NAVIGATING THE METAVERSE: UNRAVELING ITS IMPACT ON TOURISM

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Abstract

This study aims to explore the influence of perceived usefulness, perceived ease of use, social norms and attitudes towards the use of metaverse on the behavioural intention to use Metaverse in tourism, providing valuable insights into the potential impact of metaverse on the future of the tourism industry. To assess the influence of the variables, a questionnaire was administered to 50 participants from generations X, Y and Z with a gender distribution of 54% male and 46% female participants. The survey demonstrated good internal reliability and validity. The results indicate that perceived usefulness, perceived ease of use and attitude have an impact on participants' behavioural intentions. However, the influence of social norms on behavioural intention was not found to be significant in this study. These results provide valuable insights into understanding the factors that influence people's behavioural intentions when using metaverses in tourism. Further studies with more refined questions and larger samples need to be conducted.

Keywords: metaverse, tourism, immersive reality, digital experiences.

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1. Introduction

The Metaverse is a widely used term for a fully immersive digital environment, a virtual shared space created by the convergence of multiple virtual environments and augmented reality technologies (Chowdhury and Frank, 2021). Furthermore, the metaverse is defined as a fully realised virtual world populated by digital representations of people, objects, actions and environments, accessible across a variety of devices (Kharif, 2021). The term “Metaverse" is composed of the word “meta” with roots in Greek (μετά), meaning either “beyond” and “after”, while the second word “verse” comes from the word universe and refers to a singular plane of existence on which everything exists (Ticak, 2022). The term was originally coined by Neal Stephenson in his 1992 science fiction novel “Snow Crash” (Stephenson, 1992). The Metaverse can be used for a variety of applications, including entertainment, education, industry and tourism. Essentially, it will transfer the Internet into a 3-dimensional form, marking the beginning of Web 3.0. (Dwivedi et al., 2022; Maghaydah et al., 2024; Martínez-Gutiérrez et al., 2024).

The Metaverse in tourism denotes the exploration and engagement within digitally rendered, expansive worlds that offer immersive travel encounters through virtual avatars (Ying et al., 2022). In the Metaverse, individuals can transcend the boundaries of the physical world navigating freely through virtual landscapes. Activities such as virtual concerts, digital commerce, festivals and exhibitions thrive within this digital domain (Wang et al., 2022). Metaverse tourism emerges as a potentially sustainable form of travel that mitigates the environmental and ecological impacts associated with conventional tourism (Go and Kang, 2022). Furthermore, socially marginalised groups, including individuals with disabilities or mobility impairments, find an inclusive alternative for travel in the metaverse. Overall, the metaverse is well on its way to becoming an integral part of the tourism sector and fostering innovative tourism experiences (Gursoy et al., 2022).

Nevertheless, scholarly inquiry into the Metaverse in tourism is still in its infancy, the majority studies within tourism and hospitality studies addressing the metaverse have focussed on theoretical frameworks and conceptual discussions (e.g. Go and Kang, 2022; Gursoy et al., 2022; Buhalis et al., 2023). Although tourism researchers have repeatedly addressed the behavioural intention to engage in

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travel activities and the factors that influence it, little research has been conducted on the behavioural intention to use Metaverse in tourism. A recent study by Mandal et al. (2024) sheds light on the key factors such as perceived usefulness, enjoyment and ease of use that drive Gen Z's engagement and satisfaction with Metaverse tourism and ultimately influence their propensity to share their experiences via word of mouth.

This study addresses this gap and focuses on the factors related to the intention to use Metaverse in tourism. Therefore, the paper explores the influence of four variables - perceived usefulness, perceived ease of use, social norms, attitude towards using - on the intention to use Metaverse in tourism will be analysed using a survey instrument. This study will provide valuable insights into the evolving landscape of travel and leisure experiences as well as the potential impact of metaverse on the future of the tourism industry.

2. Literature review and hypothesis development

2.1 The impact of Metaverse on the competitiveness of tourism destinations

The emergence of the Metaverse could have a profound impact on the competitiveness of tourism destinations, reshaping the dynamics of the industry and presenting both opportunities and challenges. As destinations adapt to this new digital landscape, they can take advantage of the Metaverse to enhance their competitive advantage in several ways (Bec et al., 2021; Clegg, 2022).

Firstly, the Metaverse allows destinations to showcase their unique offering in a highly immersive and interactive way. By creating virtual replicas of their attractions, destinations can give potential visitors a taste of what to expect and entice them to choose one destination over another (Meta, 2022). For example, a destination featuring a tropical island can create a virtual environment showcasing the pristine beaches, crystal clear waters and vibrant marine life, allowing users to virtually swim with dolphins or explore underwater coral reefs. Such immersive experiences help destinations to stand out from the competition and differentiate themselves (Buhalis et al., 2020; Hollensen et al., 2022).

Furthermore, the Metaverse also opens the door to innovative destination marketing strategies. With virtual marketplaces and brand experiences, destinations can create captivating narratives and engage their audiences on a deeper level. They can collaborate with local businesses, artists and content creators to develop unique virtual experiences that highlight the destination's cultural heritage, traditions and local cuisine. By tapping into the creativity and talent in their communities, destinations can create compelling virtual content that attracts and captivates potential visitors (Buhalis et al., 2022).

These captivating immersive marketing endeavors not only serve to increase the visibility of destinations, but also create deep emotional connections and leave an imperishable impression in the minds of potential visitors. (Buhalis et al., 2022). By diving directly into the depths of the Metaverse, destinations can craft experiences that transcend the conventional eliciting a sense of wonder and fascination. These virtual encounters give destinations remarkable memorable value and make them irresistible to potential travellers. Moreover, the Metaverse heralds an era of unprecedented possibilities, allowing destinations to transcend geographical boundaries. (Ramkissoon and Mavondo, 2021) In traditional tourism, factors such as distance, travel costs and time constraints often limit the possibilities for exploration. However, in the boundless expanse of virtual space, these barriers diminish, giving destinations the remarkable ability to engage with a global audience at any given moment. Thus, a city that is not on the mainland can seamlessly transport its users to its vibrant streets, its historic landmarks and its lively cultural festivals, offering an authentic and immersive taste of its distinctive atmosphere. By utilising the wide reach of the Metaverse, destinations can penetrate new frontiers, tapping into untapped markets and captivating the attention of virtual tourists who can subsequently convert into real visitors (De Felice et al., 2023). This symbiotic connection between the virtual and physical realms allows destinations to cultivate a flourishing ecosystem where the appeal of the Metaverse paves the way for increased tourism revenue and sustainable growth. The potential to transcend borders and captivate audiences around the world offers destinations a unique opportunity to position themselves at the forefront of the tourism industry and harness the transformative power of the Metaverse to fuel their prosperity. (Davis et al., 2009; Damar, 2021).

