiah, B., Al-Shorman, A., Alananzeh, O. and Al-Badarneh, M. (2019), "The dynamic role of augmented reality in tourism", *Tourism Culture & Communication*, Vol. 19 No. 1, pp. 43-53, doi: [10.3727/109830419X15489421397255](https://doi.org/10.3727/109830419X15489421397255).
- Martins, J., Goncalves, R., Branco, F., Barbosa, L., Melo, M. and Bessa, M. (2017), "A multisensory virtual experience model for thematic tourism: a port wine tourism application proposal", *Journal of Destination Marketing & Management*, Vol. 6 No. 2, pp. 103-109, doi: [10.1016/j.jdmm.2017.02.002](https://doi.org/10.1016/j.jdmm.2017.02.002).
- Morrison, A.M., Bag, S. and Mandal, K. (2023), "Virtual reality's impact on destination visit intentions and the moderating role of amateur photography", *Tourism Review*, doi: [10.1108/TR-12-2022-0621](https://doi.org/10.1108/TR-12-2022-0621).
- Page, M.J., McKenzie, J.E., Bossuyt, P.M., Boutron, I., Hoffmann, T.C., Mulrow, C.D., Shamseer, L., Tetzlaff, J.M., Akl, E.A., Brennan, S.E. and Chou, R. (2021), "The PRISMA 2020 statement: an updated guideline for reporting systematic reviews", *BMJ*, Vol. 372, p. n71, doi: [10.1136/bmj.n71](https://doi.org/10.1136/bmj.n71).
- Puertas Medina, R.M., Martín Martín, J.M., Guaita Martínez, J.M. and Serdeira Azevedo, P. (2022), "Analysis of the role of innovation and efficiency in coastal destinations affected by tourism seasonality", *Journal of Innovation & Knowledge*, Vol. 7 No. 1, p. 100163, doi: [10.1016/j.jik.2022.100163](https://doi.org/10.1016/j.jik.2022.100163).
- Skard, S., Knudsen, E.S., Sjøstad, H. and Thorbjørnsen, H. (2021), "How virtual reality influences travel intentions: the role of mental imagery and happiness forecasting", *Tourism Management*, Vol. 87, p. 104360, doi: [10.1016/j.tourman.2021.104360](https://doi.org/10.1016/j.tourman.2021.104360).
- Standing, C., Tang-Taye, J.P. and Boyer, M. (2014), "The impact of the internet in travel and tourism: a research review 2001–2010", *Journal of Travel & Tourism Marketing*, Vol. 31 No. 1, pp. 82-113, doi: [10.1080/10548408.2014.861724](https://doi.org/10.1080/10548408.2014.861724).
- Talwar, S., Kaur, P., Nunkoo, R. and Dhir, A. (2022), "Digitalization and sustainability: virtual reality tourism in a post pandemic world", *Journal of Sustainable Tourism*, Vol. 31 No. 11, pp. 2564-2591, doi: [10.1080/09669582.2022.2029870](https://doi.org/10.1080/09669582.2022.2029870).
- Tan, K.-L., Hii, I.S.H., Zhu, W., Leong, C.-M. and Lin, E. (2023), "The borders are re-opening! Has virtual reality been a friend or a foe to the tourism industry so far?", *Asia Pacific Journal of Marketing and Logistics*, Vol. 35 No. 7, pp. 1639-1662, doi: [10.1108/APJML-05-2022-0417](https://doi.org/10.1108/APJML-05-2022-0417).
- Tsai, L.-L. (2022a), "Factors that influence virtual tourism holistic image: the moderating role of sense of presence", *Sustainability*, Vol. 14 No. 1, p. 467, doi: [10.3390/su14010467](https://doi.org/10.3390/su14010467).
- Tsai, S. (2022b), "Investigating metaverse marketing for travel and tourism", *Journal of Vacation Marketing*, doi: [10.1177/13567667221145715](https://doi.org/10.1177/13567667221145715).
- Wang, J., Sun, J., Wang, G., Yang, L., Zhang, Y. and Morrison, A.M. (2023), "Red tourism in China: emotional experiences, national identity and behavioural intentions", *Tourism Review*, Vol. 78 No. 4, pp. 1037-1059, doi: [10.1108/TR-09-2022-0440](https://doi.org/10.1108/TR-09-2022-0440).
- Wei, W., Qi, R. and Zhang, L. (2019), "Effects of virtual reality on theme park visitors' experience and behaviors: a presence perspective", *Tourism Management*, Vol. 71, pp. 282-293, doi: [10.1016/j.tourman.2018.10.024](https://doi.org/10.1016/j.tourman.2018.10.024).
- Wei, Z., Zhang, J., Huang, X. and Qiu, H. (2023), "Can gamification improve the virtual reality tourism experience? Analyzing the mediating role of tourism fatigue", *Tourism Management, Elsevier Sci Ltd, June*, Vol. 96, doi: [10.1016/j.tourman.2022.104715](https://doi.org/10.1016/j.tourman.2022.104715).
- Yang, F.X.X. and Wang, Y. (2023), "Rethinking metaverse tourism: a taxonomy and an agenda for future research", *Journal of Hospitality & Tourism Research*, doi: [10.1177/10963480231163509](https://doi.org/10.1177/10963480231163509).
- Yang, T.-T., Ruan, W.-Q., Li, Y.-Q. and Zhang, S.-N. (2023), "Virtual tourist motivation: the differences between virtual tourism and on-site tourism", *Tourism Review*, Vol. 78 No. 5, doi: [10.1108/TR-07-2022-0331](https://doi.org/10.1108/TR-07-2022-0331).
- Zhang, J., Quoquab, F. and Mohammad, J. (2023), "Metaverse tourism and Gen-Z and Gen-Y's motivation: 'will you, or won't you travel virtually?'", *Tourism Review*, doi: [10.1108/TR-06-2023-0393](https://doi.org/10.1108/TR-06-2023-0393).
- Zhu, J. and Liu, W. (2020), "A tale of two databases: the use of web of science and Scopus in academic papers", *Scientometrics*, Vol. 123 No. 1, pp. 321-335, doi: [10.1007/s11192-020-03387-8](https://doi.org/10.1007/s11192-020-03387-8).





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