



## The Role of Metaverse to Create an Interactive Experience for Tourists

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### ARTICLE INFO Abstract

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The Metaverse will introduce new possibilities for the tourism industry to create interactive experiences for tourists. This paper explores the potential of Metaverse technology to provide immersive and engaging experiences for tourists, and the challenges and opportunities that this technology presents. A quantitative approach was adopted, and a questionnaire form was developed. The sample size was 243 tourists, who were randomly selected. The data were analyzed using SPSS (26) software. The findings suggest that the Metaverse has the potential to transform the tourism industry by enhancing the tourism experience and creating lasting memories for visitors. The effectiveness of interactive experiences in the Metaverse is influenced by several factors including user engagement, personalization, authenticity, and immersion. Tourist behavior and motivations in the Metaverse are driven by a desire for novelty, escapism, social interaction, learning, and engagement with brands. The study also highlights the need for addressing security and privacy concerns and providing users with more control over their personal information. The study recommends several strategies to leverage the potential of the Metaverse in the tourism industry, including collaboration, ethical and social considerations, and evaluating the impact of Metaverse experiences. The study also recommends developing clear privacy policies, implementing strict regulations, educating users on security and privacy, and incorporating privacy-enhancing technologies to protect user data and enhance user privacy.

### 1. Introduction

Interactive experiences are essential for tourists as they provide an immersive and engaging way to explore a destination. Through interactive experiences, tourists can gain a deeper understanding of the culture, history, and people of the place they are visiting. Interactive experiences also allow tourists to be more actively involved in their travels, as opposed to simply observing from afar. This can lead to more meaningful connections with locals and a greater appreciation for the destination. Additionally, interactive experiences can help create lasting memories that will stay with tourists long after their trip is over. The metaverse has potential to revolutionize the tourism industry by providing a new platform for immersive experiences and a shared virtual space for stakeholders (Coelho, et al. 2018 and Pasquinelli, et al. 2023) .

The Metaverse can be used to create interactive and immersive experiences for tourists (Gursoy, et al. 2022), such as virtual travel experiences, cultural research and cultural

preservation , and the strategic use of immersive media and narrative messages . Additionally, blockchain technologies, artificial intelligence applications, and unmanned aerial vehicle (UAV) photography can all be utilized to enhance the metaverse experience. For example, airlines can use the metaverse to enhance existing tech to create virtual travel experiences for passengers. Similarly, museums can use the metaverse to create virtual exhibitions and tours, allowing visitors to experience art in a very immersive way (Bhatia and Saini, 2023). also, blockchain technologies can be used to create virtual currencies that can be used to purchase experiences and goods in the metaverse (Huynh, et al. 2023).

Also creating digital twins of tourist attractions , Travel agents can offer virtual tours that give visitors the chance to explore the area from the comfort of their own home (Buhalis, et al. 2023). Additionally, interactive experiences can be designed that require customers to actively participate in activities , such as playing games or completing puzzles. This can help create a more engaging and entertaining experience. Companies can also use virtual reality to create a more immersive experience, allowing visitors to feel like they are there. With the right technology and design, the possibilities for creating interactive experiences in the Metaverse are virtually endless (Theodoropoulos, et al. 2023).

The use of the metaverse in tourism can offer several benefits. One of the main advantages is that it allows for virtual travel experiences, which can be accessed from anywhere in the world. This can be especially helpful during times of restricted travel, such as during a pandemic, or for individuals who may have limited mobility. In addition to providing virtual travel experiences, the metaverse can also offer opportunities for education and cultural exchange. Tourists can learn about new cultures and visit historical sites through virtual tours and interactive exhibits, which can be accessed from the comfort of their own homes (Gursoy, et al. 2022).

The metaverse also offers opportunities for new business models in tourism, such as virtual hotel rooms and conference spaces, which can be used for remote work and virtual events. These virtual spaces can also be customized to provide unique and personalized experiences for tourists. Furthermore, the use of the metaverse in tourism can help reduce the negative impact of traditional tourism on the environment. By offering virtual travel experiences, tourists can reduce their carbon footprint and lessen the strain on local resources in popular tourist destinations. This paper explores the role of the Metaverse in creating interactive experiences for tourists. It examines the benefits and challenges of Metaverse technology, and provides recommendations for tourism professionals looking to integrate this technology into their businesses (Suanpang , et al 2022 ; Go and Kang,2022).

## **2. Literature review**

### **2.1. Metaverse**

#### **2.1.1. Definition and concept of the Metaverse**

On October 2021, Mark Zuckerberg stated that Facebook would change its name to Meta and spend heavily in Metaverse. Many people thought Metaverse was a brand-new term (Damar, 2021). But the term Metaverse was coined in 1992 by science-fiction writer Neal Stephenson. Its most basic definition refers to “the concept of a fully immersive virtual world where people gather to socialize, play, and work.” (Laeq,2022, P.1).

METAVVERSE, combination of the prefix “meta” (implying transcending) with the word “universe”, describes a hypothetical synthetic environment linked to the physical world (Lee and et al.,2021. P.1). Mystakidis (2022 P.486) defined The Metaverse is “the post-reality universe, a perpetual and persistent multiuser environment merging physical reality with digital virtuality. It is based on the convergence of technologies that enable multisensory

interactions with virtual environments, digital objects and people such as virtual reality (VR) and augmented reality (AR)". The Metaverse is described as a virtual shared space that combines virtual reality, augmented reality, and the internet (Damar,2021, P.1) .

In Metaverse, Humans-as-avatars interact with each other in an immersive world in the Metaverse. The Metaverse is accessed by computer terminals that display virtual reality. Users can create their avatars, Travel, construct virtual real estate they have sold and bought, and engage in the entire spectrum of human social and instrumental activities. As a result, the Metaverse is more of an open-ended digital culture that exists alongside the physical domain than a gaming with particular restrictions and aims (Dionisio, et al.2013 ; Kim and Hall, 2019) .

### **2.1.2. Historical development of the Concept of Metaverse**

The Metaverse is a virtual world that allows users to interact with each other and the environment in a simulated environment. It has its roots in science fiction, with the concept first introduced in Neal Stephenson's novel "Snow Crash" in 1992. However, the idea of a shared virtual world where users could interact with each other and the environment goes back even further (virtual and whitepaper, 2021).