Furthermore, due to its multiple benefits, the Metaverse serves as a catalyst for promoting cooperation and creating partnership opportunities among diverse tourism destinations. Through the creation of interconnected virtual environments, destinations are given the ability to embark on joint marketing campaigns, host virtual events or stage immersive thematic experiences. (Kuang and Tan, 2021). Consider, for instance, a collective of neighbouring destinations that are united in their vision. Together, they can seamlessly fashion a virtual tour route, guiding users on an engaging journey through multiple locations with rich cultural offerings and captivating attractions. Such collaborative endeavours not only augment the visitor experience, but also serve to increase the collective promotion and visibility of the participating destinations (Surovaya et al., 2020). Gathering their invaluable resources and harnessing their individual expertise, these destinations are in a unique position to harness the formidable power of the Metaverse elevating their competitive prowess in unison. The harmonious convergence of their distinctive strengths creates a synergy that drives their collective growth and sets them apart in the dynamic landscape of global tourism. Through these shared initiatives, destinations can forge deep-rooted connections, cultivate a spirit of cooperation, and collectively capitalise on the limitless opportunities offered by the Metaverse. (Fan et al., 2019).

In spite of the myriad advantages bestowed by the Metaverse offers to tourism destinations, it concurrently introduces a number of challenges that demand careful consideration. Foremost among these challenges is the imperative requirement for a robust technological infrastructure and a high level of digital literacy. Destinations find themselves compelled to invest substantially in cutting-edge technology, seamless connectivity and comprehensive training programs to effectively build and maintain their virtual presence. (Martínez-Gutiérrez et al., 2024) This requires not only significant financial resources, but also a pool of technical expertise and unwavering support to ensure a flawlessly immersive user experience. In addition, destinations must skilfully navigate the intricate landscape of privacy and security concerns that pervade the virtual realm. As they journey through the Metaverse, protecting user data is paramount to safeguarding users' personal information from unauthorised access or misuse (Meta, 2023). Simultaneously, destinations must also remain steadfast in protecting their intellectual property rights and preserve the unique attributes and assets that define their identity. Striking a delicate balance between accessibility and security becomes essential as tourism destinations seek to harness the potential of the Metaverse without compromising the integrity of their digital ecosystem (Deng et al., 2019).

Confronting these challenges, destinations can position themselves at the forefront of the digital revolution by seamlessly integrating the physical and virtual realms to offer their visitors an unparalleled and immersive visitor experience. By leveraging technological advances, prioritising privacy and security, and fostering a culture of digital literacy, destinations can gain a lasting competitive edge within the dynamic landscape of the Metaverse (Deng et al., 2019).

Finally, the Metaverse is having a profound influence on the competitive landscape of destinations by enabling them the ability to showcase their distinctive offerings, develop immersive marketing strategies, expand their global reach and cultivate collaboration between destinations. By the embracing the opportunities inherent in the Metaverse, destinations can position themselves as pioneering, captivating, and accessible tourism hotspots. Indeed, it is imperative for destinations to confront technological hurdles and ensure robust data security protocols to fully harness the potential of the Metaverse while upholding their competitive advantage in the ever-evolving tourism industry (Deng et al., 2019).

2.2 Economic significance of Metaverse in tourism

The Metaverse offers enormous economic potential for tourism by creating new revenue streams through virtual experiences and product sales. Companies can generate revenue through ticket sales, subscriptions, the sale of virtual goods and advertising. For example, destinations can offer virtual tours for a fee, attracting visitors from all over the world. The sale of virtual products, such as souvenirs, further boost revenue. This expands the opportunities for both established players and new entrepreneurs fostering growth of the tourism sector.

The Metaverse's development demands a range of skills, including virtual reality design, programming, content creation, marketing, and customer support. As the industry grows, job opportunities in these fields increase, contributing to economic growth (De Felice et al., 2023).

Industry and economic experts have provided varying estimates regarding the potential valuation and addressable market size of the Metaverse's addressable market. In the short term, projections suggest a range from approximately $ 800 billion dollars to over 2 trillion dollars in the next few years (Bloomberg Intelligence, 2021). Long-term estimates indicate a wide span from around 3 trillion dollars to 30 trillion dollars if the metaverse is widely accepted. The most optimistic estimate even surpasses $ 80 trillion dollars (Speights, 2021). While several sources anticipate that the metaverse could evolve into a multi-billion-dollar industry, there is no consensus on how long it will take to mature (Kim et al., 2020; Huang, 2021; Logan, 2021). However, a comprehensive report by economists at Analysis Group, a well-known international economic consulting firm, compares the potential impact of the metaverse's adoption to that of mobile technology. They suggest that if the metaverse develops in a similar way, it could contribute around 2.8% to global GDP. Assuming the metaverse starts to roll out in 2022, it could make a remarkable $3.01 trillion contribution to global GDP by 2031. Examining the regional breakdown, the Metaverse's share of GDP in year 10 is estimated at 2.3% for Asia-Pacific, 0.9% for Canada, 1.7% for Europe, 4.6% for India, 5.0% for Latin America, 6.2% for the Middle East, North Africa and Turkey, 1.8% for Sub-Saharan Africa and 2.3% for the United States (Meta, 2022). It is important to note that these estimates only take into account the Metaverse's contribution to GDP and do not account for potential displacement of GDP from other industries during the 10-year period. Therefore, they can be seen as a conservative lower bound for the Metaverse's share of 10th year GDP (Robinson and Christensen, 2021). The integration of the Metaverse into the tourism industry brings with it a wealth of potential revenue and marketing opportunities, revolutionising the way destinations engage with travellers. The immersive and interactive nature of the Metaverse unlocks exciting possibilities for generating income and the promotion of tourism experiences (Vidal-Tomás, 2023).

2.3 The behavioural intention to use Metaverse in tourism

Behavioural intention, as defined by Warshaw and Davis (1985), refers to the degree to which individuals show conscious plans to engage or not exhibit a particular behaviour in the future. It has the potential to influence the actual usage of a particular technology and has been found to have a positive impact on usage behaviour (Davis, 1989). The construct of behavioural intention is part of the Theory of Reasoned Action, which serves as a proximal determinant of actual behaviour, reflecting an individual's readiness and willingness to engage in a particular action. Warshaw and Davis (1985) further elaborate that behavioural intention is characterised by a individual's conscious formulation of plans to perform or not perform a particular behaviour in the future. This intention can affect the individual’s usage of a particular technology and has been shown to have a positive effect on the behaviour usage (Davis, 1989).

In the realm of tourism, researchers have consistently focused on tourists' behavioural intention. Researchers discuss what travellers' intention has to do with their commitment to travel-related actions. It represents the subjective probability of whether a customer will take certain actions associated with a tourism service. Broadly speaking, behavioural intention to engage in travel activities is a combination of one's preferences, schedule, investment of time and money, willingness and wish to travel. It includes the inclination, effort and readiness to embark on a travel experience (Song et al, 2021).

