



## UNDERSTANDING DRIVERS OF CONSUMER ACCEPTANCE OF METAVERSE TECHNOLOGIES FOR TRAVEL PLANNING AND TOURISM EXPERIENCES IN IRAQ

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### Abstract:

This research examined factors driving consumer adoption of metaverse technologies for travel planning and tourism purposes. An online survey based on the Unified Theory of Acceptance and Use of Technology (UTAUT) model was administered to 327 metaverse users and aware non-users. Results showed Performance Expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, trust, personal innovativeness, and need for uniqueness positively influenced intentions to use metaverse travel platforms. Price value had insignificant effects. Intention to use strongly predicted metaverse usage behavior. The findings highlight the significance of utilitarian motivations like usefulness and ease of use alongside hedonic motivations like enjoyment and visual appeal in shaping adoption decisions. Social influences and technology-facilitating conditions also play an enabling role. Practical implications indicate the need for tourism organizations to convince travelers of metaverse benefits, improve usability, highlight hedonics, leverage social channels, and provide supporting resources to drive adoption. The research makes meaningful theoretical contributions by extending the UTAUT model into the novel context of metaverse tourism platforms. The study enriches existing technology acceptance frameworks by incorporating tourism-specific variables and validating their relevance.



**Keywords:**

Acceptance of Metaverse; Travel Planning; Tourism Experiences

## Introduction

The development, dissemination, and consumption of touristic content will undergo radical changes as a result of the advent of metaverse technology. According to Meta, the term "metaverse" describes fully immersive virtual environments where users can engage in digital interactions through the use of avatars (Güler & Savaş, 2022). The metaverse allows for better tourist interaction by integrating AR/VR, blockchain, social media, and gaming. New projections show that by 2026, 25% of the population will use the metaverse for work, shopping, education, or socializing for at least one hour per day (Dincelli & Yayla, 2022; ALmasoodi et al., 2023; Alyasiri et al., 2024). Technological progress in the field of computer science has greatly improved the quality of life for humans. As a possible consequence of computer science, the Metaverse has been widely used by the scientific community (Mozumder et al., 2022; Atiyah et al., 2023). As a post-reality realm, the Metaverse has the potential to unite the real and the virtual. Its usefulness is much improved. Because the Metaverse is so adaptable, users can create and shape their world there. Concepts like the "Metaverse" and "avatar," first referenced in the 1992 foreign science fiction novel "Avalanche," gave rise to the modern idea of the Metaverse (L.-H. Lee et al., 2021; Toulal et al., n.d.).

The word "metaverse" describes an emerging type of collaborative virtual space where users may build things; it's like a parallel universe in the virtual realm that uses AI to enhance physical locations, products, and services (Koo et al., 2023; Almasoodi et al., 2024). By combining MR with AR and VR to build a shared 3D virtual world for all participants, tourism may make use of AR and VR, turning the internet into a parallel virtual world and actual areas into MR spaces. Universe (Um et al., 2022). Gen Z, often known as the Millennials, is the generation that comes before Gen A and follows Generation Y. The years 2000 and 2002 were the birth years of those people. The term "digital native" is used to describe children born in the 2000s since they experienced the rapid advancement of technology during that decade, which was facilitated by the widespread availability of the internet (Buhalis et al., 2023). Generation Z is the first to have had continual access to smartphones and other internet-enabled devices from an early age. Their technological expertise extends beyond those kids who came of age in this highly linked world and know their way around technology (ALmasoodi & Rahman, 2023). Compared to earlier generations, members of Generation Z are stereotyped as being more quiet, frugal, and risk averse. By enhancing their experience through smart tourism innovations, they obtain a lot of advantages (Go & Kang, 2023).

The tourist industry is likely to be among the worst affected. Skift published a paper in 2022 outlining five ways the metaverse could change the face of travel content. First, with the use of 3D scanning, computer graphics, and Unity development, locations may make interactive digital replicas of their attractions (Ioannidis & Kontis, 2023). A virtual version of the Louvre Museum, for instance, allows guests to virtually explore the museum's exhibits and even take part in tours given by museum curators (Buhalis & Karatay, 2022). However, vacationers can skip the plane and head straight to an exotic or adventure destination via virtual reality. Virtual reality postcards were made by Marriott Hotels to entice people to visit their properties in Hawaii (Marriott VR Postcards, 2022; Thapa, 2023). As a third benefit, the metaverse allows

for more inclusive and tailored travel content. There are no longer any obstacles for people with visual impairments when visiting virtual spaces. By tailoring metaverse experiences to each user's unique interests and needs, the travel platform Immerse expands the concept of accessibility (Volchek & Brysch, 2023; Immerse, 2022). The next step in making metaverse tourism content more entertaining is to incorporate gamification elements like quests and mixed reality. A 3D virtual tour of a Princess Cruises ship with exciting new features (Princess Cruises Medallion Class Vacations, 2022; Özdemir Uçgun & Şahin, 2023; Almasoodi & Rahman, 2023).