The first instance of a shared virtual world was created in the 1970s at the University of Illinois. The system, called PLATO, was used for educational purposes and allowed users to interact with each other through text-based messaging. In the 1980s, virtual reality technology began to emerge, with the development of the first head-mounted display (HMD) by Ivan Sutherland. This technology allowed users to experience a virtual world in a more immersive way (Yu,2022).

The term "Metaverse" was first coined by author Vernor Vinge in his 1992 novel "A Fire Upon the Deep." In the same year, Neal Stephenson popularized the concept of the Metaverse in his novel "Snow Crash." The novel described a virtual world called the Metaverse, which was accessed through a computer interface called the Metaverse Interface (MI). The Metaverse was depicted as a vast, immersive world where users could interact with each other and the environment in real-time (Darkazanli, 2022).

Following the publication of "Snow Crash," the concept of the Metaverse began to gain traction. In 1995, the first graphical virtual world, called "Active Worlds," was launched. It allowed users to create their own virtual environments and interact with each other through avatars. In 2003, Linden Lab launched "Second Life," a virtual world that allowed users to create their own avatars and environments (Chen, et al.; 2023).

Today, the Metaverse is evolving rapidly, with new technologies such as virtual reality (VR), augmented reality (AR), and mixed reality (MR) enhancing the immersive experience. The Metaverse is being used for a variety of purposes, including gaming, socializing, education, and commerce. It has also gained attention as a potential tool for creating interactive experiences in tourism (Mateusz and Gerhard,2023).

### **2.1.3. Current state of the Metaverse and its potential in tourism**

With the term "XR," immersive technologies like Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality are all included (MR). Virtual reality (VR) is an alternative, entirely distinct, artificial environment that has been generated digitally and in which users can interact with it as if they were physically present in it (Rauschnabel, et al., 2022). Whereas MR is a more complicated notion that incorporates current technical advancements, AR embeds digital inputs and virtual aspects into the actual environment to

enhance it. MR is a superset of both AR and VR and combines both of them (Murray, 2020).

The Metaverse is founded on technologies that allow for multimodal interactions with digital people, objects, and settings. Motion controllers, binaural or spatial audio, stereoscopic displays, and 3D all allow for active engagement with virtual objects. Either external, permanently installed cameras or built-in headset sensors and cameras are used to monitor physical movement. An important feature that reflects a headset's ability to track motion is the number of degrees of freedom (DoF) it can support (Dionisio, et al.2013). Early, simpler headsets could only support three DoFs of rotational head movement, while modern, high-fidelity headsets can support all six DoFs, which now include lateral body movement along the x, y, and z axes. Perpetual movement translation using unidirectional treadmills is one frontier in relation to occluded VR spaces (Mystakidis, 2022).

The Metaverse can be characterized as another advanced reality that consolidates components of AR, VR, blended reality, social collaboration, internet games, shopping and work (Puerto, 2021). It assumes an undeniably significant part in recreation travel. From reservation to support arrangement and deals Real domain, AR/VR, and symbols can supplant actual staff and deal with the front office (Mathews,2021). Mechanical advances carry new preparation amazing open doors to the friendliness business, and augmented reality (VR) is one of the new innovations. VR copies the climate (reality or creative mind), recreating the presence of a client and permitting them to interface with different clients (Lui and Goel, 2022).

The Metaverse is characterized as a virtual world that combines physical and digital elements, assisted by the convergence of Internet and Web technologies, as well as Extended Reality (XR). Holograms. The Metaverse is evolving rapidly, with new technologies such as virtual reality (VR), augmented reality (AR), and mixed reality (MR) enhancing the immersive experience. Today, there are several virtual worlds that can be accessed through various devices, including desktop computers, gaming consoles, and mobile phones. Some of the most popular virtual worlds include Second Life, VRChat, and Sansar (Dwivedi, et al., 2022).

Virtual worlds offer a range of opportunities for tourism. For example, they can be used to provide virtual tours of tourist attractions, museums, and cultural sites. They can also be used to create immersive experiences that allow users to interact with historical events or cultural traditions. Virtual worlds can also be used to promote destinations and experiences, providing a new way for tourism organizations to reach potential visitors (Li and Collins, 2023).

#### **2.1.4. Opportunities and challenges of the Metaverse in creating interactive experiences for tourists**

The Metaverse is still an idea that hasn't been fully realized. In the Metaverse, realism is attempted to aid a user's psychological and emotional involvement with the world. The instrumentation by which human beings engage with the environment, that is, their senses and bodies, particularly through their faces and hands, is constant across all perspectives on reality. Through this structure of perception and expression, we approach realism. Independent of virtual worlds, technologies and approaches for boosting immersive realism, particularly for the senses of sight, hearing, and touch, continue to evolve (Lee and Kim, 2022).

Metaverse allows users to create digital assets and store them on the blockchain, which can be used to facilitate transactions and other activities more quickly and efficiently than traditional methods. And it is built on a decentralized network, which makes it more secure

than centralized systems. Transactions are secure and immutable, meaning that they cannot be changed or reversed once they have been completed (Huynh-The, et al., 2023).

A number of studies have explained the Metaverse is open to anyone with an internet connection, making it accessible to people around the world regardless of their location or financial status. This makes it easier for people to access services that may not be available in their local area or country and provide an alternative for tourists who may not be able to physically visit a destination due to factors such as mobility limitations or travel restrictions (Madiaga, et al.; 2022 ; Li and Collins, 2023).

For disabled and elderly tourists with limited mobility, Metaverse tourist experiences can be a lifeline. It may take people to far-flung locations from the comfort of their own homes, allowing them to cross off sites on their wish list that they otherwise would not be able to see. It will also aid in the reduction of anxiety and loneliness, as well as improving their mental health. As a result, rehabilitation will be possible, and the general quality of life will improve. The elderly will be able to travel down memory lane thanks to historical travel (Felix, 2022).

According to (Wei,2023) Metaverse offers the potential to create immersive experiences that can transport tourists to new destinations and provide a unique perspective on cultural sites and landmarks. Several studies have explored the Metaverse can enhance tourist engagement by providing interactive experiences that allow visitors to participate in activities and explore destinations in a new way (Ball, 2021 and Caulfield, 2021 and Rodgers and Thorson,2000).

Several investigators have proved that the Metaverse is an Innovative marketing tool. As Virtual tourism provides an innovative way for tourism organizations to market destinations and experiences, creating new opportunities to reach potential visitors. The Metaverse is currently regarded as a facilitator, rather than a replacement, tool (Taylor, 2022 and eMarketer, 2021).