The Technology Acceptance Model (TAM) is a very influential model designed to assess the technology acceptance. The TAM model was showcased by Fred Davis in his doctoral thesis in 1986. At the outset it was made as a revision of the Theory of Reasonable Action model. The TAM is well suited for assessing users’ acceptance of systems or technologies by users (Lai, 2017). It focuses on two key constructs that influence a individual's intention to use and accept a new technology: perceived ease of use and perceived usefulness (Davis, 1989). TAM is widely recognised as a valuable framework and continues to evolve with the growing body of research exploring the constructs that influence a person's intention to adopt and embrace new technology. Perceived usefulness refers to the degree to which users perceive certain information technology to enable them to achieve higher work performance. Perceived ease of use describes whether a certain given information system is effortless to use, meaning that it

requires minimal effort. Several researchers have investigated the relationships among perceived ease of use, perceived usefulness and the level of embracing novel technologies (Pavlou, 2003; Hsu and Lu, 2004 and Saeed et al., 2009). Kim et al. (2008) conducted a study using the TAM framework, Kim et al. (2008) investigated the factors influencing tourists' embrace of mobile devices and found that within tourism-related activities, behavioural intention to utilize mobile devices were positively influenced by TAM constructs. Furthermore, Kaplanidou and Vogt (2006) focused their attention on incorporating the Technology Acceptance Model (TAM) to gain deeper insights into consumer behaviour regarding user experiences with virtual reality technology in tourism. Huang et al. (2013) conducted a study exploring the influence of perceived ease of use and perceived usefulness on individuals' interest in travelling to a location after being immersed in a digital tourism site. Their findings indicated behavioural intention to visit a tourism location were dictated by their perception of the virtual site's usefulness. In their research, Kim et al. (2020) discovered the fact that the behavioural intention of individuals engaged in digital experiences in tourism activities encompassed the intention to revisit, recommend and physically travel to the depicted location. Marasco et al. (2018) used a virtual representation of an authentic cultural heritage site to investigate the influence of digital experiences in shaping individuals' goals towards the presented site. Their findings revealed that participants wanted to physically visit the site, advocate it to others and seek further information about the actual location based on their virtual reality (VR) encounter. Jung et al. (2017) captured the behavioural intentions to visit a particular destination through an experience with a VR application. Their study highlighted that participants expressed the intention to repeat the same experience and recommend it to others as a means of unwinding and gain a deeper comprehension of the destination's allures.

Additional research findings validate the acceptance of digital technologies and their positive impact on the decision-making process when travelling, as well as fostering optimistic attitude towards travel destinations (Griffin et al., 2017). Therefore, considering behavioural intention is a comprehensive construct that includes the intention to utilize digital experiences in tourism, to endorse Metaverse tourism experiences and to financially support the use of Metaverse applications in the context of tourism. In a study conducted by Kim et al. (2020), which proposed a conceptual framework to examine the impact of hedonistic behaviourism exhibited by individuals who engaged in VR tourism activities on their continued usage, it was found that perceived usefulness exerted a significant indirect influence on visitors' behavioural intentions to continue using VR activities related to tourism further down the road. Likewise, there was also a research on the motivation for an individual's consumption habits when travelling, this research was conducted by (Griffin et al., 2017), which clearly highlighted the Technology Acceptance Model is useful when trying to comprehend the motivations as well as their level of acceptance after using VR technology to experience a certain travel site, the study highlights that perceived usefulness and perceived ease of use exhibit substantial effects on individuals' behavioural intention to utilize digital experiences for travel planning. Schiopu et al. (2021) and Schiopu et al. (2022) observed a positive influence of the VR-TAM construct and perceived sustainability on the intention to utilize VR in tourism in the context of the COVID-19 outbreak.

Taking into account that the Metaverse offers virtual experiences in the form of VR, AR (augmented reality) or MR (mixed reality), this research provides an understanding of the intention to use the metaverse for tourism activities using Technological Acceptance Model (TAM) constructs (perceived ease of use, perceived usefulness) approved for other digital experiences.

Therefore, in this paper we propose the following hypotheses:

- *H1. Perceived usefulness of Metaverse exerts a positive influence on behavioural intention to use Metaverse in tourism-related activities*
- *H2. Perceived ease of use of Metaverse exerts a positive influence on behavioural intention to use Metaverse in tourism-related activities*

Social norms contain the concept of "norms" is interdisciplinary, with various academic fields such as sociology, behavioural economics, philosophy and social psychology employing slightly different terminology. It is a collectively shared belief about what is customary among others (typical behaviour) and what is expected of individuals within the group (appropriate behaviour). Social norms are typically reinforced by social approval or disapproval (Ajzen and Fishbein, 1980). While there are more formal

and intricate definitions of norms, the aforementioned explanation suffices for our purposes. An attitude is an individual construct that represents a personally held belief that includes an evaluative aspect that indicates whether something is perceived as good, bad, exciting, boring, sacrilegious, disgusting, and so on. Furthermore, individuals may also possess factual beliefs concerning reality and the physical world that may or may not be accurate (LaMorte, 2022).

Social norms initially were introduced in the Theory of Reasoned Action (Ajzen and Fishbein, 1980). Social Norms approach aims to comprehend the influences of the environment and interpersonal factors, particularly the impact of peers, with the objective of instigating behavioural change. It places significance on perceived standards, which represent the prevailing conventions within a group, in shaping individual conduct. Discordance between perceived and actual standards can lead to misinterpretations, which the theory attempts to correct. By addressing misinterpretations, the Social Norms strives to diminish problematic behaviour. Social norms interventions, such as media initiatives, disseminate accurate information concerning peer group norms in order to correct misperceptions. These interventions involve various stages, including data collection, selection and testing of normative messages, and evaluation of their efficacy. While the Social Norms has its limitations, such as the initial scepticism of participants and the requirement for reliable data, it can be effective in influencing individual behaviour by focusing on misconceptions at the group level. Funding for social norms media campaigns is provided by government agencies, foundations, non-profit organisations and sometimes the private sector. Effective social norms interventions encompass targeted messages tailored to vulnerable populations, supported by extensive research and data collection. Interactive formats that actively engage target audiences enhance the outcomes of interventions. (LaMorte, 2022)

Social norms and attitudes have a significant impact on the intention to use a particular product, service or technology. Social norms create expectations and guide the behaviour of individuals and influence their decision-making process. The influence of others, known as social influence, plays a crucial role in shaping attitudes and intentions. Perceived social benefits, such as social status or improved connections, can positively influence adoption intentions. Conversely, negative social attitudes or stigmatisation can prevent adoption. Cultural factors also play a role, as norms and values differ across societies. Understanding these dynamics is essential for promoting technology adoption and addressing barriers posed by social norms and attitudes (LaMorte, 2022).