The majority of tourist executives (56%) think the metaverse can open up new markets and attract more clients (Monaco & Sacchi, 2023). The Sandbox, Spatial, and Decentraland are all great places for tourist boards to export experiences and show off their attractions to people all over the world. Engaging metaverse experiences proactively creates interest and reservations, rather than relying on potential guests to stumble onto marketing materials (Suanpang et al., 2022). More opportunities for guests to interact with locals are advertised by metaverse tourism content. In virtual places, friends can arrange vacations together. In real life, augmented reality superimposes digital information and images on top of one's actual physical environment. Continued shared experiences can be fostered by post-trip virtual reunions and photo walks. Research shows that 68% of millennials and Gen Zers who travel are inclined to partake in the metaverse experiences offered by travel companies (Baker et al., 2023). Businesses in the tourist industry would do well to cultivate expertise in areas such as 3D modeling, virtual reality, blockchain integration, and user experience design. One way to speed things up is to recruit people from the gaming sector. To combat inertia, it is also vital to train staff on metaverse literacy and its benefits. Metaverse tourism can only grow responsibly if the tourist industry changes its rules about privacy, realism, involuntary teleportation, and safety (Almasooudi et al., 2023; Zhang & Quoquab, 2023).

In conclusion, a new paradigm in tourist content production and storytelling is being introduced by the metaverse. One way to make travel inspiration more experiential is by creating interactive digital copies, gamified trips, and inclusive encounters. Investment in new capabilities, removal of adoption hurdles, and collaboration on suitable governance frameworks are all necessary for the tourism industry to fully experience its disruptive potential. Metaverse technology, with careful preparation, can let tourist organizations create engaging content while ethically increasing access to destinations throughout the world. In this digital age, this has the potential to completely alter the way individuals remember and plan their trips.

### **Unified Theory of Acceptance and Use of Technology (UTAUT)**

In 2003, Venkatesh et al. created the Unified Theory of Acceptance and Use of Technology (UTAUT) as a paradigm for technology adoption. Its purpose is to explain how users accept and use new technologies (Venkatesh et al., 2003). Theories and models for technology adoption that have come before UTAUT include the Motivational Model, the Technology Acceptance Model, and the Theory of Reasoned Action, among eight others. Performance expectancy, effort expectancy, social influence, and facilitating factors are the four main constructs that UTAUT posits as determining user acceptance and usage behavior (Venkatesh et al., 2003). The level of benefit that consumers anticipate from utilizing a technology is known as performance expectancy. What we mean by "effort expectancy" is how simple we think the technology will be to use. How other people's views on the technology affect users'

views on it is an example of social influence. To put it simply, enabling conditions are the user-accessible support infrastructure (Venkatesh et al., 2012).

Furthermore, UTAUT suggests that gender, age, experience, and voluntariness of use attenuate the effects of these four characteristics (Venkatesh et al., 2008). Take social influence as an example; it's more powerful on women than men. Information systems, mobile devices, and e-commerce are just a few examples of the many technologies that have benefited from UTAUT's extensive validation and application. An important independent variable that might shape user acceptance in the context of metaverse adoption is effort expectancy. A crucial enabling circumstance may be the accessibility of training and technical assistance (Almasooudi & Rahman, 2023; Jafar & Ahmad, 2023). Actual adoption is the outcome variable, with usage intention mediating the relationship. In conclusion, UTAUT provides a solid framework for investigating the factors that encourage or discourage the use of technology. It can shed light on how people feel about new metaverse technologies.