A Metaverse experience will never be able to replace a real travel experience, it is a marketing and developing tool, Tourist sites, tour operators, hotels, tour and activity providers should use the Metaverse to promote their services which help tourists to explore new products and places (Hollensen et al.,2022). Travellers could compare and examine hotels, airlines and attractions using Metaverse (with precise colors, lights, and dimensions) and sounds without ever leaving their homes. Metaverse may also be used to develop tourism. It has the potential to outperform any existing communication method, including video and voice calls (Buhalis and Karatay, 2022).

There is a clear dearth of consensus among researchers about the Cost-effective of Metaverse. Virtual tourism can be a cost-effective way to create and promote destinations and experiences, without the need for physical infrastructure or significant investment. Major studies in this area confirmed that Metaverse has several challenges (Bec, et al., 2021). Chow (2021) draws Lack of Regulation as a basic challenge of Metaverse. Metaverse platforms are not regulated by any government or financial institution, which can lead to potential scams and frauds. And Metaverse raises concerns around data privacy and security, particularly with regards to personal information and user behavior (Clegg, 2021).

World Economic Forum (2022) explained that the transaction fees on metaverse platforms can be quite high due to the decentralized nature of the platform and the lack of regulation. And creating high-quality content for virtual tourism experiences can be challenging and requires significant resources, including expertise in 3D modeling, animation, and programming. In addition to Virtual tourism experiences may need to be adapted to ensure



they are culturally sensitive and respectful, and do not appropriate or misrepresent cultural traditions (Stylos, et al. 2021) .

SITA (2022) showed that virtual tourism experiences can be complex and require significant time investment to learn and navigate, which may limit user adoption and engagement. Furthermore, The Metaverse requires high-end computing devices, fast internet connections, and VR or AR equipment, which may limit access for some users.

### **3. Interactive Experiences in the Metaverse**

#### **3.1. The interactive experiences for tourists**

Interactive experiences for tourists have become increasingly popular in recent years as a way to engage visitors and create memorable experiences. Interactive experiences can range from digital applications to physical activities, and they are often used to provide visitors with an immersive experience that is tailored to their interests (Xu and Buhalis, 2021). Digital applications are becoming increasingly popular as a way to provide interactive experiences for tourists (Tsai, 2022). These applications can be used to provide information about attractions, provide directions, or even offer virtual tours of destinations. Digital applications can also be used to create personalized experiences by allowing users to customize their itineraries or access exclusive content. Additionally, digital applications can be used to facilitate communication between visitors and local businesses or attractions (Shevlin,2022).

Physical activities are another type of interactive experience that can be used to engage tourists. These activities can range from scavenger hunts and outdoor adventures to educational workshops and cultural performances. Physical activities are often designed with the goal of providing visitors with an immersive experience that allows them to learn more about the destination they are visiting (Rubio-Escuderos, et al., 2021).

Interactive experiences for tourists have numerous benefits, including increased engagement and satisfaction among visitors. By providing an immersive experience tailored to individual interests, interactive experiences can help create a more meaningful connection between visitors and their destination. Additionally, interactive experiences can help increase visitor spending by providing exclusive content or discounts on local attractions or businesses (Rauschnabel, 2022).

Despite the numerous benefits of interactive experiences for tourists, there are also some challenges associated with them. One challenge is ensuring that these experiences remain engaging over time; this requires careful planning and regular updates in order to keep users interested in the content being offered. Additionally, there is a risk that some users may find certain interactive experiences too challenging or overwhelming; this risk must be managed carefully in order to ensure that all users have a positive experience with the activity being offered. For these reasons, metaverses can be applied as a tool to create immersive tourism experiences with the aim of attracting tourists (Qin, et al.,2022 ; O'Regan, et al., 2021).

#### **3.2. Types of interactive experiences offered by the Metaverse**

The types of interactive experiences offered by the Metaverse have received limited attention in literature. Many researchers described these types as a Virtual tour, because virtual tours offer an immersive experience that allows tourists to explore destinations and landmarks in a simulated environment. Virtual tours can include a range of interactive elements, such as 360-degree videos, audio commentary, and interactive maps. Also, brands can use the Metaverse to create interactive experiences that promote their products or

services. These experiences can include virtual product demonstrations, interactive advertising, and immersive brand experiences (Moy and Gadgil, 2022).

Another studies showed gaming experiences could be interactive tourism experiences (Ning, et al. 2021). Especially, Gaming experiences in the Metaverse can provide interactive and engaging experiences for tourists. These experiences can range from simple games to complex multiplayer experiences that allow users to interact with each other in virtual environments. And the Metaverse can offer educational experiences that allow users to learn about a range of topics, such as history, science, and art. These experiences can include virtual classrooms, educational games, and interactive exhibits (Loureiro, et al.,2020).

But the main weakness of the previous studies is the failure to determine social and cultural interactive experiences. Social experiences in the Metaverse allow users to interact with each other in virtual environments. These experiences can include virtual meetups, social events, and online communities. The Metaverse can provide cultural experiences that allow users to learn about and experience different cultures in a virtual environment. These experiences can include virtual visits to museums, cultural sites, and festivals (Koo, et al., 2022 ; Koohang, et al.,2023).

### **3.3. Factors influencing the effectiveness of interactive experiences in the Metaverse**

It was found that user engagement is a critical factor in determining the effectiveness of interactive experiences in the Metaverse. The more engaged the user is, the more likely they are to have a positive experience. This can be achieved through interactive elements, such as virtual tours, games, and social events (Jadil, et al., 2021). Authors have found that Personalization is another critical factor in the effectiveness of interactive experiences in the Metaverse. if tourists feel that the experience is tailored to their needs and interests. This can be achieved through the use of user data and preferences to customize the experience (Fan, et al., 2022 ; Go and Kang, 2023).

It has been shown in (Dwivedi,2022) that the Metaverse offers an immersive experience that allows users to feel as though they are physically present in a destination. This can be achieved through high-quality graphics, sound effects, and the ability to interact with the environment (Deng, et al., 2019). In addition to the Authenticity which is an essential factor in the effectiveness of cultural experiences in the Metaverse. Tourists are more likely to have a positive experience if they feel that the experience accurately represents the culture or destination (Buhalis, et al ., 2020). This can be achieved through the use of local experts and tour guides to provide accurate information and insights. In another way, it's unclear whether tourists will enjoy a completely immersive Metaverse experience (Buhalis,2020).