Therefore, in this paper we propose the following hypotheses:

- *H3. Social norms exert a positive influence on behavioural intention to use Metaverse in tourism-related activities*
- *H4. Attitude towards using Metaverse exerts a positive influence on behavioural intention to use Metaverse in tourism-related activities*

3. Research methodology

3.1 Research design

The research methodology used in this study was based on primary sources, whereby a survey instrument was designed to examine the formulated hypotheses (H1-H4). The measurement instrument entailed five constructs: Perceived usefulness of Metaverse in tourism (PU) (comprising six items), Perceived ease of use of Metaverse in tourism (PEOU) (consisting of seven items), Social Norms (SN) (comprising three items), Attitude towards using Metaverse in tourism (AT) (comprising five items) and behavioural intention to use Metaverse in tourism (BI) (comprising four items). These items were carefully rephrased to specifically address the utilization of the Metaverse in activities related activities. To measure responses, a seven-point Likert scale was used for all construct questions. The constructs are presented in table 1.

Additionally, the survey encompassed queries relating to the demographic and socioeconomic characteristics, including gender, age, education, employment status and income. These inquiries were effectively measured using scales, while three closed-ended questions featuring preselected responses (yes/no) were integrated to ascertain prior experiences with digital platforms (VR, AR, MR).

Table 1. Constructs and items of the model

Construct	Code	Item	Code Item	Nr items
Perceived Usefulness	PU	Using the Metaverse will be perceived as important when planning your travels to a destination.	PU1	6
		Using the Metaverse will be useful during your travel experiences.	PU2	
		Using the Metaverse would save you time while traveling, and prompt you to spend more time exploring and enjoying your destination.	PU3	
		The Metaverse will reduce the complexity of your travel objectives and make your trips more efficient, and let you plan more effectively your trips.	PU4	
		The Metaverse can be used to enhance your travel experiences and engage in activities that were not possible before.	PU5	
		The Metaverse would make you achieve a more enjoyable and immersive travel experience.	PU6	
Perceived ease of use	PEOU	Learning how to use the Metaverse for travel purposes will be easy, and you will feel capable of utilizing it.	PEOU1	7
		Learning how to use the Metaverse effectively and efficiently for travel-related tasks will be easy.	PEOU2	
		It would take a small amount of time to learn how to use the Metaverse for travel, and you would feel comfortable using it after a short training period?	PEOU3	
		The navigation the Metaverse system menus and functions for travel-related activities will be easy, and you will be able navigate it without assistance.	PEOU4	
		The Metaverse technology's interface for travel is intuitive and user-friendly and that the instructions for using the Metaverse for travel purposes are clear and easy to follow.	PEOU5	
		I have the necessary infrastructure, policies, and procedures in place to support the use of the Metaverse for travelling.	PEOU6	
		I can provide the necessary resources to effectively use the Metaverse for travel purposes for enhanced travel experiences.	PEOU7	
Social Norms	SN	People in my social circle generally approve of using the Metaverse for tourism purposes, such as exploring virtual destinations or participating in virtual tours.	SN1	3
		I feel social pressure from my peers or social groups to use the Metaverse for tourism-related activities, as it is seen as a popular and accepted practice among them.	SN2	
		Social norms within my community endorse and encourage the use of the Metaverse for tourism, considering it a modern and innovative way to experience travel destinations.	SN3	
Attitude towards using	AT	I hold a positive attitude towards using the Metaverse for tourism, as I believe it offers unique and immersive experiences that enhance the overall travel journey.	ATU1	5
		Using the Metaverse is superior for travelling compared to other available MR travel alternatives.	ATU2	
		I perceive the use of the Metaverse in tourism as an exciting and innovative way to explore virtual destinations, providing me with opportunities to discover new cultures and attractions.	ATU3	
		I believe that utilizing the Metaverse for tourism can complement traditional travel experiences, offering a	ATU4	

Construct	Code	Item	Code Item	Nr items
		convenient and cost-effective way to visit destinations that may be difficult to access physically.		
		I view the Metaverse as a valuable tool for enhancing my travel experiences.	ATU5	
Behavioural intention to use	BI	I intend to use the Metaverse for tourism-related activities, such as exploring virtual destinations or participating in virtual tours.	BI1	4
		I am likely to utilize the Metaverse as a means of experiencing travel destinations and engaging in tourism-related activities.	BI2	
		Factors such as convenience, realism of virtual experiences, and availability of virtual travel options significantly influence my intention to use the Metaverse for tourism purposes.	BI3	
		I would recommend using Metaverse in tourism-related activities to my friends and others	BI4	

Note: All items are measured on a Likert scale of 1–7: 1 = strongly disagree, 7 = strongly agree)
Source: own computation

3.2 Sample

In the month of June 2023, more precisely from 1 June to 26 June, the questionnaire was distributed to a total of 50 participants in Romania. The participants were 23 women and 27 men, all of whom were at least 17 years old. To facilitate data collection, the survey was created as a Google Docs form and distributed through various online channels, including Facebook and WhatsApp. These digital platforms served as effective mediums to reach potential respondents and collect their valuable insights.

Although the sample size of 50 participants can be regarded as relatively small, it can still be considered satisfactory in the context of this study. Viglia and Dolnicar (2020), assert that there is no universal optimal sample size for experiments in their review of experiments in tourism and hospitality. In fact, small sample sizes are not uncommon in experimental designs. Smith and Little (2018) argue that some of the most robust and valuable findings in psychology have come from experiments with small sample sizes.

In addition, it is worth noting that more recent studies looking at digital experiences in tourism have also used small sample sizes. For instance, Marchiori et al. (2017) with 23 participants, Huang et al. (2013) with 42 participants and Lee and Oh (2007) with 51 participants. These studies demonstrate that valuable insights and meaningful results can be obtained even with relatively small samples. Furthermore, an appropriate sample size reported by utilizing the G Power software is 43 participants with a significance level of 0.05, an effect size of 0.35 (large effect), a power level of 0.8 and 5 variables (Cohen, 1988). Therefore, the sample size of this study (50 respondents) exceeds these thresholds and can be considered viable.

3.3 Analysis

The data was compiled using IBM SPSS Statistics software latest version 29.0.1.0 and as well as SMART-PLS4. To assess the statistical importance of the influence of the constructs PU, PEOU, SN, AT (independent variables) on BI (dependent variable) the structural equation modelling (SEM) was employed. A common guideline recommends a minimum sample size of 100 to 200 observations for SEM. However, as the complexity of the model increases, such as having a larger number of observed variables or latent variables, a larger sample size is generally recommended to ensure reliable and stable estimates. Some experts recommend a minimum ratio of 10 observations per estimated parameter in the model (Wolf et al., 2013). Some researchers often work with small samples to assess the feasibility of their research design, collect initial data and test the adequacy of their proposed SEM model (Ganesh Dash, 2021).