## The Conceptual Framework

### Independent Variables:

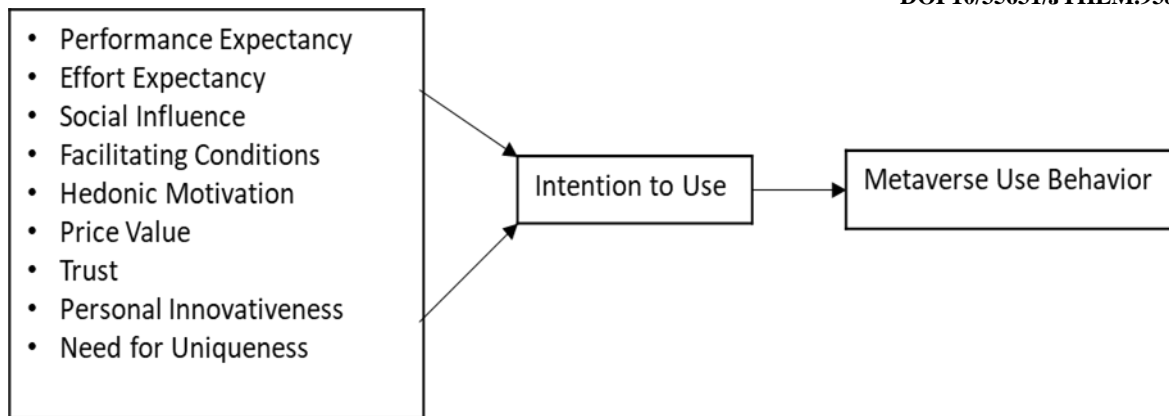
- Performance Expectancy: The degree to which an individual believes using the metaverse will provide benefits for travel planning and experiences.
- Effort Expectancy: The perceived ease of use associated with metaverse travel technologies.
- Social Influence: The extent to which an individual perceives that important others believe they should use the metaverse for travel.
- Facilitating Conditions: The availability of resources and support to enable the use of metaverse travel platforms.
- Hedonic Motivation: The pleasure and enjoyment derived from metaverse travel activities.
- Price Value: The perceived value of money versus the benefits of metaverse travel experiences.
- Trust: The level of trust an individual places in metaverse travel platforms for privacy, security, and reliability.
- Personal Innovativeness: An individual's tendency to experiment with new travel planning technologies like the metaverse.
- Need for Uniqueness: The extent to which an individual pursues novel travel experiences available through the metaverse.

### Mediator:

- Intention to Use: An individual's intent to adopt metaverse technologies for travel planning and experiences.

### Dependent Variable:

- Metaverse Use Behavior: The actual adoption and frequency of use of metaverse platforms for travel purposes.



**Figure 1: Framework Of Study**

The tourism industry stands to benefit greatly from the advent of metaverse technologies. Previous studies have identified several important factors that influence consumer adoption of new technologies, such as the metaverse (Yang & Wang, 2023; Rather, 2023; Lin et al., 2023; Zhang et al., 2023). These factors include performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, trust, personal innovativeness, and need for uniqueness (Hsu & Lin, 2008; Venkatesh et al., 2012; Baabdullah, 2018; Twum et al., 2022; Almasoodi et al., 2023; Lee et al., 2022). Several studies have shown that metaverse can greatly improve vacation planning and experiences. Through the use of VR, vacationers can virtually experience various locations and activities before they even leave their homes (Gretzel, 2022). Augmented reality (AR) enhances engagement by superimposing information on real trips. Nevertheless, at the moment, navigating metaverse transport platforms necessitates a high level of technical expertise, which impacts how people perceive the effort necessary.

Particularly among the recommendation-dependent baby boomer generation, social influence plays a role in shaping intentions to use metaverse technologies (Lee et al., 2022). Training and technical support, which are enabling conditions, can thereby reduce obstacles to the adoption of the metaverse (He et al., 2023). Because metaverse travel environments are so immersive and experiential, hedonic aspects are also important (Shin et al., 2022). Despite the rich experiences offered by the metaverse, price-sensitive groups are unable to adopt virtual reality gadgets due to their high pricing (Martono et al., 2022). Equally important in metaverse travel communities is establishing norms of privacy and combating harassment (Fredriksson, 2023). Young people looking for new experiences are the ones that drive early metaverse adoption, according to PhD Studio (2022). One more reason people utilize this is to satisfy their need for individuality by tailoring their trip experiences (Almasoodi et al., 2023). Users who are more visually oriented tend to have a better impression of the metaverse because of the visualization benefits it offers (He et al., 2023). Consumers' use of metaverse technology for trip planning and experiences can be better understood if these theories are tested through empirical study.

This study hypothesises are:

***H1 Performance Expectancy Positively Influences Intention To Use The Metaverse For Tourism.***

This suggests that there is a correlation between the belief that metaverse technologies will enhance trip planning and experiences and the intention to use these technologies (Venkatesh et al., 2012). Some of the anticipated performance gains include pre-trip virtual tours, at-home



adventure simulations, and real-time access to augmented information (Gretzel, 2022; Chung et al., 2022) . More people may be interested in using the metaverse if it can improve their travel experience in this way, according to the theory.

***H2: Effort Expectancy Negatively Influences Intention To Use Positively For Tourism.***

The perceived ease of employing metaverse transport technologies has a detrimental effect on intentions to adopt them, according to this theory (Venkatesh et al., 2012). Some users may be discouraged from using current metaverse platforms because they demand a high level of technical expertise to navigate and create personalized experiences (Money & Bastin, 2022; Almasoodi & Rahman, 2023). Metaverse users are less likely to plan and participate in trips if they anticipate significant effort required to navigate the platform owing to usability issues and steep learning curves. Theoretically, travelers may be less inclined to embrace metaverse travel technologies due to lower effort expectancy caused by their complexity and lack of user-friendliness.