Searching for authentic experiences is one of the most recent travel trends. Tourists are increasingly interested in experiencing the genuine life of the towns they visit, avoiding busy or visible areas in favor of living like natives. One factor that could explain this is that tourists may feel alienated from modern life and seek for authenticity as a result. At the same time, this could explain the growing popularity of ecotourism, which combines escapism with digital purification (Herrman and Browning, 2021).

While the Metaverse has the potential to transform tourism, how tourists perceive digital experiences is crucial. They may be frustrated not only by the way technology has taken over every area of their lives, but also by the limitations of virtual encounters (Smart et al.,2020 ; Duan, et al.,2021 ; Sabil and Han, 2022)

### **3.4. Tourist Behavior and Interactive Experience in the Metaverse**

#### **3.4.1. Tourist behavior and motivations in the Metaverse**

Tourists are motivated to visit the Metaverse to experience something new and different from their daily lives (Lim, et al., 2022). The virtual world offers a sense of novelty and escapism from the real world, allowing tourists to explore new environments and interact with new people. As well as they are motivated to explore the Metaverse and discover new experiences, such as virtual tours, games, and cultural experiences (Wang, et al., 2022). The virtual world allows tourists to explore destinations that may be inaccessible or too expensive in the real world (Hollensen, et al., 2022).

Also, The Metaverse provides tourists with the opportunity to interact with other users and participate in social events (Zhao, et al., 2022). Social interaction is a critical motivator for tourists, as it allows them to connect with others who share similar interests and experiences (Um, et al., 2022). Moreover, Tourists are motivated to visit the Metaverse to learn about new cultures and destinations (Gursoy, et al., 2022). The virtual world offers educational experiences, such as virtual field trips and historical recreations, that provide tourists with a new way of learning and experiencing the world (Lewis, et al., 2022).

In addition to engage with their favorite brands (Shen, et al., 2021). Brands can use the Metaverse to create interactive experiences that promote their products and services, allowing tourists to engage with the brand in a new and innovative way (Marr, 2022). Furthermore, The Metaverse offers tourists a convenient and cost-effective way to experience new destinations and activities (Weston, 2022). Tourists can access the virtual world from anywhere, at any time, and at a fraction of the cost of traditional travel (Stienmetz, et al., 2021).

#### **3.4.2. Perception and satisfaction of tourists with interactive experiences in the Metaverse**

Visitors are increasingly expecting participatory experiences (Revfine, 2021). They want to be able to interact meaningfully with the destination and its culture, to explore and learn about the destination in an interactive manner, to interact with locals and other tourists in a safe and enjoyable environment, to access information quickly and easily, to customize their experience to their own interests and preferences, to share their experiences with others, to access technology that enhances their experience, to access services that make their experience more enjoyable (Parra-Gallego and Orozco-Arroyave, 2022). However, based on research and studies, tourists' perception and expectations of interactive experiences can vary depending on several factors (Milmo, 2021).

As noted by Lewis, et al. (2022) the perceived authenticity of the interactive experiences in the Metaverse is a critical factor that affects the satisfaction of tourists. The degree of authenticity of the virtual world and the interactive experiences within it can influence the tourists' perception of the experience as real and immersive.

Park and Kim (2022) found that Tourists' enjoyment and engagement with the interactive experiences in the Metaverse can significantly impact their satisfaction. Interactive experiences that are engaging, fun, and entertaining can create positive memories and increase the likelihood of repeat visits. The perceived value of the interactive experiences in the Metaverse is another significant factor that influences tourists' satisfaction. Tourists



evaluate the interactive experiences based on the value they receive relative to the price paid or the time and effort invested in the experience (Allam, et al.,2022).

And recent studies have indicated that the degree of personalization and customization offered by the interactive experiences in the Metaverse can impact tourists' satisfaction. Tourists may have unique preferences, and experiences that cater to these preferences can enhance their satisfaction (Kim, 2021; Seok,2021; Gupta,2022).

Also, The technical quality of the interactive experiences in the Metaverse, such as graphics, sound, and navigation, can affect tourists' satisfaction (Lehto,et al.,2022). The virtual world and interactive experiences need to function correctly and smoothly to avoid technical issues that may negatively impact the tourist's experience (Buhalis and Karatay, 2022) . And the level of social interaction provided by the interactive experiences in the Metaverse can affect tourists' satisfaction. The social aspect of the experience can add to the immersive experience and provide opportunities for tourists to connect with others with similar interests (Fan, et al.,2019).

### **3.4.3. Factors influencing tourist behavior for interactive experience in the Metaverse**

According to (Dwivedi,et al., 2023) Tourists who are familiar with technology are more likely to have a positive experience in the Metaverse. The level of technology literacy can impact the ease of use and understanding of the interactive experiences, which can affect tourists' behavior. Age is another factor that influences tourist behavior and experience in the Metaverse. Younger tourists are generally more familiar with technology and may be more likely to use and enjoy interactive experiences in the Metaverse( Dailey,2021).

Cultural background can affect tourists' behavior and experience in the Metaverse. Different cultures may have different expectations and preferences for interactive experiences, and tourism organizations need to consider these differences in their offerings. Tourists' personal interests and preferences play a critical role in their behavior and experience in the Metaverse. Tourists may seek out specific types of interactive experiences that align with their interests, such as gaming or social interaction(Chen and Yao, 2022 ; Buhalis and Volchek,2021).

The accessibility of the Metaverse can impact tourists' behavior and experience (Robinson, 2022). Accessibility refers to the ease of access, navigation, and use of the virtual world and interactive experiences. If the Metaverse is not easily accessible, tourists may be less likely to use it or have a negative experience. Social presence refers to the degree of awareness of others in the virtual world and the sense of being connected with them. The level of social presence can influence tourists' behavior and experience, as they may be more likely to engage in social activities and interact with others in the Metaverse( Buhalis, et al., 2022) .

Additionally, changes in the attitudes and behaviors of other tourists can also influence the attitudes and behaviors of individual tourists (Alyahya and McLean, 2022). For example, if a particular destination becomes popular among tourists, more people may be encouraged to visit the area, resulting in a change in the attitudes and behaviors of the tourists (Kim,2021). It will allow tourists to explore and experience a virtual world that is similar to the real world. Tourists will be able to interact with virtual characters, explore virtual environments, and even purchase virtual goods (Buhalis, et al.,2019). This will give tourists a new way to experience a destination, and it will also allow them to explore places they may not have

been able to visit in the real world. Additionally, Metaverse will allow tourists to connect with other tourists and locals in a virtual space, which could lead to more meaningful interactions and experiences (Ellis and Chang, 2022).

