Metaverse customer journeys in tourism: building viable virtual worlds

Lina Zhong, Zongqi Xu, Alastair M. Morrison, Yunpeng Li and Mengyao Zhu

Abstract

Purpose – *This study aims to examine the use of the metaverse in tourism and hospitality to comprehend better how the technology might shape customer journey management, especially relative to information provision, experiences and customer benefits.*

Design/methodology/approach – *This explanatory research used a two-stage approach of media analysis and practitioner interviews to analyse the interactions among tourism information provision, customer experiences and customer benefits in the metaverse. It conceptualized and mapped the consumer journey of the emerging metaverse experience, focusing on the ideas and practices of metaverse design pioneers in tourism and hospitality.*

Findings – *Based on the media analysis and interviews with 27 designers, the metaverse – information – experiences – benefits (MIEB) model was proposed, containing three parts (information characteristics, customer experiences and customer benefits) and 31 supporting items grouped into nine components.*

Originality/value – *One of the unique contributions of this research is the MIEB model for applying the metaverse in customer journey management (pre-, during- and post-trip). The findings contribute to the current literature with this model based on the practical perspectives of metaverse designers and provide insights on how to incorporate the MIEB model in applying the metaverse in tourism and hospitality management. The findings also address existing literature gaps of insufficient research on metaverse management and design through all stages of the customer travel journey and by paying attention to stakeholders' viewpoints, including the media and designers of metaverse applications. Engaging in semi-structured interviews with pioneers of the metaverse to gain insights into the design of tourism experiences was also different from other metaverse tourism research, although this is not claimed as a significant point of innovation.*

Keywords *Metaverse, Customer journey, MIEB model, Interviews, Content analysis*

Paper type *Research paper*

旅游业的元宇宙客户旅程：构建可行的虚拟世界

摘要

目的：本研究考察了元宇宙在旅游和酒店业中的应用，以更好地理解该技术如何塑造客户旅程管理，特别是与信息提供、体验和客户利益相关的管理。

设计/方法论/方法：这项解释性研究采用媒体分析和从业者访谈两阶段方法，分析了元宇宙的旅游信息提供、客户体验和客户利益之间的相互作用。本研究重点关注旅游和酒店业中设计先驱的理念和实践，概念化并描绘了新兴的元宇宙体验的消费者旅程地图。

研究结果：基于媒体分析和对*27*位元宇宙先驱的访谈，提出了元宇宙-信息-体验-利益模型，包含三个部分（信息特征、客户体验和客户利益），并将*31*个支持题项分为九个部分。

创新性/价值：本研究的独特贡献之一是元宇宙-信息-体验-利益模型。将元宇宙应用于客户旅程管理（旅行前、旅行中和旅行后）。研究结果为当前文献提供了基于元宇宙设计者实践的理论模型，并提供了将元宇宙-信息-体验-利益模型应用于旅游和酒店实践管理中的的见解。研究结果还通过关注利益相关者（包括新闻媒体和旅游元宇宙的设计者）的观点，填补了现有文献中对旅游元宇宙在客户旅行旅程管理和设计的各个阶段的研究不足。尽管并不是一个重要的创新点,与元宇宙的先驱者进行半结构化访谈以获得旅游体验设计的见解，也与过往旅游元宇宙研究不同。

关键词 元宇宙，客户旅程，*mieb* 模型，访谈，内容分析

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La trayectoria del cliente en metaversos turísticos: Construir mundos virtuales viables

Resumen

Objetivo: *Esta investigación analizó el uso del metaverso en el turismo y sector hotelero para comprender mejor cómo la tecnología puede moldear la gestión de la trayectoria del cliente, especialmente respecto a la provisión de información, las experiencias y los beneficios para el cliente.*

Diseño/metodología/enfoque: *Esta investigación utilizó un enfoque de dos etapas de análisis de medios y entrevistas a profesionales para analizar las interacciones entre la provisión de información turística, las experiencias de los clientes y los beneficios para los clientes en el metaverso. Se conceptualizó y trazó el recorrido del consumidor en la experiencia emergente del metaverso, centrándose en las ideas y prácticas de los pioneros del diseño del metaverso en el turismo y hoteles.*

Resultados: *A partir del análisis de los medios y las entrevistas con 27 diseñadores, se propuso el modelo MIEB, que comprende tres partes (características de la información, experiencias del cliente y beneficios para el cliente) y 31 elementos de apoyo agrupados en nueve componentes.*

Originalidad/valor: *Una de las contribuciones únicas de esta investigación es el modelo Metaverso - Información - Experiencias - Beneficios (MIEB) para aplicar el metaverso en la gestión del recorrido del cliente (antes, durante y después del viaje). Los hallazgos contribuyen a la literatura actual con este modelo basado en las perspectivas prácticas de los diseñadores de metaverso y ofrecen información sobre cómo incorporar el modelo MIEB en la aplicación del metaverso en la gestión del turismo y sector hotelero. Los hallazgos también abordan las lagunas bibliográficas existentes debido a una investigación insuficiente sobre la gestión y el diseño del metaverso en todas las etapas del viaje del cliente y prestando atención a los puntos de vista de las partes interesadas, incluidos los medios y los diseñadores de aplicaciones del metaverso. La realización de entrevistas semiestructuradas con pioneros del metaverso para obtener información sobre el diseño de experiencias turísticas también fue diferente de otras investigaciones sobre turismo en el metaverso, aunque esto no se afirma como un punto significativo de innovación.*