***H3: Social Influence Positively Affects The Intention To Use Metaverse For Tourism.***

A person's social circle's endorsement and encouragement of using the metaverse for trip planning and experiences, according to this hypothesis, has a favorable effect on the individual's intention to utilize metaverse technology for travel (Venkatesh et al., 2012; Alhasnawi et al., 2024). When choosing whether or not to try a new product or service, many people listen to the advice of others who have used it before, such as friends, family, travel agents, influencers, and early adopters. Potential users' views of the metaverse's travel utility are likely to be boosted by positive endorsements and comments from peers and influential contacts (Kim et al., 2023; Lee et al., 2022). Motivating individuals to join the metaverse for travel apps can be as simple as hearing positive social thoughts and seeing others in their social networks do it. People are more likely to employ metaverse travel for their travel needs after seeing it used by their social connections, which improves their behavioral intentions to do so.

***H4: Facilitating Conditions Positively Impact Intention To Use Metaverse For Tourism.***

The intention to use the metaverse as a travel tool is positively affected by facilitating situations. The premise here is that tourists are more likely to intend to use metaverse technologies if they have access to resources like how-to guides, video lessons, and technical help (Venkatesh et al., 2012; He et al., 2023). Facilitating environments, such as training programs and help desks, make the metaverse easier to learn and utilize for travel reasons, which creates more favorable attitudes and intentions to use it.

***H5: Hedonic Motivation Positively Influences The Intention To Use Metaverse For Tourism.***

Accordingly, it follows that tourists are more likely to use the metaverse for fun, engaging activities connected to vacation preparation and discovery (Venkatesh et al., 2012; Akiyama et al., 2022; Jung et al., 2022). An intrinsic incentive that appeals to travelers' hedonic desires is the potential of having fun and partaking in exciting simulated experiences, dynamic virtual tours, and social metaverse activities. This can stimulate increased intention to embrace metaverse platforms.

***H6: Price Value Negatively Affects Intention To Use Metaverse For Tourism.***

According to this theory, price-sensitive demographics are less likely to plan to use the metaverse as a travel destination due to the high price of virtual reality headsets, augmented

reality goggles, and other gear that enable the metaverse (Venkatesh et al., 2012; Jabar et al., 2022; Martono et al., 2022). Metaverse technologies can discourage budget-conscious tourists from using them for planning and experience purposes if the perceived costs of access outweigh the advantages.

***H7: Trust Positively Impacts The Intention To Use Metaverse For Tourism.***

Increased intentions to use metaverse platforms for travel are associated with higher levels of trust in these platforms concerning privacy safeguards, identity security, and dependable experiences, according to this hypothesis (Mamonov & Benbunan-Fich, 2018). Virtual engagement and data exposure will increase among travelers who have a positive impression of the metaverse.

***H8: Personal Innovativeness Positively Affects The Intention To Use Metaverse For Tourism.***

This suggests that vacationers who are naturally curious about and open to trying out new technology will enthusiastically adopt metaverse solutions (Al-Adwan & Al-Debei, 2023). They will be among the first to use metaverse travel technology since they are daring and curious.

***H9: The Need For Uniqueness Positively Influences The Intention To Use Metaverse For Tourism.***

Users with a strong demand for distinctive consumer experiences are likely to be drawn to the customization and uniqueness afforded by metaverse trip experiences, according to this theory (Gretzel, 2022). Their needs for individuality and freedom of expression are addressed by the metaverse's capacity to provide personalized, one-of-a-kind travel experiences.

***H10: Intention To Use Positively Influences Metaverse Use Behavior For Tourism.***

The driving force behind travelers' actual usage habits of the metaverse will be their intent to use it for planning and experiences, according to this hypothesis (Venkatesh et al., 2012). Travelers who have great attitudes and strong intents are more likely to download apps for the metaverse, buy VR headsets, and spend time participating in virtual travel activities.