4. Results and discussions

4.1 Profile of participants

The first two characteristics of the respondents relate to age group and gender. Of the total of 50 respondents, 27 (54%) were male and 23 (46%) females. Regarding age, five intervals were constructed: under 18, 18-24 years, 25-34 years, 35-44 years, 45-65 years and over 65 years. The age group with the highest proportion (58%) is the 18to 24 age group and the 25to 34 age group (24%), followed by the 35to 44 age group (10%), then the 45 to 65 age group (6%) and finally the under 18 age group (2%). Therefore, the respondents to the survey were comprised of Generations X, Y and Z, which are commonly referred to as digital natives and which also comprise two highly significant segments in the tourism industry. In Europe, Generation Y or Millennials represent a substantial market, accounting for around half of all travel expenditures. Generation X is an intermediate generation that generally shows a moderate interest in and embraces technology, including new technologies such as virtual reality. Whilst they do not have the same level of affinity as Millennials and Generation Z, Generation X still demonstrates a significant interest in technology and its applications, including in the context of tourism and immersive experiences. Generations Y and Z exhibit a strong passion for travelling, and this inclination to travel has created new opportunities for businesses, including those in the technology sector. Younger individuals tend to travel more frequently and for longer periods of time, seeking transformative and impactful experiences. As a result, Generation Z has an increasing demand for immersive offerings of products and services (Buhalis and Karatay, 2022). When considering emerging technologies such as mixed reality (including augmented reality or AR and VR), the willingness to adopt such innovations becomes a crucial factor (Buhalis and Karatay, 2022). These technologically savvy generations, often referred to as digital natives, demonstrate a higher affinity for digital experiences due to their inherent interest in technology (Boland, 2017). Millennials have been characterized as the "high-tech" generation as they state that Generation Z being the first age group to be constantly connected to various devices and gadgets. Generation Z continues this trend as they too are digital natives and their utilization of VR applications for tourism is on the rise. Boland (2017) observes that the highest interest in VR is among individuals between the ages of 18 and 34. Taken together, these generations represent an appropriate target group for studying the intention to engage in the Metaverse in general and the Metaverse in tourism, which is in line with the assumed objectives.

Concerning education level, the proportion of individuals with a bachelor's, high school or post-high school degree is the highest with 33 respondents (67%), followed by a master's degree with 10 respondents (20%) and a doctorate with 7 respondents (14%). In regard to monthly income, the highest proportion of individuals with an income between 2500-5000 RON - 17 respondents (34%), followed by those with an income between 1000-2500 RON with 14 respondents (28%), followed by those with an income above 5000 RON and finally those with an income below 1000 RON. In terms of employment status, the vast majority of respondents are currently students - 30 respondents (60%), full-time employees - 17 (34%), followed by part-time employees - 3 (6%).

Regarding the usage of technologies compatible with the Metaverse, are the following, for the VR technology only 34 respondents (68%) have used VR technology to date, while the remaining 16 (32%) have not yet used it. In the case of AR technology, only 17 respondents (34%) have used it to date, while the remaining 33 respondents (66%) have not yet used it. Finally, in the case of MR technology, only 12 respondents (24%) have used it to date, while the remaining 38 respondents (72%) have not yet used it.

4.2 Reliability and validity of the model

The assumptions regarding the reliability and validity of the model were checked. The Cronbach's alpha, the composite reliabilities (CRs) and the average variance extracted (AVE) are presented in Table 2.
Cronbach's alpha is a statistical metric employed for evaluating the internal coherence or dependability of a scale or survey and quantifies the degree to which the items within that scale or test correlate with each other. Ranging between 0 and 1 Cronbach's alpha provides insight into the scale's internal consistency or reliability of the scale, with higher values denoting stronger internal coherence. A value of 1 signifies impeccable internal consistency, whereas values close to 0 indicate below-average internal coherence.

Table 2. Confirmatory factor analysis results

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
AT	0.953	0.954	0.964	0.843
BI	0.93	0.934	0.956	0.878
PEOU	0.935	0.952	0.948	0.723
PU	0.952	0.952	0.962	0.807
SN	0.893	0.929	0.933	0.823

Source: own computation SMART-PLS4

The calculated values were 0.952 for PU, 0.935 for PEOU, 0.893 for SN, 0.953 for ATU and 0.93 for BI, reflecting the internal reliability of each construct when it comes to the utilization of the metaverse in tourism. It is worth noting that three scores are above 0.9 and one is very close to 0.9, indicating a strong level of internal reliability. This indicates that the items of the constructs are consistently correlated with each other and provide reliable measurements. The majority of the items have factor loadings above 0.7 (see Figure 1), which is deemed highly favourable (Hair et al., 2010). Of the total of 25 items, only one deviates with loadings between 0.5 and 0.7, which is considered acceptable. These findings showcase a very strong convergent validity of the measurement instrument. All AVE results presented in Table 2 surpass the 50% threshold, with results ranging from 0.723 to 0.878, indicating robust convergent validity. Furthermore, all constructs demonstrate high reliability, with composite reliabilities (CR) scoring above 0.7. The actual CR values range from 0.933 to 0.964.

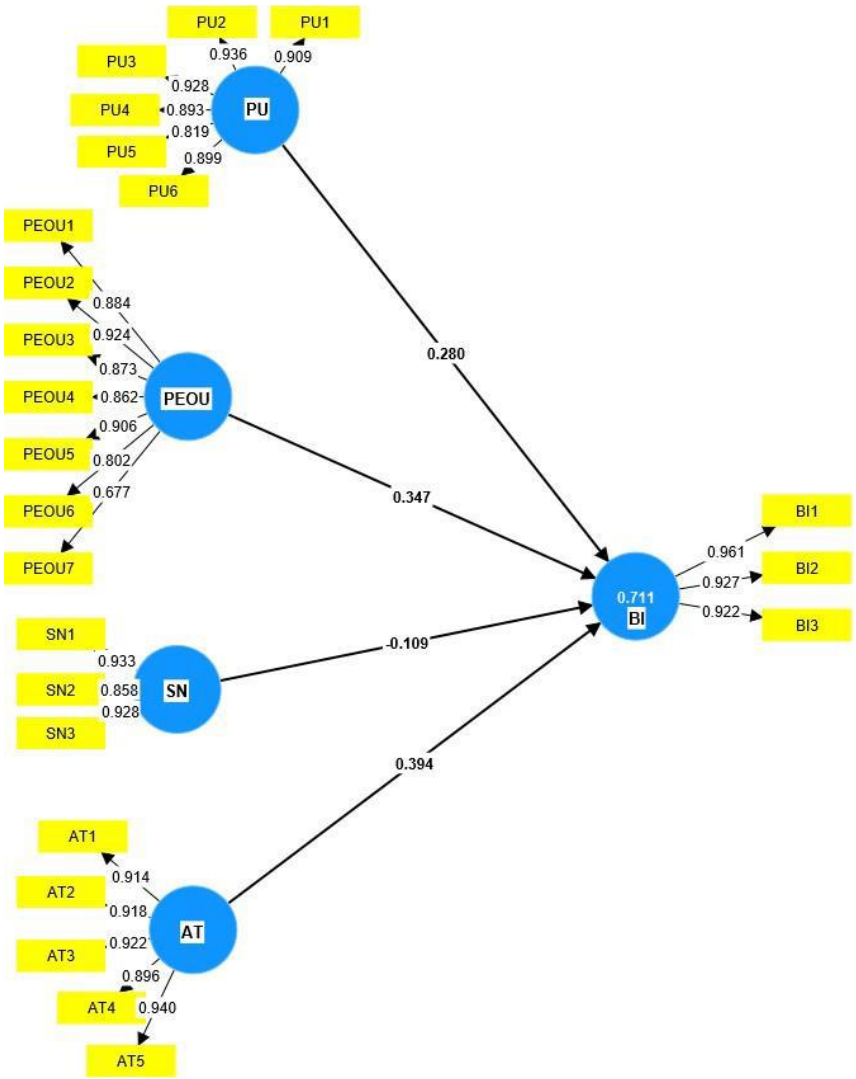

Figure 1. Proposed model
Source: own computation SMART-PLS4

Table 3 displays the correlations and the square root of AVE presented on the diagonal line of the table.