Palabras clave *Metaverso, Viaje del cliente, Modelo MIEB, Entrevistas, Análisis de contenido*

Tipo de papel *Trabajo de investigación*

1. Introduction

New technologies encourage novel experiences (Pine and Gilmore, 2011). The metaverse has set the business world abuzz with its potential to reshape an ecosystem for new products, services and emerging synthetic customer experiences. However, there is a substantial knowledge gap in the metaverse and its opportunities for practitioners and academia (Buhalis *et al.*, 2023a, 2023b). Metaverse utilization has significant business potential and will affect tourism and hospitality in various ways (Baker *et al.*, 2023). What was once intangible is becoming more tangible in virtual environments where all types of smart technologies, including artificial intelligence, virtual reality (VR), mixed reality (MR), extended reality and non-fungible tokens (NFTs) are integrated to create immersive experiences (Dwivedi *et al.*, 2022). While these technologies involve virtual experiences, the metaverse encompasses a comprehensive and interconnected virtual universe that transcends individual platforms and experiences (Baggio and Ruggieri, 2023; Lee *et al.*, 2021).

Considering the metaverse in tourism and hospitality is at an infancy stage, more needs to be known about the potential impacts on management and marketing (Baker *et al.*, 2023; Filimonau *et al.*, 2022; Giang Barrera and Shah, 2023; Monaco and Sacchi, 2023; Yang and Wang, 2023). Researchers have begun to conceptualise and predict the potential influence of the metaverse (Buhalis *et al.*, 2023a, 2023b; Buhalis *et al.*, 2023a, 2023b; Dwivedi *et al.*, 2022; Gursoy *et al.*, 2022) reviewed the impacts of the metaverse on the customer journey that involves a stream of purchase stages (pre-purchase, during-purchase and post-purchase) and touchpoints through the consumption process (Lemon and Verhoef, 2016). The traditional five-step customer journey from awareness to purchase probably no longer applies with the arrival of the metaverse (Barta *et al.*, 2023; Flavián, 2019; Gursoy *et al.*, 2022). Instead, the metaverse experience journey delivers a “stream of engagement” in which customers interact with a metaverse-scape and have immersive experiences. There is a need for more empirical studies on the impact of the metaverse on the customer journey, and these future investigations should include the viewpoints of tourism and

hospitality practitioners (Buhalis *et al.*, 2022). This research examined the future use of the metaverse in tourism and hospitality, aiming to comprehend better how the technology will transform customer journey management, especially relative to customer experience design. The research questions were: How is the metaverse transforming the customer journey in tourism and hospitality? and What are the implications for customer journey management?

In-depth interviews with metaverse practitioners in tourism and hospitality were conducted to address the research questions. The research used grounded theory and content analysis, a classic qualitative method for under-explored topics that advocates contextualized understanding of phenomena. A model was established for applying the metaverse in customer journey management (pre-, during- and post-trip). The findings contribute to the current literature with this proposed model derived from practical viewpoints and provide insights on incorporating the framework in adopting the metaverse in tourism and hospitality management.

2. Literature review

2.1 The metaverse in tourism

The metaverse is a parallel and virtual universe (Buhalis and Karatay, 2022) that merges physical and digital virtuality, first used in Neil Stephenson's novel *Avalanche* in 1992. Virtual environments and immersive games (such as *Second Life*, *Fortress Night*, *Roblox* and *VRChat*) are described as the precursors of the meta-universe (Dwivedi *et al.*, 2022; Oh *et al.*, 2023). It is a "mash-up" of technologies that enable multisensory interaction among virtual environments, digital objects and people, such as VR and augmented reality (AR) (Mystakidis, 2022). The tourism and hospitality sector is facing unprecedented challenges post-pandemic and urgently needs digital technology to improve service experiences and storage security. The discussion of the metaverse in tourism and hotels has experienced an unprecedented surge, leading to heightened promotion and exploration (Go and Kang, 2023). Immersion is an essential element that induces people to participate in the metaverse and maintain a continuous world (Jaynes *et al.*, 2003). Interactions in the metaverse are divided into social networks, collaboration and role dialogue. The interest in creating value through collaboration beyond personal VR experience is increasing (Zhang *et al.*, 2018). Significant research has been conducted on meta-universe technology, and Wang et al.(2022a, 2022b) proposed that security and privacy are critical issues, just as they are on social media platforms. Bushell (2022) explored using the metaverse as a marketing and brand tool to provide insights into how enterprises and individuals can expand their influence in the virtual world and connect with others. Zhang and Quoquab (2023) focused on the metaverse discussion of urban destinations based on evidence from China on information provided by online materials, including the official websites of tour organisers and news media.

2.2 The customer experience in tourism

The concept of customer experience was conceived in the mid-1980s. The customer experience encompasses every aspect of a company's offering – the quality of customer care and advertising, packaging, product and service features, ease of use and reliability. Individuals are learning to make the most of technology in their areas of interest. For example, travellers use smartphone apps and software to choose destinations. The most advanced technology application is to experience travel activities at home, including the metaverse, with the help of technology (Roman *et al.*, 2022). This definition may depend more on the characteristics of the technology, given that most supporting technologies (AR, VR, MR) are some of the most prominent new developments in information systems (Xi *et al.*, 2022). The quality and characteristics of tourism information directly affect

expectations, interest and satisfaction with destinations, thereby indirectly influencing tourism experiences (Narangajavana *et al.*, 2017). Information search is essential to purchasing behaviour and forms part of the travel experience (Buhalis and Law, 2008). The value of destination information is equally important. Accurate and detailed content is valuable to travellers, making them more confident when planning their trips.