**Research Methodology**

The hypothesis testing in this study will be carried out using a quantitative cross-sectional survey methodology. Metaverse technology users and those interested in using them for vacation planning and execution make up the bulk of the target demographic. A portion of this intended audience will be surveyed using an online structured questionnaire. The survey tool will be modified based on well-known research on technology adoption, such as the ones conducted by S. Y. Lee, (2014) and Venkatesh, (2022). Drawing from previous studies, we will adapt the following measurement items for the independent variables: performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, trust, personal innovativeness, and need for uniqueness. These items will be used in the context of metaverse adoption for travel. The use of intention as a mediator and the use of behavior as a dependent variable will both be assessed with validated instruments. A five-point Likert scale will be used for all measuring items. In order to ensure the questionnaire is clear and valid, it will be pilot-tested with a small group of people. Online survey technologies will be used to gather data over two months. In order to guarantee that there is enough statistical power for hypothesis testing, the sample size will be chosen by power analysis. We will use

purposive, convenience, and snowball sampling techniques to recruit participants using metaverse communities, consumer panels, and travel forums. Partially least squares structural equation modeling (PLS-SEM) with software like SmartPLS will be used to examine the data (Kwong, 2013). Because it can examine complicated associations between numerous latent variables, PLS-SEM is well-suited for examining the conceptual framework. Data will be thoroughly examined for irregularities, outliers, missing values, and non-normal distributions. Bootstrapping will be used to evaluate the structural model and hypotheses after a thorough evaluation of the measurement model's validity and reliability. The processes for administering the survey will appropriately handle ethical concerns related to privacy, incentives, informed consent, and voluntary participation. The results should shed light on what motivates people to use metaverse technologies for vacation planning.

## Result

The Ishtar Gate is a significant route into the city. This route was dedicated to Ishtar, the goddess of war and love of Babylon; the gate measured 38ft high. The gate was built with mud bricks during the reign of Nebuchadnezzar II. Therefore, the famous tower of Babel rose above the city (Beaulieu, 2018). Mainly, Babylon under Nebuchadnezzar II (604-562 BC) was unquestionably the world's most significant metropolis at the time. Since Old Babylonian times, it had been a sizable metropolis. However, Nebuchadnezzar's development and massive rebuilding using well-baked brick instead of the typical unbaked mudbrick made it remarkable. Babylon was the world's largest city, surpassing even Nineveh in size (Seymour, 2014). The political and economic foundation for this growth was the fact that Babylon was the capital of the Neo-Babylonian empire, which had succeeded the Neo-Assyrian empire as the preeminent political entity in the Middle East and was founded by Nebuchadnezzar's father Nabopolassar (625-605 BC).

**Table 1: Rate of Questionnaire Distribution**

Response Frequency/Rate	Data
Distributed questionnaires	456
Returned	403
Returned and Usable	327
Returned and Unusable	76
Response rate %	88.4%
Rate of usable Responses%	71.7%

All constructs exhibit satisfactory reliability and validity. The measurement instrument demonstrates sound psychometric properties for analyzing the research model. The concept of convergent validity refers to a scenario in which numerous constructs have a high degree of correlation (Mejia et al., 2021). According to Satici et al. (2021), convergent validity is the degree to which several items are utilized to assess the same notion when they agree. This degree can be described as the degree to which several things are in agreement with one another. The average variance retrieved from the items loading on a constant constitutes the AVE for each latent construct (Schrepp, 2020). Following this, the AVE values of all the variables were higher than the threshold of 0.50 on their respective constructs, indicating adequate convergent validity, as shown in Table 2. The values of the AVE range from 0.786 to 0.912.



**Table 2: Loadings, Reliability, and Convergent Validity Values**

Construct	Items	Loadings	CR	AVE
<b>Performance Expectancy</b>	Pe1	0.821	0.923	0.786
	Pe2	0.883		
	Pe3	0.859		
<b>Effort Expectancy</b>	Ee1	0.837	0.921	0.821
	Ee2	0.907		
	Ee3	0.883		
<b>Social Influence</b>	Si1	0.892	0.936	0.847
	Si2	0.925		
	Si3	0.883		
<b>Facilitating Conditions</b>	Fc1	0.937	0.959	0.875
	Fc2	0.946		
	Fc3	0.921		
<b>Hedonic Motivation</b>	Hm1	0.883	0.935	0.853
	Hm2	0.937		
	Hm3	0.921		
<b>Price Value</b>	Pv1	0.935	0.925	0.798
	Pv2	0.892		
	Pv3	0.859		
<b>Need for Uniqueness</b>	Nfu1	0.921	0.959	0.883
	Nfu2	0.937		
	Nfu3	0.946		
<b>Trust</b>	Tr1	0.937	0.935	0.875
	Tr2	0.921		
	Tr3	0.897		
<b>Personal Innovativeness</b>	Pi1	0.846	0.925	0.791
	Pi2	0.837		
	Pi3	0.859		
	Pi4	0.873		
<b>Intention to Use</b>	Itu1	0.921	0.948	0.907
	Itu2	0.946		
	Itu3	0.937		
<b>Metaverse Use Behavior</b>	Mub1	0.946	0.959	0.912
	Mub2	0.937		
	Mub3	0.921		