Table 3. Discriminant validity - Fornell-Lacker criterion

	AT	BI	PEOU	PU	SN
AT	0.918				
BI	0.803	0.937			
PEOU	0.724	0.705	0.85		
PU	0.809	0.729	0.52	0.898	
SN	0.628	0.501	0.668	0.465	0.907

Source: own computation SMART-PLS4

It is obvious that all square roots of AVE surpass any correlation in the matrix. This principle holds true for all pair comparisons, demonstrating solid discriminant validity. Hence, all constructs exhibit exceptional reliability and validity. Since normality is assumed for SEM models, we evaluated the statistics for skewness and kurtosis. All of these measures lie within an acceptable range of ±2, from which we can conclude that the distribution of our variables does not significantly violate the normality assumption.

4.3 Model testing

The analysis of the data revealed interesting findings regarding the relationships between various factors (PU, PEOU, SN, AT) and individuals' behavioural intention (Table 4). Firstly, the study supported the hypothesis that PU holds significant positive influence on BI. The statistical analysis showed a significant result ($p = 0.042$) with a standard deviation of 0.162, indicating that individuals' perception of usefulness influences their intention to engage in the desired behaviours. Secondly, the study also supported the hypothesis stating that PEOU positively influence behavioural intention (BI). The results displayed a statistically significant outcome ($p = 0.031$) along with a standard deviation of 0.187, indicating that individuals' perception of the ease of using the technology has a positive impact on their intention to adopt it. However, in regards to hypothesis the relationship between SN and BI was not supported by the data. The p-value (0.121) exceeded the predetermined significance level of 0.05, implying social norms will not have a influence on individuals' intention to engage in the behaviours under investigation. The standard deviation associated with this relationship was 0.092. Lastly, the study supported the hypothesis that attitude (AT) holds positive influence on behavioural intention (BI). The analysis revealed a statistically significant result ($p = 0.043$) with a standard deviation of 0.228, indicating that individuals' attitudes towards the behaviour play a crucial role in shaping their intention to engage in it.

Table 4. Model testing

	P values	Hypothesis	Result
PU -> BI	0.042	H1	Supported
PEOU -> BI	0.031	H2	Supported
SN -> BI	0.121	H3	Not Supported
AT -> BI	0.043	H4	Supported

Source: own computation SMART-PLS4

5. Conclusions and limitations

Our results indicate that perceived usefulness, perceived ease of use and attitude have effects on individuals' behavioural intentions. However, the influence of social norms on behavioural intention was not found to be significant in this study. These findings provide valuable insights into the factors that influence individuals' behavioural intentions of individuals in the context studied. Understanding behavioural intentions to use Metaverse is crucial for tourism industry stakeholders, including destination marketers, tour operators and platform developers, as it can serve as a basis for strategies to enhance the appeal and adoption of Metaverse tourism offerings. In addition, insights from such studies can help identify potential barriers to adoption and inform the design of user-friendly virtual tourism experiences tailored to different demographic groups and preferences.

However, it is important to recognise the limitations of our study. Firstly, our study included 50 respondents from one country (Romania) and the concept of the metaverse and its associated experiences are still in their infancy, particularly in developing countries such as Romania. As a result, there is a reliance on perceived concepts rather than actual experiences, given the lack of widespread availability of Metaverse platforms and services in these regions. Moreover, further studies with larger samples need to be conducted. Secondly, our research focussed solely on collecting perceptual responses from online media and used a single assessment method (questionnaire). To gain a more comprehensive understanding of Metaverse experiences, future studies should also include other methods (e.g., focus groups) and applied also be conducted in the field. Finally, although our study mainly used the TAM framework to explore the intention to use Metaverse, there is a need to explore additional theoretical perspectives and possibly integrate them with TAM to uncover further factors that influence metaverse use behaviour in tourism.

An analysis that delves deeper into the nuances of behavioural intentions when using metaverse in tourism in different age groups would also be very beneficial. This would allow businesses to prioritise features and functionalities that appeal to specific age demographics and ensure that their offerings meet the different needs and expectations of users across all generations.

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References

Ajzen, I. and Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.

Bec, A., Moyle, B., Schaffer, V. and Timms, K. (2021). Virtual reality and mixed reality for second chance tourism. *Tourism Management*, 83, pp. 1-5. https://doi.org/10.1016/j.tourman.2020.104256.

Bloomberg Intelligence (2021). Metaverse may be $800 billion market, next tech platform, [online] Available at: <https://www.bloomberg.com/professional/blog/metaverse-may-be-800-billion-market-next-tech-platform/>. [Accessed on 10 June 2023]

Boland, M. (2017). How do consumers really feel about VR? *ARtillry Insights*. [online] Available at <https://www.thevrara.com/blog2/2017/8/28/how-do-consumersreally-feel-about-vr-new-report>, [Accessed on 25 June 2023].

Buhalis, D. (2020). Technology in tourism-from information communication technologies to eTourism and smart tourism towards ambient intelligence tourism: A perspective article. *Tourism Review*, 75(1), pp. 267-272. https://doi.org/10.1108/TR-06-2019-0258.

Buhalis, D., Lin, M. S. and Leung, D. (2022). Metaverse as a driver for customer experience and value co-creation: Implications for hospitality and tourism management and marketing. *International Journal of Contemporary Hospitality Management*. 35(2), pp. 701-716. https://doi.org/10.1108/IJCHM-05-2022-0631.

Buhalis, D. and Karatay, N. (2022). Mixed reality (MR) for Generation Z in cultural heritage tourism towards metaverse, In: Stienmetz, J.L., Ferrer-Rosell, B., Massimo, D. (eds) *Information and Communication Technologies in Tourism*. ENTER 2022. Springer, Cham. https://doi.org/10.1007/978-3-030-94751-4_2

Buhalis, D., Leung, D. and Lin, M. (2023). Metaverse as a disruptive technology revolutionising tourism management and marketing. *Tourism Management*, 97, 104724. https://doi.org/10.1016/j.tourman.2023.104724.

Chowdhury, R. and Frank, M. (2021). The Metaverse: What it is, where to find it, and how to thrive in it. *Harvard Business Review*. [online] Available at: https://hbr.org/2021/09/the-metaverse-what-it-is-where-to-find-it-and-how-to-thrive-in-it. [Accessed on 20 April 2023].