### **3.5. The Implications for the Tourism Industry in adopting the interactive experiences in the Metaverse:**

The Metaverse offers new and exciting opportunities for tourism organizations to engage with their customers in more interactive and immersive ways. Tourists can explore virtual destinations, participate in virtual activities, and connect with other travelers from around the world (Lundmark,2022). The adoption of the Metaverse can provide new revenue streams for the tourism industry. Virtual experiences can be monetized through various means, such as subscription models, virtual goods, and premium content (Meta,2021).

The Metaverse can provide tourism organizations with access to a global audience. This allows them to reach potential customers from all over the world and promote their destinations and experiences to a broader market. The adoption of the Metaverse can promote sustainable tourism by reducing the carbon footprint of travel(Morris,2022). Virtual experiences can be offered as an alternative to physical travel, reducing the negative impact on the environment. And the adoption of the Metaverse requires:

- A robust and reliable infrastructure to support virtual experiences. This includes high-speed internet, powerful servers, and advanced computing resources. Tourism organizations need to invest in this infrastructure to provide a seamless experience for their customers (Morrison,2022).
- Technical expertise in areas such as 3d modeling, virtual reality, and gaming. This can be a significant challenge for tourism organizations, as they may not have the necessary skills in-house (Newton,2021).
- Integration with existing systems, such as booking and payment systems. This can be challenging, as tourism organizations need to ensure that their existing systems can seamlessly integrate with the metaverse (Pero,2022).
- Raises security and privacy concerns. Tourism organizations need to ensure that their customers' personal and financial information is kept secure and that the virtual experiences are free from hacking and other security threats (Pew Research Center,2022).

## **4. Methodology**

### **4.1.Data and variables**

This research depends on a quantitative approach. A questionnaire form was developed to gather primary data, questionnaire items modified from previous research. A 5-point Likert scale questions ranging from 5 (strongly agree) to 1 (strongly disagree) were used to record participants' responses to measure the behavior and preferences of the sample. The questionnaire has 28 questions; Questions were divided into four dimensions according to table (1). The questions are easy to understand, clear, and do not carry more than one meaning. The questions were arranged in a logical order to help the respondents move from question to question easily and avoid being bored. The final section of the questionnaire included demographic questions, such as gender, age, education level, nationality, and the purpose of travel.

**Table (1)The questionnaire Dimensions**

<b>No</b>	<b>The Title of the Dimension</b>	<b>Questions Number</b>
<b>1</b>	Metaverse Technology and tourism	7
<b>2</b>	Interactive Experiences in Metaverse	6
<b>3</b>	Tourist Perception of Metaverse	7
<b>4</b>	Factors influencing tourist behavior in Metaverse	8

The questionnaire was addressed to the tourists. The sample random. Roscoe in 1975 suggested that a sample size greater than 30 and less than 500 is suitable for most behavioral studies (Memon,etal.,2020). The questionnaire was designed on Google Documents, it was distributed online, and collected from May 2022 through August 2022. The questionnaire was distributed to 250 tourists; the number of respondents reached 243 (sample size), the number of incorrect forms was 38 and the number of correct forms is 205. SPSS (26) software is used for data analysis.

#### **4.2.Validity and Reliability of the Variables**

The reliability and validity coefficient Cronbach's alpha was used to measure the extent of consistency between the sample items (Taber,2018). The results showed that there is a correlation between the items of the study axes, as the following table (2) shows the values between (0.816 – 0.991), and they are acceptable to all questions and valid for the stages of statistical analysis, and therefore the results of the study can be generalized to the study population.

**Table (2) The reliability and validity coefficient Cronbach's alpha**

<b>No</b>	<b>The Title of the Dimension</b>	<b>Questions Number</b>	<b>Cronbach's alpha</b>
<b>1</b>	Metaverse Technology and tourism	7	0.816
<b>2</b>	Interactive Experiences in Metaverse	6	0.955
<b>3</b>	Tourist Perception of Metaverse	7	0.982
<b>4</b>	Factors influencing tourist behavior in Metaverse	8	0.991

### 4.3. Analysis of the Demographic of Sample's Respondents

**Table (3) The Demographic of Sample's Respondents**

Variables	Classifications	Frequency	Percentage
<b>1- Age</b>	From 18 To 24	25	12.2%
	From 25 To 34	54	26.3%
	From 35 To 44	47	22.0%
	From 45 To 54	45	22.0%
	From 55 To 64	21	10.2%
	From 65 and over	13	6.3%
	<b>Total</b>	<b>205</b>	<b>100%</b>
<b>2- Nationality</b>	USA	24	11.7%
	Canada	19	9.3%
	Australia	19	9.3%
	France	22	10.7%
	Italy	16	7.8%
	Lebanon	21	10.2%
	UAE	17	8.3%
	India	21	10.2%
	Turkey	17	8.3%
	China	14	6.8%
	Russia	15	7.3%
	<b>Total</b>	<b>205</b>	<b>100%</b>
<b>3- Gender</b>	Male	100	48.8%
	Female	105	51.2%
	<b>Total</b>	<b>205</b>	<b>100%</b>
<b>4- Education Level</b>	Undergraduate	75	36.6%
	Graduate	82	40%
	Postgraduate	48	23.4%
	<b>Total</b>	<b>205</b>	<b>100%</b>
<b>5- The Purpose of Travel</b>	Education	31	15.1%
	Visit New Places	46	22.4%
	Culture Exchange	41	20%
	Recreational	50	24.4%
	Other	37	18%
	<b>Total</b>	<b>205</b>	<b>100%</b>

The data shows that most of the respondents fall within the age range of 25 to 44 years old, comprising 48.3% of the sample. This age group is generally considered to be tech-savvy and open to new technologies, which may make them more receptive to the idea of using the Metaverse to create interactive tourism experiences. In addition, the data shows that the sample is diverse, with no single nationality comprising more than 11.7% of the sample. This suggests that the potential for Metaverse-based tourism experiences may be applicable to a global audience. Also, the sample is almost equally divided between males and females, with 48.8% and 51.2%, respectively. This suggests that the potential for Metaverse-based tourism experiences may appeal to both genders. As shown from table (3) many of the respondents have at least an undergraduate degree, with 76.6% having a graduate or postgraduate degree. This explained that the potential for Metaverse-based tourism experiences may be more appealing to a more educated audience (Mateusz and Gerhard, 2023). And the data shows that the largest group of respondents travels for recreational purposes, comprising 24.4% of the sample, followed by visiting new places with 22.4%. This indicates that the potential for Metaverse-based tourism experiences may be most appealing to those seeking new and novel experiences while traveling (Lee and Kim, 2022).