2.3 The customer journey

Tourism is a sector where intensive contact between customers and service providers constitutes an experience. The journey originates from Shostack's service blueprint and service mapping work (Shostack, 1984). Customer journey management and understanding the role of the customer experience at each journey stage are critical for tourism enterprises (Grewal and Roggeveen, 2020). There are three stages of customer decision-making: pre-purchase, during-purchase and post-purchase (Puccinelli *et al.*, 2009). Virtual customer communities enable firms to establish distributed innovation models that involve varied customer roles in new product development. Nambisan (2002) used a multi-theoretic lens to examine the design of such virtual customer environments, focusing on four underlying themes (interaction pattern, knowledge creation, customer motivation and virtual customer community-new product development team integration) and derived implications for virtual customer environment design. Contact with people on the customer journey is a learning opportunity for companies. By engaging customers and having experiential discourse, people become participants and better establish personal relationships (Yachin, 2018; Veréb and Azevedo, 2019). Mapped innovation perception and pinpointed innovation opportunities along the tourism experience journey with different online scenarios resembling distinct experiences. Organisations must create trouble-free journeys to meet customer needs, ensure success in competitive markets and build customer loyalty (Hussadintorn Na Ayutthaya and Koomsap, 2018; Jafar and Ahmad, 2023). They must introduce methods to embed unforgettable experiences into customer journeys by incorporating the 4Es (entertainment, educational, aesthetic and escapist) (Pine and Gilmore, 2011).

2.4 Challenges and criticisms of the metaverse

Several previous authors have identified challenges and hindrances or put forward criticisms of the metaverse. These challenges include issues related to privacy and data security (Huang *et al.*, 2023; Wang *et al.*, 2022a, 2022b), the digital divide (Wang *et al.*, 2022a, 2022b), potential negative impacts on physical tourism destinations (Allam *et al.*, 2022) and ethical considerations (Monaco and Sacchi, 2023). Prolonged immersion might also lead to a blurred line between virtual and reality, causing disconnection from the physical world and potentially fostering feelings of isolation (Kuntsman and Miyake, 2019).

It is essential, therefore, to have a balanced viewpoint on the metaverse for tourism and hospitality, acknowledging there are positive and negative aspects. Gathering designer perspectives is particularly important in determining how the metaverse will be presented and controlled. Their expertise and insights can help ensure that the metaverse is designed in a user-friendly and engaging manner while also considering ethical and responsible practices.

2.5 The research gaps

Although rapidly expanding, the existing literature needs more research on metaverse management and design through all stages of the customer journey in travel (Gursoy *et al.*, 2022). While the concept of the metaverse is gaining momentum and attracting significant attention, there is still a need to delve deeper into various aspects of its management and

design, particularly as it relates to the customer journey within the tourism and hospitality industry.

It is essential to investigate how the metaverse can be effectively managed and designed to enhance the customer experience at each stage of their journey. This includes understanding how the metaverse can be used to inspire and engage potential travellers during the pre-trip stage, enabling them to explore virtual destinations, accommodations and activities. Research should focus on identifying the most effective strategies and techniques for improving the experience and providing valuable benefits.

Furthermore, attention should be given to the viewpoints of all stakeholders involved in the metaverse ecosystem (Chen *et al.*, 2023). Involving metaverse application designers can shed light on the technical and design considerations necessary for creating intuitive and user-friendly virtual worlds.

In conclusion, while the existing literature on metaverse management and design in the context of the customer journey in travel is expanding, further research is needed to address various gaps and explore new avenues. Focusing on all stages of the customer journey and considering the viewpoints of stakeholders can contribute to a more comprehensive understanding of the metaverse's potential in enhancing the travel experience.

3. Methodology

3.1 Research background

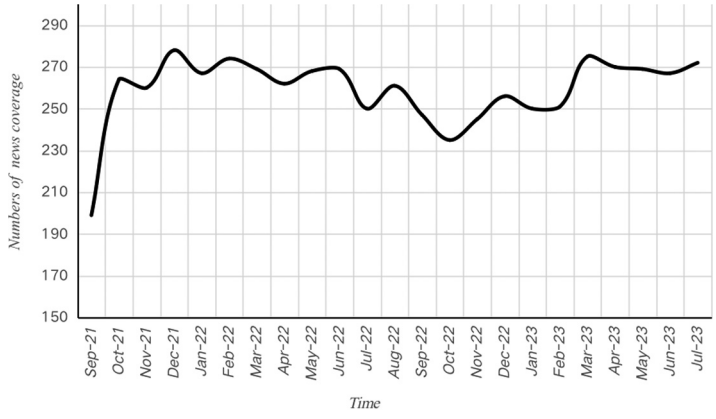
The metaverse is an emerging phenomenon with a potentially dramatic impact on tourism and hospitality. A two-stage approach of media analysis and executive interviews was followed to investigate the role of the metaverse and its implications and consequences. Firstly, news articles were collected from Google Search for the top 30 global media outlets (Table 1). Using the keywords "tourism" and "metaverse", the filter was the type of results chosen as "news". Some 6,231 news articles were retrieved from September 2021 to July 2023, when there was a large volume of news coverage about metaverse applications in tourism and hospitality. Excluding news coverage unrelated to the metaverse, this research yielded 5,959 newspaper articles for analysis, among which a surge of news coverage occurred in October 2021 (Figure 1). A content analysis was conducted on the news coverage to understand the applications and consequences of the metaverse. Data were encoded using DiVoMiner (www.divominer.cn/), and themes were systematically identified (Hsieh and Shannon, 2005).