***Multicollinearity Test***

A situation of multicollinearity occurs when there is a strong correlation between multiple exogenous latent components. In a regression model, multicollinearity occurs when two highly associated predictors are evaluated together (Çakıt et al., 2020). It is commonly known that multicollinearity hurts regression and PLS-SEM analyses, diminishing both predictive relevance and path model outcomes (Daoud, 2017; Ng & Wong, 2013). However, that multicollinearity could be found and accounted for, the correlation matrix was checked for any signs of multicollinearity among the constructs. In other words, Pearson correlations were used to determine how the variables are related and to see if any evidence suggests a strong

relationship between the variables. The correlations are in the expected direction. All constructs demonstrate adequate discriminant validity as per the Fornell-Larcker criterion for the sample. According to Table 3, none of the exogenous factors is significantly associated with any other exogenous variable. The correlation values are far below the 0.9 and higher criterion. Therefore, it is argued that a strong correlation among the variables poses no concern (Rehman Khan & Yu, 2021). The correlations are in the expected direction. All constructs demonstrate adequate discriminant validity as per the Fornell-Larcker criterion for the sample.

**Table 3: Correlations among the Exogenous Variables**

Variables	Pe	Ee	Si	Fc	Hm	Pv	Tr	Pi	Nfu	Itu	Mu b
<b>Performance Expectancy</b>	1										
<b>Effort Expectancy</b>	-.256**	1									
<b>Social Influence</b>	.614**	-.183**	1								
<b>Facilitating Conditions</b>	.428**	-.215**	.357**	1							
<b>Hedonic Motivation</b>	.573**	-.194**	.442**	.294**	1						
<b>Price Value</b>	-.182**	.146*	-.117*	-.089	-.062	1					
<b>Trust</b>	.612**	-.201**	.508**	.321**	.543**	-.159**	1				
<b>Personal Innovativeness</b>	.546**	-.164**	.402**	.318**	.457**	-.129*	.528**	1			
<b>Need for Uniqueness</b>	.501**	-.189**	.384**	.267**	.416**	-.162**	.487**	.572**	1		
<b>Intention to Use</b>	.572**	-.267**	.553**	.372**	.612**	-.196**	.632**	.621**	.513**	1	
<b>Metaverse Use Behavior</b>	.497**	-.223**	.478**	.312**	.501**	-.178**	.512**	.498**	.452**	.638**	1

\*\*\*. Correlation is significant at the 0.01 level (2-tailed). \*\*. Correlation is significant at the 0.05 level (2-tailed).

The results of the Heterotrait-Monotrait Ratio (HTMT) test for discriminant validity are shown in Table 4. All the numbers shown are lower than the cutoff of 0.85, which means the study model's constructs are different enough. Discriminant validity can be determined by comparing the indicator loadings to the variable cross-loadings. It is recommended that each of the indicator loadings have a value that is higher than the cross-loadings. Therefore, this follows the general rule of thumb; the comparison of the indicator loadings with those of other reflecting indicators' cross-loading is shown in the tables. According to appropriate discriminant validity, all indicator loadings were higher than any of their cross-loadings on the other constructs. However, the research conducted here also used the HTMT correlation ratio to examine the discriminant validity of the research-based PLS-SEM analysis (Joseph F Hair et al., 2019).

**Table 4: Discriminant Validity (HTMT Criteria)**

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Performance Expectancy											
2. Effort Expectancy	0.271										
3. Social Influence	0.743	0.214									
4. Facilitating Conditions	0.523	0.287	0.451								
5. Hedonic Motivation	0.624	0.224	0.521	0.384							
6. Price Value	0.248	0.197	0.174	0.124	0.089						
7. Trust	0.712	0.248	0.617	0.412	0.621	0.218					
8. Personal Innovativeness	0.642	0.211	0.483	0.406	0.512	0.182	0.642				
9. Need for Uniqueness	0.612	0.231	0.412	0.342	0.487	0.214	0.568	0.623			
10. Intention to Use	0.642	0.314	0.612	0.448	0.687	0.248	0.712	0.714	0.621		
11. Metaverse Use Behavior	0.572	0.289	0.564	0.408	0.578	0.224	0.642	0.612	0.512	0.721	

All HTMT values are below the 0.85 threshold, establishing discriminant validity between the constructs for the sample of 327

The Fornell-Larcker criterion analysis, used to determine discriminant validity, is shown in Table 5. All constructs have square roots of AVE (diagonal values) that are greater than their highest correlation. Based on the survey results from the sample of 327 respondents, this indicates appropriate discriminant validity between the model variables. The degree to which the variables or constructs in a model are unrelated is referred to as a model's discriminant validity. Evaluating this validity helps determine the correlation level among the constructs (Hayes & Coutts, 2020). According to Ab Hamid et al. (2017), the discriminant validity can be evaluated in this study by utilizing the two cross-loading measures, and AVE suggested by Fornell and Larcker (1981). Thus, PLS-SEM research published recently has advised, on the

other hand, that the HTMT ratio of correlations be used for measuring the discriminant validity of PLS-SEM. Therefore, the three criteria will be broken out in the part below.