#### 4.4. Analysis of Respondents' Questionnaire

##### 4.4.1. The First Dimension: Metaverse Technology and tourism

**Table (4) The First Dimension: Metaverse Technology and tourism**

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. deviation	T-Test	
								T	Sig.
I heard of the term "metaverse" before.	5	5	6	114	75	4.214634	0.818164	73.755829	.000
Metaverse will merge the real and virtual worlds.	5	5	6	99	90	4.287805	0.840225	73.066173	.000
I will use Metaverse for daily life activities.	4	4	5	133	59	4.165854	0.735517	81.093913	.000
I am interested in the concept of metaverse-based tourism experiences.	5	5	6	108	81	4.243902	0.827839	73.400031	.000
Metaverse will replace the need to travel in the real world.	60	61	76	4	4	2.175610	0.943705	33.008196	.000
In the future, it wouldn't be surprising to see Metaverse avatars in many travel places.	5	5	6	113	76	4.219512	0.819858	73.688679	.000
Metaverse will facilitate the accessibility of elderly and disabled tourists in travel.	5	5	6	103	86	4.268293	0.835029	73.186230	.000
<b>Mean</b>						<b>4.002091</b>			

**Note:** n=frequency; %=percentage; 1= strongly Disagree 2=Disagree; 3= Neutral; 4= Agree; 5= strongly Agree; M=Mean; SD=Standard Deviation.



According to table (4) was 4.002091, indicating the attitude of the respondents agreed with the statements. A large proportion of tourists have heard of the term "metaverse" before, indicating a growing awareness and interest in this emerging concept. tourists have a positive perception of the potential for the Metaverse to merge the real and virtual worlds. This finding is significant as it highlights the potential for the Metaverse to become a mainstream phenomenon in the future(Taylor, 2022 and eMarketer, 2021). Tourists are open to the idea of using the Metaverse for daily life activities, indicating a potential market for Metaverse-based products and services. Tourists are interested in the concept of Metaverse-based tourism experiences, indicating a potential market for Metaverse-based tourism products and services. This finding is significant as it highlights the potential for the Metaverse to transform the tourism industry by offering new and innovative ways for tourists to experience destinations and attractions. tourists do not believe that the Metaverse will replace the need to travel in the real world(Shen, et al., 2021). This finding is significant as it highlights a potential limitation of Metaverse technology, in that it may not be able to fully replace the experience of physical travel and tourism. Tourists are open to the idea of seeing Metaverse avatars in many travel places in the future, indicating a potential market for Metaverse-based products and services in the tourism industry. This finding is significant as it highlights the potential for Metaverse technology to enhance the tourism experience by offering new and innovative ways to explore destinations and attractions.Tourists are optimistic about the potential for Metaverse technology to facilitate the accessibility of elderly and disabled tourists in travel, indicating a potential market for Metaverse-based products and services that cater to the needs of these groups. This finding is significant as it highlights the potential for Metaverse technology to promote inclusivity and diversity in the tourism industry(Meta,2021).

#### 4.4.2. The Second Dimension: Interactive Experiences in the Metaverse

**Table (5)The Second Dimension: Interactive Experiences in the Metaverse**

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. deviation	T-Test	
								T	Sig.
I would like to use a metaverse to explore destinations and Cultures	4	4	5	114	78	4.258537	0.771100	79.072663	.000
I would like to use a metaverse to interact with others in virtual environments.	5	7	7	107	79	4.234146	0.824743	73.506240	.000
I would like to use a metaverse to learn about a range of topics, such as history, science, and art.	5	5	6	87	102	4.346341	0.852935	72.959967	.000
I would like to use a metaverse to Know more about my favorite brands	6	10	8	88	88	4.278049	0.837688	73.120680	.000
I would like to use a metaverse to try new technology that personalize my experiences	7	6	6	106	80	4.243902	0.827839	73.400031	.000
I would like to use metaverse to try extreme activities like skydiving or jumping that I can't try it in real life	5	7	6	100	87	4.273171	0.836374	73.152060	.000
<b>Mean</b>						<b>4.311382</b>			

The mean score for table (5) was 4.311382, indicating the attitude of the respondents agreed with the statements. The standard deviation ranged from 0.771100 to 0.852935, indicating that the responses were relatively consistent and clustered around the mean. To test the statistical significance of the results, a t-test was conducted for each statement, which produced a significance level of .000 for all statements. The significance level being less than .05 indicates that the results are statistically significant and not due to chance.

According to the table (5), the data suggests that the respondents are interested in using a metaverse for various purposes, including exploring destinations and cultures, interacting with others in virtual environments, learning about a range of topics, knowing more about favorite brands, trying new technology, and trying extreme activities. This finding is significant as it highlights the potential for metaverse technology to offer a wide range of experiences for users. The statistically significant t-test results for all statements further support the validity of the findings (Buhalis and Karatay, 2022).

#### 4.4.3. The Third Dimension: Tourist Perception of Metaverse

**Table (6)The Third Dimension: Tourist Perception of Metaverse**

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. deviation	T-Test	
								T	Sig.
I have a Curiosity about new technologies	5	5	6	104	85	4.263415	0.833654	73.223220	.000
Availability of new and interesting experiences influenced my decision to participate in the metaverse	4	4	5	89	103	4.380488	0.799270	78.470370	.000
Positive recommendations from others influenced my decision to participate in the metaverse	4	4	5	106	86	4.297561	0.782307	78.654198	.000
Interactivity in an experience influenced my decision to participate in the metaverse	4	4	5	101	91	4.321951	0.788245	78.504726	.000
Quality of an experience influenced my decision to participate in the metaverse	4	4	5	122	70	4.219512	0.757712	79.732450	.000
the price effect on my decision to participate in the metaverse	5	5	6	100	89	4.282927	0.838972	73.092060	.000
I think that interactive experiences in the metaverse can immersive needs for tourists.	4	4	5	103	89	4.312195	0.785966	78.554582	.000
<b>Mean</b>						<b>4.331010</b>			

The table (6) shows that the respondents have a curiosity about new technologies (mean = 4.263415), and that the availability of new and interesting experiences (mean = 4.380488), positive recommendations from others (mean = 4.297561), interactivity in an experience (mean = 4.321951), quality of an experience (mean = 4.219512), and the immersive potential of interactive experiences (mean = 4.312195) are essential factors in their decision to participate in a metaverse. However, the price did not seem to be a significant factor (mean = 4.282927). the respondents have a positive attitude towards participating in a metaverse and those various factors, such as the availability of new and interesting experiences, quality, and interactivity, are critical in their decision-making process(Pew Research Center,2022).