Table 1 Top 30 media sources with the largest number of news reports

No.	*Media source*	*No. of news reports*	*No.*	*Media source*	*No. of news reports*
1	PR Newswire	558	16	TimeOut	49
2	ARPost	286	17	BW Businessworld	44
3	ZAWYA	207	18	The Drum	43
4	The National	177	19	Daily Sabah	42
5	Investment Monitor	176	20	WAM EN	41
6	Outlook India	143	21	Nikkei Asia	39
7	The Financial Express	138	22	The Guardian Nigeria	39
8	Bizcommunity	99	23	Capital News	38
9	Gulf News	86	24	Arabian Business	37
10	Modern Diplomacy	71	25	Yahoo Finance	37
11	Bangkok Post	68	26	China Briefing	36
12	Canada Newswire	59	27	PR Daily	36
13	Al Arabiya	58	28	Global Cosmetics News	35
14	ArchDaily	54	29	Consultancy-me.com	34
15	Macau Business	54	30	Asahi Shimbun	33

Source: Table by authors

Figure 1 Frequency of news coverage on tourism and metaverse from September 2021 to July 2023

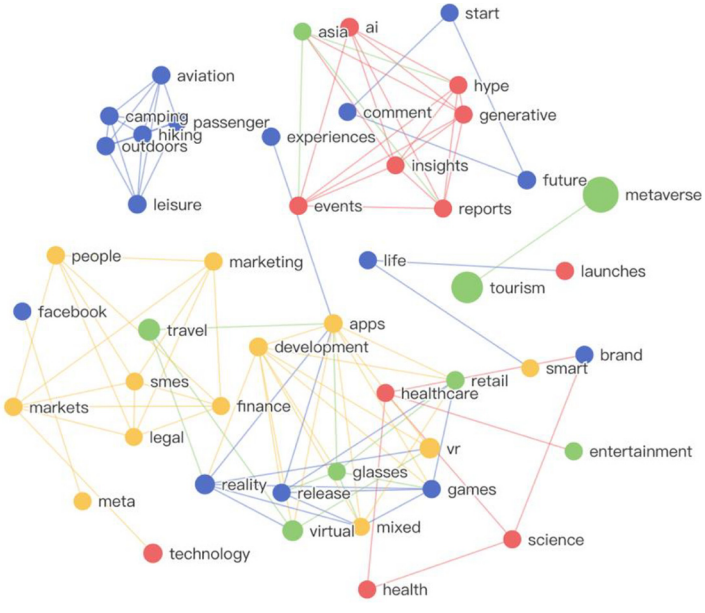


Source: Figure by authors

Semantic network analysis was applied to identify the major themes in the text of the news reports. Four clusters in the news were identified as "overview of tourism metaverse", "core and main characteristics of tourism metaverse", "economic attributes of tourism metaverse" and "exploration of tourism metaverse" (Figure 2).

The findings from the analysis of media reports informed the second stage of the research. Because technology-driven characteristics demand creativity in metaverse design and delivery, in-depth interviews were conducted with practitioners in tourism and hospitality about the metaverse. Given that the media is more concerned about the metaverse and tourism tends to be concentrated in the Asia-Pacific region (Table 2), Mainland China and

Figure 2 Semantic network analysis of tourism metaverse news reports



Source: Figure by authors

Table 2 Demographic characteristics of interview participants

ID	*Location*	*Position*	*Age*	*Business type*
P1	Shanghai	Co-Founder	40–45	Consultancy
P2	Beijing	Director	30–35	Tech company
P3	Qingdao	CEO	35–40	Creative company
P4	Beijing	Founder	40–45	Tech company
P5	Shanghai	Developer	50–55	Tech company
P6	Beijing	Head of R&D	25–30	Tech company
P7	Beijing	Dean of Research Institute	30–35	Tech company
P8	Beijing	Founder	30–35	Culture company
P9	Guangzhou	Director of Marketing	30–35	Tourism service platform
P10	Guangzhou	Director of Operations	30–35	Tourism service platform
P11	Harbin	Manager	35–40	Tech company
P12	Beijing	Angel Investor	30–35	Investment company
P13	Beijing	Executive Director	35–40	Government agencies
P14	Hangzhou	CEO	35–40	Tech company
P15	Hangzhou	Manager	30–35	Tech company
P16	Beijing	Director of Marketing	25–30	Tourism service
P17	Nanjing	Founder	35–40	Tech company
P18	Shanghai	Manager	40–45	Tech company
P19	Qingdao	CEO	35–40	Tech company
P20	Shenzhen	Co-Founder	30–45	Hospitality
P21	Chengdu	Manager	40–45	Scenic area
P22	Chengdu	Manager	35–40	Scenic area
P23	Macau	Director of Marketing	30–35	Tech company
P24	Macau	Designer	25–30	Tech company
P25	Macau	Consultant	35–40	Government
P26	Macau	Director of Operations	40–45	Tourism service
P27	Macau	Director of Operations	35–40	Tourism service

Source: Table by authors

Macau were chosen as the data collection locations for interviews. Also, China and its semi autonomous regions (Macau and Hong Kong) are the world's most significant national internet markets, and the metaverse is rapidly advancing there (Zhang and Quoquab, 2023).