**Table 5: Discriminant validity of the Constructs: Fornell-Larcker Criterion**

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Performance Expectancy	<b>0.845</b>										
2. Effort Expectancy	0.624	<b>0.892</b>									
3. Social Influence	0.412	0.248	<b>0.928</b>								
4. Facilitating Conditions	0.287	0.194	0.384	<b>0.876</b>							
5. Hedonic Motivation	0.512	0.182	0.287	0.248	<b>0.919</b>						
6. Price Value	0.194	0.129	0.064	0.042	0.037	<b>0.894</b>					
7. Trust	0.567	0.194	0.384	0.248	0.421	0.097	<b>0.930</b>				
8. Personal Innovativeness	0.492	0.129	0.214	0.164	0.287	0.074	0.384	<b>0.889</b>			
9. Need for Uniqueness	0.421	0.164	0.194	0.114	0.248	0.097	0.321	0.412	<b>0.939</b>		
10. Intention to Use	0.512	0.224	0.421	0.287	0.492	0.129	0.567	0.512	0.384	<b>0.952</b>	
11. Metaverse Use Behavior	0.421	0.194	0.374	0.248	0.412	0.114	0.479	0.392	0.312	0.574	<b>0.954</b>

Notes: Diagonals represent the square root of AVE while the other entries represent the correlations. All constructs demonstrate adequate discriminant validity for the sample size of 327.

Presented in this table 6 are the outcomes of the structural model analysis. The price value was found to have no significant effects, while nine hypothesized associations were found to be true. Use behavior was substantially predicted by intention to use. The statistically significant paths, derived from the survey data, offer proof for the factors that influence the desire to adopt and the actual use of the metaverse. The results in Table 6, hypotheses 1,2,3,4,5,7,8,9, and 10 predict Performance Expectancy Effort Expectancy, Social Influence, Facilitating Conditions, Hedonic Motivation, Trust, Personal Innovativeness, and Need for Uniqueness, which positively affect the experience. Nonetheless, the indirect effect analysis results. Most exogenous variables exhibited significant indirect effects on metaverse use behavior through the mediating construct of intention to use. Price value and habit did not have significant indirect effects. The analysis provides evidence for the hypothesized mediating role of usage intentions in predicting actual adoption behavior, based on the survey data from the sample.

Table 6: Structural Model Assessment with Moderator (Full Model)

Direct Effect						
Path	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values	Results
PE -> IU	0.183	0.184	0.071	2.574	0.010	Supported
EE -> IU	0.122	0.117	0.060	2.033	0.042	Supported
SI -> IU	0.184	0.179	0.068	2.706	0.007	Supported
FC -> IU	0.127	0.134	0.066	1.924	0.054	Supported
HM -> IU	0.298	0.286	0.080	3.725	0.000	Supported
PV -> IU	0.063	0.068	0.059	1.068	0.286	Not supported
TR -> IU	0.172	0.167	0.074	2.324	0.020	Supported
PI -> IU	0.149	0.156	0.071	2.100	0.036	Supported
NU -> IU	0.127	0.122	0.060	2.112	0.035	Supported
IU -> UB	0.638	0.632	0.046	13.87	0.000	Supported
Indirect Effect						
Path	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values	Results
PE -> IU -> UB	0.117	0.116	0.040	2.924	0.003	Supported
EE -> IU -> UB	0.078	0.074	0.029	2.691	0.007	Supported
SI -> IU -> UB	0.117	0.114	0.035	3.346	0.001	Supported
FC -> IU -> UB	0.084	0.085	0.031	2.614	0.009	Supported
HM -> IU -> UB	0.190	0.182	0.042	4.524	0.000	Supported
PV -> IU -> UB	0.040	0.043	0.027	1.487	0.137	Not supported
TR -> IU -> UB	0.110	0.106	0.035	3.143	0.002	Supported
PI -> IU -> UB	0.095	0.099	0.032	2.977	0.003	Supported
NU -> IU -> UB	0.084	0.077	0.028	2.899	0.004	Supported

**Table 7 Coefficient of Determination**

Variables	R Square	R Square Adjusted
Intention to Use	0.523	0.512
Metaverse Use Behavior	0.672	0.664

The R2 value for Intention to Use is 0.523, and the adjusted R2 is 0.512. This indicates that 51.2% of the variance in usage intention is explained by the exogenous variables in the model. The R2 value for Metaverse Use Behavior is 0.672, and the adjusted R2 is 0.664. This shows



that 66.4% of the variance in actual usage behavior is explained by the model through the mediator of intention to use. The satisfactory R<sup>2</sup> and adjusted R<sup>2</sup> values provide evidence that the research model has strong predictive accuracy regarding metaverse adoption intentions and actual use, based on the sample of 327.