#### 4.4.4. The Fourth Dimension: Factors influencing tourist behavior in Metaverse

**Table (7)The Fourth Dimension: Factors influencing tourist behavior in Metaverse**

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. deviation	T-Test	
								T	Sig.
the metaverse has Security concerns such as hacking, phishing, fraud to improve the tourist experience	4	4	5	103	89	4.312195	0.785966	78.554582	.000
the metaverse has Privacy concerns such as data collection, sharing personal information to improve the tourist experience	4	4	5	104	88	4.307317	0.784779	78.584443	.000
the metaverse can address Dependence on technology such as addiction, loss of face-to-face communication skills to improve the tourist experience	4	4	5	102	87	4.273171	0.836374	73.152060	.000
the metaverse can address Social isolation concerns such as lack of physical human interaction, mental health effects to improve the tourist experience	4	4	5	97	95	4.341463	0.792420	78.443638	.000
Strict regulations and laws should be in place to ensure the safety and privacy of tourists in the metaverse	4	4	5	102	90	4.317073	0.787121	78.528020	.000
Clear and transparent privacy policies should be in place to ensure the safety and privacy of tourists in the metaverse	4	4	5	97	95	4.341463	0.792420	78.443638	.000
Education and awareness campaigns for users should be in place to ensure the safety and privacy of tourists in the metaverse	5	5	6	99	90	4.287805	0.840225	73.066173	.000
I would like to have control over the use of your personal information in the metaverse as a tourist	4	4	5	106	86	4.297561	0.782307	78.654198	.000
<b>Mean</b>						<b>4.332927</b>			

The table (7) indicates that the respondents have concerns about security (mean = 4.312195) and privacy (mean = 4.307317) in the metaverse. This finding is significant as it highlights the need for the metaverse providers to address these concerns to improve the tourist experience. Additionally, the respondents believe that clear privacy policies (mean = 4.341463), strict regulations (mean = 4.317073), and education campaigns (mean = 4.287805) should be in place to ensure the safety and privacy of tourists in the metaverse.

Furthermore, the respondents believe that the metaverse can address dependence on technology (mean = 4.273171) and social isolation concerns (mean = 4.341463) to improve the tourist experience. This finding highlights the potential of the metaverse to offer unique and immersive experiences while addressing some of the negative impacts of technology.

The respondents also indicate that they would like to have control over the use of their personal information in the metaverse (mean = 4.297561). This finding suggests that metaverse providers should offer users more control over their personal information to improve user trust and satisfaction.

The security and privacy concerns are significant factors influencing tourist behavior in the metaverse. Also, clear privacy policies, strict regulations, and education campaigns should be in place to ensure the safety and privacy of tourists in the metaverse. Additionally, the metaverse has the potential to address dependence on technology and social isolation concerns to improve the tourist experience. Finally, users would like to have more control over the use of their personal information in the metaverse (Buhalis and Karatay, 2022).

## 5. Results

- The Metaverse has the potential to transform the tourism industry but requires further exploration and development to address the challenges and fully realize its potential.
- Interactive experiences have the potential to enhance the tourism experience and create lasting memories for visitors.
- The effectiveness of interactive experiences in the Metaverse is influenced by several factors. User engagement, personalization, authenticity, and immersion and it is important for tourism organizations and businesses to carefully consider these factors when creating interactive experiences in the Metaverse.
- Tourist behavior and motivations in the Metaverse are driven by a desire for novelty, escapism, social interaction, learning, and engagement with brands.
- The perceived authenticity, engagement, perceived value, personalization, technical quality, and social interaction are all critical factors that can impact tourists' satisfaction with the interactive experiences.
- Technology literacy and age are important factors that can impact tourists' ease of use and understanding of the interactive experiences.
- The adoption of the Metaverse in the tourism industry has significant implications for tourism organizations. It offers new revenue streams, global reach, and promotes sustainable tourism. However, it also requires a robust and reliable infrastructure, technical expertise, integration with existing systems, and addressing security and privacy concerns. Tourism organizations need to carefully consider these implications and invest in the necessary resources to provide a seamless and secure experience for their customers. By adopting the Metaverse, tourism organizations can provide customers with new and innovative ways to experience destinations and activities, thus enhancing their overall satisfaction and loyalty.



- Tourists have a growing awareness and positive perception of the potential for the Metaverse to tourism.
- By embracing the Metaverse, the tourism industry may be able to enhance the tourism experience and attract a wider audience, while also promoting sustainability and inclusivity.
- Metaverse providers and tourism organizations to address the security and privacy concerns of tourists and offer more control over their personal information to improve user trust and satisfaction.

## **6. Recommendations**

- Conduct research to understand the potential of the Metaverse: Tourism organizations should conduct research to understand the potential of the Metaverse and how it can be leveraged to enhance the tourism experience. This can involve studying trends, analyzing case studies, and conducting surveys to understand the needs and preferences of tourists.
- Develop partnerships with Metaverse providers: Tourism organizations should develop partnerships with Metaverse providers to access the latest technology and expertise. This can involve collaborating with developers, designers, and other experts to create innovative and immersive experiences for tourists.
- Invest in the necessary infrastructure: The Metaverse requires a robust and reliable infrastructure to function effectively. Tourism organizations should invest in the necessary infrastructure to support the development and deployment of Metaverse experiences. This can involve investing in high-speed internet, cloud computing, and other technologies.
- Train staff and stakeholders on Metaverse technology: Tourism organizations should train their staff and stakeholders on Metaverse technology to ensure they have the skills and knowledge to create and deploy immersive experiences for tourists. This can involve providing training sessions, workshops, and other forms of education.
- Collaborate with other organizations: Collaboration with other organizations can help tourism organizations to leverage the full potential of the Metaverse. This can involve working with other tourism organizations, local businesses, and technology companies to develop and deploy Metaverse experiences that benefit all stakeholders.
- Consider ethical and social implications: The Metaverse has ethical and social implications that need to be considered by tourism organizations. Organizations should ensure that their Metaverse experiences are ethical, inclusive, and promote sustainable tourism practices.
- Stay up-to-date with technological advancements: The Metaverse is a rapidly evolving technology, and it is important for tourism organizations to stay up-to-date with the latest advancements. Organizations should monitor technological advancements and innovations in the Metaverse space and adapt their strategies accordingly.
- Evaluate and measure the impact of Metaverse experiences: It is important for tourism organizations to evaluate and measure the impact of their Metaverse experiences. This can involve collecting data on user engagement, satisfaction, and other metrics to understand the effectiveness of their Metaverse experiences.
- Secure funding for Metaverse projects: Developing Metaverse experiences can be costly, and tourism organizations may need to secure funding to support their projects. Organizations should explore funding opportunities, such as grants, sponsorships, and partnerships, to support their Metaverse projects.