Clegg, N. (2022). Making the metaverse: *What it is, how it will be built, and why it matters*. [online] Available at: <https://nickclegg.medium.com/making-the-metaverse-what-it-is-how-it-will-be-built-and-why-it-matters-3710f7570b04> [Accessed on 20 April 2023].

Cohen, E., 1988. Authenticity and Commoditization in Tourism. *Annals of Tourism Research*. 15 (3), pp. 371-386. https://doi.org/10.1016/0160-7383(88)90028-X.

Damar, M. (2021). Metaverse shape of your life for future: A bibliometric snapshot. *Journal of Metaverse*, 1(1), pp. 1-8. https://doi.org/10.48550/arXiv.2112.12068.

Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*. 13 (3), pp. 319-340. https://doi.org/10.2307/249008.

Davis, A., Murphy, J. D., Owens, D., Khazanchi, D. and Zigurs, I. (2009). Avatars, people, and virtual worlds: Foundations for research in metaverses. *Journal of the Association for Information Systems*, 10(2), pp. 90-117.https://doi.org/10.17705/1jais.00183

De Felice, F., De Luca, C., Di Chiara, S. and Petrillo, A. (2023). Physical and digital worlds: Implications and opportunities of the metaverse. *Procedia Computer Science*, 217, pp. 1744-1754. https://doi.org/10.1016/j.procs.2022.12.374.

Deng, X., Unnava, H. R. and Lee, H. (2019). Too true to be good? when virtual reality decreases interest in actual reality. Journal of Business Research, 100, pp. 561-570. https://doi.org/10.1016/j.jbusres.2018.11.008.

Dwivedi, Y., Hughes, L., Baabdullah, A., Ribeiro-Navarrete, S., Giannakis, M., Al-Debei, M. and Wamba, F. (2022). Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice, and policy. *International Journal of Information Management*, 66, 102542. https://doi.org/10.1016/j.ijinfomgt.2022.102542.

Fan, D., Buhalis, D. and Lin, B. (2019). A tourist typology of online and face-to-face social contact: Destination immersion and tourism encapsulation/decapsulation. *Annals of Tourism Research*, 78, 102757. https://doi.org/10.1016/j.annals.2019.102757.

Ganesh Dash, P.J. (2021). CB-SEM vs PLS-SEM methods for research in social sciences and technology forecasting. Technological Forecasting and Social Change, 173, 121092. https://doi.org/10.1016/j.techfore.2021.121092.

Go, H. and Kang, M. (2022). Metaverse tourism for sustainable tourism development: Tourism agenda 2030. *Tourism Review*, 78(2), pp. 381–394. https://doi.org/10.1108/TR-02-2022-0102.

Griffin, T., Giberson, J., Lee, S.H.M., Guttentag, D., Kandaurova, M., Sergueeva, K. and Dimanche, F., (2017.) Virtual reality and implications for destination marketing, in: *Proceedings of the 48th Annual Travel and Tourism Research Association* (TTRA). 29.

Gursoy, D., Malodia, S. and Dhir, A. (2022). The metaverse in the hospitality and tourism industry: An overview of current trends and future research directions. *Journal of Hospitality Marketing & Management*, 31(5), pp. 527–534. https://doi.org/10.1080/19368623.2022.2072504.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (2010). *Multivariate Data Analysis (7th edition)*, NJ: Pearson Prentice Hall.

Hollensen, S., Kotler, P. and Opresnik, M. (2022). Metaverse - the new marketing universe. *Journal of Business Strategy*. 44(3), pp. 119-125. https://doi.org/10.1108/JBS-01-2022-0014.

Huang, Y.C., Backman, S.J., Backman, K.J. and Moore, D.W. (2013). Exploring user acceptance of 3D virtual worlds in travel and tourism marketing. *Tourism Management*, 2013, 36(C), pp. 490-501, https://doi.org/ 10.1016/j.tourman.2012.09.009.

Huang, V.G. (2021).Wall Street analysts are rushing to dub the metaverse the next multi-trillion-dollar investing opportunity. Here's what 3 of them are saying about its potential and risks, *Business Insider*. [online] Available at <https://www.businessinsider.com/metaverse-stocks-tokens-altcoins-wall-street-crypto-gamefi-facebook-roblox-2021-12> [Accessed on 20 April 2023].

Hsu, C.L. and Lu, H.P. (2004). Why do people play on-line games? An extended TAM with social influences and flow experience. Information & Management. 41 (7), pp. 853-868. https://doi.org/10.1016/j.im.2003.08.014.

Jung, T., Dieck, M.C., Moorhouse, N. and Dieck, D. (2017). Tourists' experience of virtual reality applications. In *IEEE International Conference on Consumer Electronics (ICEE)*, Las Vegas, NV, USA, 8-10 January, IEEE, pp. 208-210. https://doi.org/10.1109/ICCE.2017.7889287.

Kaplanidou, K. and Vogt, C. (2006). A structural analysis of destination travel intentions as a function of web site features. *Journal of Travel Research*, 45(2), pp. 204-216. https://doi.org/10.1177/0047287506291599.

Kharif, O. (2021). The Metaverse: What It Is, Where to Find It, Who Will Build It. *Bloomberg*, [online] Available at: <https://www.bloomberg.com/news/features/2021-08-12/the-metaverse-what-it-is-where-to-find-it-who-will-build-it> [Accessed 20 April 2023].

Kim, D.Y., Park, J. and Morrison, A.M. (2008). A model of traveller acceptance of mobile technology. *International Journal of Tourism Research*, 10 (5), pp. 393–407. https://doi.org/10.1002/jtr.669.

Kim, M.J., Lee, C.K. and Preis, M.W. (2020). The impact of innovation and gratification on authentic experience, subjective well-being, and behavioral intention in tourism virtual reality: the moderating role of technology readiness. *Telematics and Informatics*, 49, 101349. https://doi.org/10.1016/j.tele.2020.101349.

Kuang, X., and Tan, Y. (2021). The new era of social interaction in the metaverse: A case study of Horizon Home. *Journal of Interactive Marketing*, 55, pp. 95-110. https://doi.org/10.1016/j.intmar.2021.07.003.

LaMorte, W.W. (2022). Social Norms Theory. *Boston University School of Public Health*. [online] Available at: <https://sphweb.bumc.bu.edu/otlt/mph-modules/sb/behavioralchangetheories/BehavioralChangeTheories7.html>, [Accessed 1 June 2023].

Lai, P.C (2017). The literature review of technology adoption models and theories for the novelty technology. *Journal of Information Systems and Technology Management*, 14 (1), pp. 21-38, https://doi.org/10.4301/S1807-17752017000100002.

Lee, O. and Oh, J. E. (2007). The impact of virtual reality functions of a hotel website on travel anxiety. CyberPsychology & Behavior, 10(4), pp. 584–586. https://doi.org/10.1089/cpb.2007.9987.