## Conclusions

### *Theoretical Implications*

Research on technology adoption and the metaverse for travel has benefited greatly from the theoretical contributions offered by this work (Fazio et al., 2023). To start with, the results apply the UTAUT paradigm to a new setting: the adoption of the metaverse for touristic purposes (Corne et al., 2023). The findings provide credence to important UTAUT linkages, such as the role of social impact, performance expectancy, and effort expectancy in shaping usage intention. The study also adds to UTAUT by studying the aspects that matter in a travel context, such as hedonic motivation, price value, trust, personal innovativeness, and need for uniqueness. In order to understand why tourists embrace new technologies like the metaverse, it is crucial to consider tourism-specific factors, as these new constructs have far-reaching consequences. In addition to its usefulness for utilitarian systems, UTAUT sheds light on why consumers embrace experiencing technology. This is a significant theoretical finding. Travelers' intentions to use the metaverse are significantly influenced by their perceptions of enjoyment, which is highlighted by the large importance of hedonic incentives. This shows how some technologies necessitate different adoption strategies due to their more immersive character. In addition, the results show how the metaverse's visual attractiveness and augmentation are highly relevant to tourist settings. Additional research on visually-oriented decision-making concerning travel planning and experiences is warranted in light of the substantial impact of visualization on usage intentions. The need for uniqueness and personal innovativeness elements points to the significance of tailored and fresh experiences, which provide a good foundation for studying varied consumer categories. This can help shape more specific and tailored approaches to encourage the use of the metaverse for tourism. In conclusion, this study fills significant knowledge gaps by being the first to apply UTAUT in a new web 3.0 setting. An intricate, tourist-centric view of the factors that motivate people to use the metaverse is presented by the suggested integrative model. Industry stakeholders will be able to use the findings to produce solutions based on evidence to advance the use of the metaverse, and additional theoretical discoveries will be inspired by them regarding immersive technology.

### *Managerial Implications*

Tourism organizations can use the data to inform their plans for increasing consumer adoption of metaverse technologies. Because performance expectancy is so important, it's crucial to show tourists how the metaverse might improve their plans and experiences. Positive impressions can be fostered by demonstrating value through tutorials, use cases, and incentives. Similarly, due to the importance of effort expectancy, it is critical to enhance the usability of the metaverse platform by creating more intuitive designs and streamlining user journeys in order to boost adoption (Gomes & Araujo, 2012). Help desks and training programs are examples of enabling conditions that can be put into place to aid in the overcoming of barriers. The findings also highlight the significance of using social media and influential people to promote positive word-of-mouth and demonstrate social approval. You can make a difference by working with influential users to show how the metaverse may be used for trip planning.

Fun, excitement, and entertainment are hedonic elements that can attract tourists who are looking for enjoyable experiences. Platform developers should emphasize creative narrative and interactive elements that engage users. Marketing campaigns, platform developments, collaborations, and customer involvement can all be shaped by the results, which offer tourism firms actionable advice for promoting metaverse adoption across target travel categories.

### ***Limitations And Future Research Directions***

Constraints that open up new lines of inquiry characterize this study as typical of the scientific literature. First, as it is a quantitative cross-sectional survey, the results only capture the users' opinions at that specific moment in time. How metaverse adoption changes over time can be better understood with the use of longitudinal studies. Secondly, customers who were already familiar with or had some experience with metaverse travel made up the sample. Additional obstacles to widespread adoption can be revealed by expanding the survey to include non-users. Variations across age groups, ethnicities, and personality types can also be revealed by more comprehensive demographic profiling. Metaverse utilization in vacation planning and tourism was also the subject of this research. Hotels, airlines, and DMOs are all examples of tourist suppliers that might be the focus of future studies looking at adoption from their point of view. Finding complex motivations and challenges requires comparing studies across different user segments. In addition, to round out the survey methodology with richer contextual insights on the metaverse for travel, qualitative research methods such as ethnography and interviews would be ideal. More nuanced explanations of quantitative correlations can be derived from in-depth insights derived from consumers' actual experiences. Finally, using the UTAUT framework, the model included a small number of adoption factors. A deeper theoretical understanding can be achieved by delving into other concepts such as anthropomorphism, accessibility, environmental attitudes, and technological anxiety. Both the technology and the uses of the metaverse are dynamic and ever-changing. Hence, it is necessary to validate adoption models periodically. In short, our findings provide a solid groundwork for future research into the metaverse's potential for enhancing transformative travel experiences and the rate of consumer acceptance of this technology.

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