- Create themed environments: Tourism organizations can create themed environments in the Metaverse that cater to the interests and preferences of their target audience. For example, an organization that promotes adventure tourism can create a virtual environment that simulates extreme sports like rock climbing or bungee jumping.
- Provide personalized experiences: Tourism organizations can provide personalized experiences in the Metaverse that cater to the needs and preferences of individual tourists. For example, a virtual concierge service can be used to recommend personalized itineraries based on the tourist's interests and preferences.
- Incorporate gamification: Tourism organizations can incorporate gamification in the Metaverse to make the experience more engaging and interactive. For example, a virtual treasure hunt can be created that takes tourists on a journey through the destination, with clues and challenges that must be solved to progress.
- Experiment with emerging technologies: Tourism organizations can experiment with emerging technologies in the Metaverse to create unique and innovative experiences that push the boundaries of what is possible. For example, a virtual reality experience that incorporates haptic feedback technology can be created that provides tourists with a fully immersive experience.
- Focus on storytelling: Interactive experiences should focus on storytelling to create a more engaging and memorable experience for tourists. This can involve creating a narrative that takes users on a journey through the destination or activity being promoted.
- Provide opportunities for social interaction: Interactive experiences should provide opportunities for social interaction to enhance user engagement. This can involve incorporating social media or chat features to enable users to connect with other tourists or share their experiences.
- Create a seamless user experience: Interactive experiences should be easy to use and navigate to create a seamless user experience for tourists. This can involve designing intuitive interfaces, providing clear instructions, and ensuring that the technology is user-friendly.
- Test and evaluate the experience: Interactive experiences should be thoroughly tested and evaluated to ensure that they meet the needs and preferences of users. This can involve conducting user testing, collecting feedback, and analyzing data to identify areas for improvement.
- Develop clear privacy policies: Tourism organizations and Metaverse providers should develop clear privacy policies that outline how user data is collected, used, and protected. Privacy policies should be easily accessible and understandable for users.
- Implement strict regulations: Metaverse providers and tourism organizations should implement strict regulations to protect user data and prevent unauthorized access. This can involve complying with data protection laws and regulations and implementing appropriate security measures to prevent data breaches.
- Educate users on security and privacy: Tourism organizations and Metaverse providers should educate users on security and privacy to raise awareness and encourage safe online behavior. This can involve providing resources, offering training sessions, and incorporating security and privacy education into the user experience.
- Provide users with control over their personal information: Tourism organizations and Metaverse providers should provide users with more control over their personal information. This can involve providing users with the ability to manage their privacy settings, delete their data, and opt-out of certain data collection practices.

- Monitor and respond to security threats: Metaverse providers and tourism organizations should monitor for security threats and respond quickly to prevent data breaches or other security incidents. This can involve implementing real-time monitoring systems, conducting regular security audits, and having a clear incident response plan in place.
- Incorporate privacy-enhancing technologies: Metaverse providers and tourism organizations should incorporate privacy-enhancing technologies, such as encryption, into their systems to protect user data and enhance user privacy.
- Conduct regular privacy and security assessments: Metaverse providers and tourism organizations should conduct regular privacy and security assessments to identify potential vulnerabilities and address them proactively.

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## دور الميتافيرس في خلق تجربة تفاعلية للسائحين

منه الله عادل

قسم الدراسات السياحية - المعهد المصري العالي للسياحة والفنادق - القاهرة

### المخلص

سيقدم الميتافيرس إمكانيات جديدة لصناعة السياحة لخلق تجارب تفاعلية للسائحين. تستكشف هذه الورقة إمكانيات تقنية الميتافيرس لتوفير تجارب غامرة وجذابة للسائحين ، والتعرف على التحديات والفرص التي تطرحها هذه التكنولوجيا. تم اعتماد نهج كمي ، وتم تطوير استمارة استبيان. بلغ حجم العينة ٢٤٣ سائحا ، تم اختيارهم عشوائيا. تم تحليل البيانات باستخدام برنامج SPSS (٢٦). تشير النتائج إلى أن الميتافيرس لديه القدرة على تحويل صناعة السياحة من خلال تعزيز تجربة السياحة وخلق ذكريات دائمة للزوار. حيث تتأثر فعالية التجارب التفاعلية في الميتافيرس بعدة عوامل بما في ذلك تفاعل المستخدم وتوفير تجارب متخصصة تتميز بالأصالة والتفاعل. وأن الدافع وراء سلوك السائح ودوافعه في الميتافيرس هو الرغبة في التجديد والهروب والتفاعل الاجتماعي والتعلم والمشاركة مع العلامات التجارية. كما تسلط الدراسة الضوء أيضا على الحاجة إلى معالجة مخاوف الأمان والخصوصية وتزويد المستخدمين بمزيد من التحكم في معلوماتهم الشخصية. توصي الدراسة بالعديد من الاستراتيجيات للاستفادة من إمكانيات الميتافيرس في صناعة السياحة ، بما في ذلك التعاون بين الجهات واخذ الاعتبارات الأخلاقية والاجتماعية في الاعتبار عند تقديم التجارب السياحية وتقييم تأثير تجارب الميتافيرس. توصي الدراسة أيضا بوضع سياسات خصوصية واضحة، وتنفيذ لوائح صارمة ، وتنقيف المستخدمين بشأن الأمان والخصوصية ، ودمج تقنيات تعزيز الخصوصية لحماية بيانات المستخدم وتعزيز خصوصية المستخدم مما يوفر تجارب سياحية تفاعلية غامرة وأمنة.

### معلومات المقالة

#### الكلمات المفتاحية

الميتافيرس؛  
التجارب التفاعلية؛  
العوامل الافتراضية؛  
التكنولوجيا.

#### (JAAUTH)

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