3.2 Data collection and respondents

Interviews were completed from September to November 2022 and August 2023. A list of newly established and existing Chinese companies producing metaverse products and projects in tourism and hospitality was compiled through information available on the internet. The relevant persons of each company were invited to participate in interviews. The selection criteria were that the company used the most advanced metaverse technology and comprehensively understood its application and development in tourism and hospitality. Respondents from 27 companies accepted the interview invitations (Table 2). The interview questions were created based on the customer journey theory, and the current research gaps were considered. After the last two interviews, no new themes emerged, saturation was considered to have been reached and data collection stopped. Interviews lasted an average of 47 mins and were recorded via virtual meetings and transcribed verbatim for anonymity. The data were then read to extract parts that were most relevant or interesting to the topic and coded by two researchers (a master's student and a PhD majoring in tourism management) with the assistance of NVivo 12. Interviews were analysed to construct a preliminary crowdsourcing framework.

3.3 Data analysis

The researchers used the grounded theory method to guide interview response analysis. There were three basic types of coding: open, axial and selectively defined.

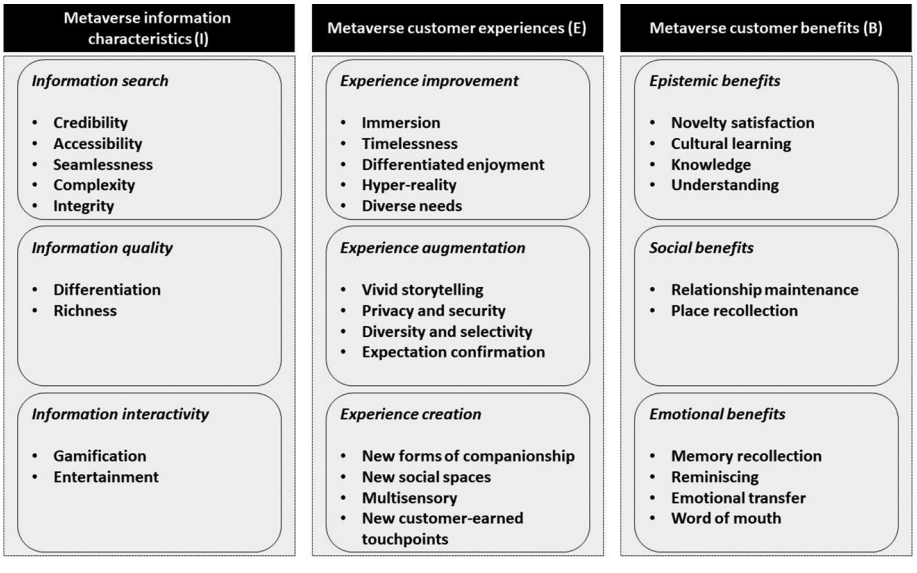
3.3.1 Open coding. This included labelling concepts and defining and developing categories based on their properties and dimensions (Thomson, 2011). The process was divided into two steps. The first step was to label the sorted data, initially conceptualize them and create concepts that best reflected the essence of the data from the interviewee statements and academic literature. The second step was classifying and refining the concepts (Manning, 2017). In this research, the content was aligned according to the customer journey. The sentences with similar meanings were summarized and sorted, and 31 initial categories were extracted (Figure 3).

3.3.2 Axial coding. Open coding abstracts and generalises the data, but the relationship between categories needs further exploration. Axial coding produces dimensions and examines the correlations and differences between established concepts and generic categories (Khalil, 2014). The nine dimensions were identified through axial coding, including information search, information quality, information interactivity, experience improvement, experience augmentation, experience creation and epistemic, social and emotional benefits. Figure 3 shows the proposed metaverse – information – experiences – benefits (MIEB) model. The purpose of this model is to indicate the essential items ($n = 31$) of metaverse design for tourism and hospitality, representing the three broad parts of information characteristics (I), customer experiences (E) and customer benefits (B). The model was used to report the detailed results from the semi-structured interviews which follow.

4. Results

This section explains the results concerning the factors that reflect customer metaverse experiences from practitioners' perspectives. The experiential stimuli and composition of the metaverse experience design dimensions are identified. Information search, information quality and information interactivity as metaverse information characteristics trigger metaverse experiences, including experience improvement, augmentation and creation, which shape epistemic, social and emotional benefits.

Figure 3 Metaverse – information – experiences – benefits (MIEB) model



Source: Figure by authors

4.1 Metaverse information characteristics

During the pre-trip stage, collecting essential information about destinations is crucial (Choi *et al.*, 2018). Regarding metaverse information characteristics, the results highlighted three factors: information search, quality and interactivity, which are experiential cues for customer metaverse experience design.