Logan, K. (2021). Cathie Wood says the Metaverse could be worth trillions and will affect the world in ways 'we cannot even imagine right now,' *Fortune*, available at <https://fortune.com/2021/12/03/cathie-wood-Metaverse-trillions-affect-every-sector/> [Accessed 20 April 2023].

Mandal, S., Paul, J., Kotni, V. V. D. P. and Chintaluri, M. G. (2024). The orientation of Gen Zs towards metaverse tourism. *Journal of Destination Marketing & Management*, 32, 100871. https://doi.org/10.1016/j.jdmm.2024.100871.

Maghaydah, S., Al-Emran, M., Maheshwari, P. and Al-Sharafi, M. A. (2024). Factors affecting metaverse adoption in education: A systematic review, adoption framework, and future research agenda. *Heliyon*, 10(7), e28602. https://doi.org/10.1016/j.heliyon.2024.e28602.

Marasco, A., Buonincontri, P., van Niekerk, M., Orlowski, M. and Okumus, F. (2018). Exploring the role of next-generation virtual technologies in destination marketing. *Journal of Destination Marketing & Management*, 9, pp. 138–148, https://doi.org/10.1016/J.JDMM.2017.12.002.

Marchiori, E., Niforatos, E. and Preto, L. (2017). Measuring the media effects of a Tourism-Related virtual reality experience using biophysical data. In R. Schegg & B. Stangl (Eds.), *Information and Communication Technologies in Tourism*, Proceedings of the International Conference in Rome, Italy, 24-26 January (pp. 203-215). Springer, Cham. https://doi.org/10.1007/978-3-319-51168-9_15.

Martínez-Gutiérrez, A., Díez-González, J., Perez, H. and Araújo, M. (2024). Towards industry 5.0 through metaverse. *Robotics and Computer-Integrated Manufacturing*, 89, 102764. https://doi.org/10.1016/j.rcim.2024.102764.

Meta. (2022). *Building the Metaverse: Our Vision and Principles*. [online] Available at: <https://www.meta.com/metaverse/vision-and-principles.> [Accessed 20 April 2023].

Meta. (2023). *Understanding the Economic Potential of the Metaverse*. [online] Available at: <https://about.fb.com/news/2023/05/economic-potential-of-the-metaverse/> [Accessed 10 May 2023].

Pavlou, P. (2003). Consumer acceptance of electronic commerce: integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce*, 7 (3), pp. 101-134. https://doi.org/10.1080/10864415.2003.11044275.

Ramkissoon, H. and Mavondo, F. T. (2021). Augmented reality and virtual reality in tourism and hospitality: A review of the implications for destination marketing and tourist experience. *Journal of Destination Marketing & Management*, 19, 100575. https://doi.org/10.1016/j.jdmm.2020.100575.

Robinson, A. and Christensen, L., (2021). The potential global economic impact of the metaverse. *Analysis Group* (report). [online] Available at: <https://www.analysisgroup.com/globalassets/insights/publishing/2022-the-potential-global-economic-impact-of-the-metaverse.pdf> [Accessed 15 March 2024].

Saeed, N., Yang, Y. and Sinnappan, S. (2009). Emerging web technologies in higher education: a case of incorporating blogs, podcasts and social bookmarks in a web programming course based on students' learning styles and technology. *Educational Technology & Society*. 12(4), pp. 98-109. http://www.jstor.org/stable/jeductechsoci.12.4.98.

Schiopu, A. F., Hornoiu, R. I., Padurean, M. A. and Nica, A.M. (2021). Virus tinged? Exploring the facets of virtual reality use in tourism as a result of the COVID-19 pandemic. *Telematics and Informatics*, 60, 101575. https://doi.org/10.1016/j.tele.2021.101575.

Schiopu, A. F., Hornoiu, R. I., Padurean, A. M., and Nica, A.M. (2022). Constrained and virtually traveling? Exploring the effect of travel constraints on intention to use virtual reality in tourism. *Technology in Society*, 71, 102091. https://doi.org/10.1016/j.techsoc.2022.102091.

Speights, K. (2021). *3 Stocks to Buy With a $30 Trillion Metaverse Market on the Way*, [online] Available at: <https://www.fool.com/investing/2021/12/06/3-stocks-to-buy-with-a-30-trillion-metaverse-marke/.> [Accessed on 20 April 2023]

Stephenson, N. (1992). *Snow Crash*. New York, NY: Bantam Books.

Smith, P. L. and Little, D. R. (2018). Small is beautiful: In defense of the small-N design. *Psychonomic Bulletin & Review*, 25(6), 2083–2101. https://doi.org/10.3758/s13423-018-1451-8.

Song, X. Yao, N. and Wen, N. (2021). What motivates Chinese consumers to avoid information about the COVID-19 pandemic? The perspective of the stimulus-organism response model, *Information Processing & Management*. 58(1), 102407. https://doi.org/10.1016/j.ipm.2020.102407.

Surovaya, E., Prayag, G., Yung, R. and Khoo-Lattimore, C. (2020). Telepresent or not? Virtual reality, service perceptions, emotions and post-consumption behaviors. *Anatolia*, 31(4), pp. 620–635. https://doi.org/10.1080/13032917.2020.1808431.

Ticak, M., (2022). What Does "Meta" Mean?, *Grammarly*, [online] Available at: <https://www.grammarly.com/blog/meta-meaning/>, [Accessed 20 April 2023].

Vidal-Tomás, D. (2023). The illusion of the metaverse and meta-economy. *International Review of Financial Analysis*, 86, 102560., https://doi.org/10.1016/j.irfa.2023.102560.

Viglia, G. and Dolnicar, F. (2020). A review of experiments in tourism and hospitality. *Annals of Tourism Research*, 80. 102858, https://doi.org/10.1016/j.annals.2020.102858.

Ying, T., Tang, J., Ye, S., Tan, X. and Wei, W. (2022). Virtual reality in destination marketing: Telepresence, social presence, and tourists' visit intentions. *Journal of Travel Research*, 61(8), pp. 1738-1756. https://doi.org/10.1177/00472875211047273.

Wang, Y., Su, Z., Zhang, N., Xing, R., Liu, D., Luan, T. H., et al. (2022). A survey on metaverse: Fundamentals, security, and privacy. *IEEE Communications Surveys & Tutorials*, 1–32. https://doi.org/10.48550/arXiv.2203.02662.

Warshaw, P. R. and Davis, F. D. (1985). Disentangling behavioral intention and behavioral expectation. *Journal of Experimental Social Psychology*. 21(3), pp. 213-228. https://doi.org/10.1016/0022-1031(85)90017-4

Wolf, E. J., Harrington, K. M., Clark, S. L., and Miller, M. W. (2013). Sample size requirements for structural equation models: An evaluation of power, bias, and solution propriety. *Educational and Psychological Measurement*, 73(6), 913-934. https://doi.org/10.1177/0013164413495237.