4.1.1 Information search. Consumers actively gather information during the information search phase to facilitate more informed purchasing decisions (Schmidt and Spreng, 1996). During the pre-trip stage, active information search (Ho *et al.*, 2012) and passive word-of-mouth spread (Pourfakhimi *et al.*, 2020) are the main factors that create important metaverse factors for motivation (Preko *et al.*, 2020). Introducing new media formats like social media adds a fresh dimension to the information search process. It has been demonstrated that social media influences consumer satisfaction during the information search and alternative evaluation stages (Voramontri and Klieb, 2018). The metaverse has further empowered information search compared with the Web 2.0 era, including information credibility, accessibility, seamlessness, complexity and integrity. Information accessibility cultivates an environment where people can obtain information at this stage event more efficiently.

A significant advantage of the metaverse is that it provides credible information (Balasubramanian *et al.*, 2022). Consumers are enduring the consequences of information pollution on social media for an extended period, with intentional (fake news and claims) and unintentional contamination. It often takes much time to verify the authenticity of the information. This problem is avoided when travelling in the metaverse:

> The person in the metaverse does not need to be played, and he is the real expression of the tourists. You do not need to distinguish between true and false (P1).

Information seamlessness is another advantage in the metaverse world (Dwivedi *et al.*, 2022; Yang *et al.*, 2022):

> We have established a scenic metaverse system to integrate information from various platforms to facilitate tourists to make travel plans. For example, tourists can use VR for sightseeing, and the browsing content will be integrated in the personal centre, and changing mobile terminals will not affect the promotion of transactions (P3).

There is little difference between the virtual and physical worlds; people quickly get involved in the virtual three-dimensional world and realise zero distance from the real tourism scene:

> Not only through this intuitive two-dimensional introduction, but it can also directly penetrate the three-dimensional display of our scenic areas. Especially with the promotion of VR technology, we can fully realize three-dimensional immersion at home before arriving (P2).

Several respondents stated that information complexity and integrity are crucial characteristics in information search. The complexity of tourism information is high, mainly because tourism involves multiple aspects, including a destination, transportation, accommodation, catering, attraction tickets and activity arrangements, each of which has its details (Fodness and Murray, 1999). The complexity of metaverse tourism information is higher than that of traditional tourism information because it involves the combination of the virtual and real worlds, and more new factors and issues need to be considered:

> When doing scene design, metaverse tourism needs to consider the complexity of the virtual world, such as space limitations and technical limitations of the virtual world (P6).

Metaverse tourism also needs to consider the complexity of the natural world, such as weather, traffic flow and safety. Most importantly, metaverse tourism also needs to consider the combination of the virtual and real worlds. Considering how to combine the virtual with the experience is necessary.

Information integrity emphasises blockchain's contribution and ensures information's ethical security (Bermejo and Hui, 2022). The construction of many virtual identities and the exchange and storage of information must be secure and private:

> Our company has a dedicated department responsible for data cleaning, deduplication, error detection, and repair to maintain data integrity and ensure that the information provided to customers is complete and verified (P16).

4.1.2 Information quality. Quality information produced by suppliers and consumers improves the usefulness of the information and builds trust. It also helps to comprehend better and meet their needs (Fodness and Murray, 1999). The dimensions of information quality include information authenticity and richness. Quality information saves people time, avoiding the tedium of sorting through true and false content. Accurate information is available in the pre-trip stage. Customers can book hotel rooms and buy NFTs in vivid detail in advance in the metaverse world.

There is an opportunity to have rich information in advance to make travel decisions, including gaining realistic details of scenic areas and hotels:

> For scenic areas, it has absorbed some tourists in advance, and for tourists, it has more detailed tips (P10).

This function is similar to trying before you buy; it provides quality assurance for travellers.

4.1.3 Information interactivity. Gamification is the design of activities or tasks to resemble a game to increase user engagement and enjoyment. In the metaverse, gamification is a critical concept. By designing the tasks and activities in the metaverse in a game-like form, more users are attracted to participate:

> To attract children's attention, we have designed a question-and-answer session, and you can get rewards for correct answers. These designs also give them a deeper understanding of tourist destinations (P11).

Entertainment is a product of interaction and also the purpose of tourism. Tourists prefer to travel for fun and recreation (McKercher and du Cros, 2003). The metaverse will likely reshape tourism and entertainment scenes (Ananya Babu and Mohan, 2022). Using Web 4.0 to obtain information creates a new digital entertainment experience" (P17).

4.2 Metaverse customer experiences

The advent of virtual, augmented and hybrid reality technologies can enrich the customer experience and create novel experiences throughout the customer journey (Flavián, 2019). Metaverse experiences were identified as the second theme encompassing three categories (experience improvement, augmentation and creation) driven by metaverse applications.

4.2.1 Experience improvement. The findings suggest that adopting the metaverse enhances customer experiences through immersion, timelessness, differentiated enjoyment, hyper-reality and meeting diverse needs. VR, AR and other technologies are used to create richer, immersive and personalised travel experiences for tourists. Metaverse travel can bring many potential advantages and opportunities to enhance the travel experience (Buhalis *et al.*, 2023a, 2023b):

> After wearing the VR, you can directly experience beautiful scenery immersively (P3, P4, P5).

> In the metaverse, everyone can have an atmosphere of activity and communication in the space (P11).

> One-to-one replica, parallel to the real world. Of course, there must be some scene differences (P12).

4.2.2 Experience augmentation. Customer experiences can be augmented in various ways, such as with vivid storytelling, privacy and security, diversity and selectivity and expectation confirmation. Tourism's authenticity, participation and interactivity provide people with unique and unforgettable experiences, enriching the content and fun of tourism:

> With AR technology, a vivid story can be told (P2).

> Blockchain combines many technologies to ensure the privacy of access (P6).

4.2.3 Experience creation. Metaverse adoption has prompted respondents to believe they can create new experiences, especially as the technology matures. The metaverse can provide new forms of companionship and social spaces, multisensory experiences and customer-earned touchpoints. For example, avatar design has been adopted in museums, and the avatars can accompany and interact with customers, such as information search, tour guiding and gamification. The respondents reported that customers can also interact with each other in the metaverse world.

Customers obtain multisensory experiences in the metaverse world, for example, through olfactory cues such as electronic scent. New customer-earned touchpoints will be created in the metaverse, defined as direct or indirect contact episodes with customers in the metaverse (Lemon and Verhoef, 2016), e.g. NFTs.

4.3 Customer benefits

Customers can continue to benefit from metaverse experiences after trips, where benefits signify the desired outcomes from consumption (Choe and Kim, 2018; Kim and Choe, 2019; Park *et al.*, 2023). The third theme of customer benefits encompasses three categories (epistemic, social and emotional) driven by metaverse applications.

4.3.1 Epistemic benefits. Customers gain epistemic benefits such as novelty satisfaction, cultural learning and knowledge understanding. They can enter the metaverse world to acquire cultural knowledge about destinations guided by avatars. The customer's sense of gain may be material or spiritual:

> We conducted interviews with children who came to study in the Metaverse Museum. They all said that "it is new and fun, and we feel that they have learned new knowledge" (P21).

> The ability of the metaverse to act on various industries, including museums, science and technology venues, ancient cities and towns. At the same time, it can satisfy all age groups, regarding children's knowledge education and elderly accompanied tours (P12).

> In addition, tourists should also try to make them feel that they have learned knowledge and understand the power of culture (P13).

4.3.2 Social benefits. The social benefits from metaverse experiences include relationship maintenance and place recollection. Post-trip memories are vividly shared with family and friends through digital footprints and NFTs. Customers can also create their personalised metaverse to recall memorable experiences. Life journey visualisation in the metaverse connects people with the scenery they have seen in the places they have visited:

> On the one hand, you can share your digital journey with more friends around you. On the other hand, you can communicate with people who have been to common scenic areas and have common preferences to build a social network (P5).

4.3.3 Emotional benefits. The emotional benefits from metaverse experiences consist of memory recollection, reminiscence and emotional transfer. Emotions are crucial dimensions of memorable tourism experiences (Kim *et al.*, 2022). The recollection of the tourism experience is a decisive factor in future behaviour and destination choice (Kim *et al.*, 2022).

The respondents suggested that memory is the most precious wealth, and digital tourism collections are equipped with the characteristics of permanent preservation in the metaverse. Emotional valence and benefits with social functions can increase the willingness to share, generate a chain of word-of-mouth communication and make the entire journey a closed loop. The logical chain after travel is also transparent: the connection and attachment with the scenic areas, the sharing and maintenance with fellow travellers and the sharing and dissemination with friends:

> Our cultural and creative products may be consumed when we buy them at home, but digital groups are different; they can be stored permanently. This allows customers to return to any beautiful virtual journey anytime (P3).

> Creating an open metaverse in virtual space, sharing and discussing with friends to create emotional transmission and enhance each other's emotional experiences (P21).

> A good experience creates a new word-of-mouth communication, forming a positive cycle of traffic fission concept (P27).

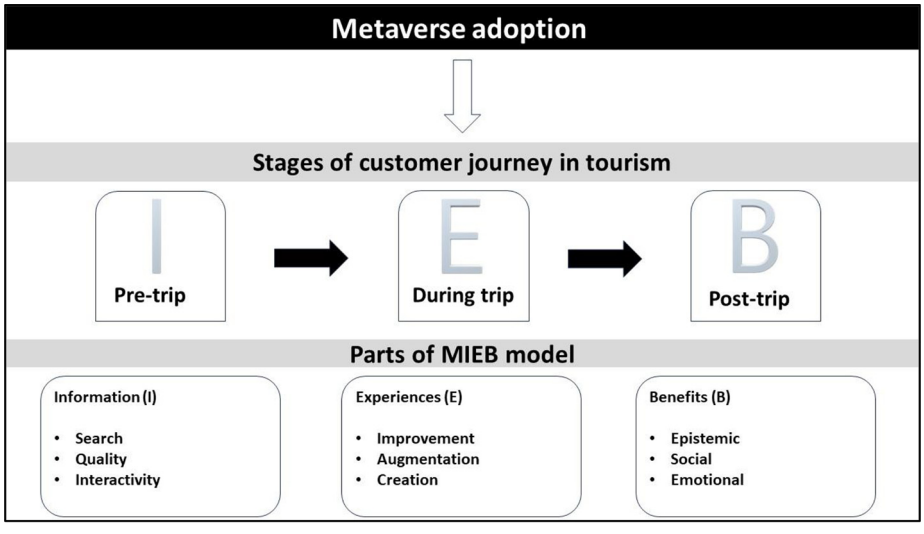
Based on the analysis of interview findings, a metaverse customer journey map was prepared (Figure 4). For each of the three stages, essential components were identified – pre-trip (metaverse information characteristics, I), during-trip (metaverse customer experiences, E) and post-trip (metaverse customer benefits, B). The purpose of identifying these components in Figure 4 was to highlight the critical features of metaverse design for hospitality and tourism and to guide future scholars using quantitative research approaches.

5. Conclusions, discussion and implications

5.1 Conclusions and discussion

Metaverse intervention will introduce significant market changes, particularly by creating new customer experiences. This research examined the application and impacts of the metaverse in tourism and hospitality. Practitioner perspectives on the metaverse were determined in the context of the customer journey. Several research questions were

Figure 4 Metaverse customer journey map based on the MIEB model



Source: Figure by authors

addressed that have yet to be answered in previous studies. There was a focus on determining the scenarios, products and emerging experiences that managers intend to shape and how these experiences will meet people's needs and generate satisfactory customer journey management through metaverse experience encounters.

This research examined the emerging metaverse's effects on tourism experiences from a managerial perspective. Initially, drawing upon the theoretical foundation of the customer journey model, a research framework was proposed to investigate the influence of the metaverse in creating appealing and unforgettable tourism experiences. This impact was analysed across the various stages of the customer journey, including the attraction, experience process and value generation phases. Consequently, three parts of a MIEB model were proposed. A unique customer journey map consisting of 9 components and 31 supporting items. An exploratory study was conducted in China, recruiting 27 qualified pioneers of the metaverse in tourism for semi-structured interviews. The interview findings were used to confirm the metaverse-driven customer journey map.

This research confirmed other researchers' claims that the metaverse will be different from and replace the traditional buying process model. For example, Gursoy *et al.* (2022) coined the concept of the metaverse experience journey and said it must be a "stream of engagement". Buhalis *et al.* (2023a, 2023b) described the hospitality experience customer journey and divided it into the same three stages as used in this research. This explanatory study differs from these previous viewpoint papers in deriving a fine-grained model (MIEB) based on the perspectives of metaverse designers.

5.2 Theoretical implications

This research was explanatory. The findings provide new insights by analysing the stages of the customer journey within the metaverse and contributing to the tourism, hospitality and customer experience literature. They address existing literature gaps of insufficient research on metaverse management and design through all stages of the customer travel journey and by paying attention to stakeholders' viewpoints, including the media and designers of metaverse applications.

This research followed a two-stage approach of media analysis and designer interviews to analyse the interactions among tourism information, customer experiences and customer benefits in the metaverse. The findings provide a fuller understanding of what shapes consumer behaviour in metaverse tourism. Pursuing value affects travel choices, and positive travel experiences influence sharing and word-of-mouth communications. Metaverse benefits generate satisfaction that promotes repurchasing; past customer experiences provide information and promote future trips.

The generation of a new conceptual framework (the MIEB model) deepens the understanding of the consumer journey in using the metaverse. Smart technologies, including the metaverse, are facilitating travel experiences, overcoming the intangibility of tourism and fulfilling contemporary demands. Participation in the metaverse creates new opportunities for experience co-creation in tourism as consumers and suppliers interact (Buhalis *et al.*, 2023a, 2023b). The MIEB model shows precisely where and how these interactions can take place in the metaverse.

The proposed MIEB model consists of 3 parts and 9 components with 31 dimensions. These indicators will be of use to scholars interested in further exploring and developing a scale for metaverse tourism and to designers and marketers measuring metaverse performance.

5.3 Practical implications

This research offers management insights on integrating the metaverse into tourism and hospitality. The MIEB model and metaverse customer journey management map clearly

chart what is involved in metaverse tourism design and consumer participation. They highlight the potential critical success factors in metaverse application and where management should place its emphasis.

This study emphasises the importance of information in tourism. Managers must shape good experiences by ensuring the accuracy and convenience of information search, improving information quality and enriching the consumer's interaction with information. Metaverse technologies can positively impact the three-stage travel experience journey, making trips more attractive and memorable. Metaverse tourism provides sensory information by integrating physical and virtual environments (Go and Kang, 2023) and offers experience co-creation opportunities to management. These experiences have unique characteristics at the three stages of the consumer travel journey. Tourists have increasingly high demands and expectations for the quality of their experiences. Part of these expectations are technology-driven and enhanced by technological advances, including the metaverse. Managers must conduct research to determine the expected metaverse experiences of their particular customers at each stage of the consumer travel journey.

The MIEB model and metaverse customer journey management map should be applied in enterprise and destination marketing and in framing future research. Several recent research studies have discussed the new marketing potential of using the metaverse (Chen *et al.*, 2023; Rather, 2023; Sánchez-Amboage *et al.*, 2023), while also mentioning that metaverse marketing is not yet fully understood and appreciated. The findings of this research elucidate the consumer journey in using the metaverse and provide guidelines for future marketing and research studies.

5.4 Limitations and future research directions

The limitations of this research include the focus on practitioners' viewpoints through interviews. Other relevant information for developing the metaverse is needed from customer, tourism and hospitality business perspectives. The interviewees were from China, limiting the results' potential generalization. Future research should gather data from multiple world regions and sources.

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