

Is Consumer Behavior the Final Conquest for the Metaverse: Are We Ready for It?

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Abstract

The growing fascination with the Metaverse's marketing possibilities, including its impact on consumer behavior, is evident. Researchers in the field have found deficiencies in comprehending how customers behave within the metaverse, thus emphasizing the need for more studies (Kaur et al., 2024). This study attempts to address this gap by exploring the interactions of Generation Z within the metaverse and using a deductive theme analysis approach to gather qualitative data from 72 individuals through semi-structured interviews. The theoretical framework employed in this study is the Howard Sheth (HS) model. The results are consistent with the stages of the HS model, which include extensive problem-solving, limited problem-solving, and habitual response behavior processes. Despite encountering early difficulties, individuals strongly desire to enter the metaverse and eagerly pursue possibilities for interaction, sometimes urging friends to get involved. This study offers empirical observations about the difficulties and advantages that consumers and brands encounter in the metaverse. Additionally, it deepens our awareness of the immersive temporal experience within the metaverse and clarifies how consumers interact with digital technologies. Furthermore, the study provides valuable knowledge for leaders, technology creators, and regulators who aim to improve consumer interest and engagement in the Metaverse.

Keywords

Metaverse, Consumer Behavior, NFT, Virtual Reality

1. Introduction

The emergence of the Metaverse has garnered considerable interest owing to its immense capacity to transform marketing techniques and impact customer decisions. The Metaverse refers to an independent virtual reality that exists in contrast

to the physical universe (Kolesnichenko et al., 2019; Kye et al., 2021). Integrating social networking with immersive virtual environments bridges the gap between people's imagination and reality (Ayiter, 2019).

Given the Metaverse's rapid proliferation, there needs to be more comprehension of how consumers act. Previous research, often consisting of review articles and expert opinions, must be revised in the valuable insights obtained from direct research on consumer behavior in the Metaverse. Dwivedi et al. (2021) provided a comprehensive viewpoint on the growing difficulties, prospects, and scientific, practical, and policy priorities for the Metaverse from several fields of study. In their research, Dwivedi et al. (2022a) provided a theoretical prediction regarding the impact of the Metaverse on the next phase of consumer research and adoption. Koohang et al. (2023) offered valuable analysis and understanding of the potential effects of adopting and utilizing the Metaverse on corporate operations in many industries. Meanwhile, Mogaji et al. (2023a, 2023b) developed a theoretical framework for Immersive time (ImT) within the Metaverse. Although these investigations contribute to developing novel frameworks of theory and viewpoints, their insights have limitations due to an absence of empirical consistency. Therefore, they also indicate the need for more empirical inquiry. By building on ImT, this study intends to address the current void as a novel and unique term in consumer behavior. Additionally, this study investigates how consumers interact within the Metaverse, delving into their difficulties in understanding and their deeply engaging encounters.

The research follows a qualitative angle by investigating how individuals from Generation Z use the Metaverse through semi-structured interviews. Members of this generation, who came of age between the middle of the 1990s and the start of 2010, strongly prefer digital media and are heavy users of VR and AR (virtual reality and augmented reality) (Sung et al., 2023). Because of Generation Z's natural comfort with technology, studying their Metaverse purchasing habits is essential (Chakraborty et al., 2023a; Nalbant & Aydin, 2023). According to Periyasami and Periyasami (2022) and Park and Kim (2023), their ease with virtual interactions can shape future Metaverse experiences. This study analyzes consumer experiences to provide insight into the manner in which individuals learn about the Metaverse, how business tactics affect their awareness, and the way buying things on impulse affects their interaction with the Metaverse.

The Howard Sheth (HS) model provides a theoretical framework that this inquiry follows, outlining steps from issue identification to post-purchase evaluation. The HS offers a systematic and all-encompassing method for studying user engagement, knowledge acquisition, and behavior in virtual environments. In light of the complex nature of the Metaverse, the HS framework's multi-dimensional viewpoint aids in capturing various aspects, such as user engagement patterns and the acquisition of virtual knowledge, which in turn impact consumer behaviors (Zhao et al., 2022; Koohang et al., 2023; Lee et al., 2021; Hackl et al., 2022). To further understand the early adopters' desire for the Metaverse, the study incorporates the Optimum Stimulus Level theory and the Exploratory Buy-

ing Behavior propensity notion (Helm & Landschulze, 2009). This synthesis of ideas provides a fresh viewpoint on how people will use this innovative technology in the future.

Businesses are giving significant importance to empirical insights when considering the integration of Metaverse in their marketing plans (Mogaji et al., 2023a, 2023b; Golf-Papez et al., 2022). The present study renders three significant contributions. Firstly, it goes beyond theoretical discussions on the Metaverse by providing insights based on current knowledge about consumer behavior. Secondly, it offers a comprehensive perspective that addresses different consumer activities, leading to a greater comprehension of the subject. Lastly, it relies on a qualitative research approach to gather the first-hand experiences of consumers who actively participate in the Metaverse for an extended period. This study aims to offer actionable ideas and perspectives for key actors in the sector, such as leaders, technology creators, and legislators, to enhance consumer engagement and curiosity in the Metaverse.

Section 2 offers a synopsis of the literature review, which is followed by a discussion in subsequent sections of the paper. Section 3 explains the methodology's analysis. Sections 4 and 5 present the findings, followed by a discussion. Section 6 closes by offering a more profound understanding of how the Metaverse affects consumer behavior and sets the stage for subsequent study efforts.

2. Literature Review

2.1. Metaverse Idea

The metaverse is an overarching theoretical framework for virtual reality spaces that allow users to interact in real time with computer-generated environments and other users. The term “metaverse” describes a network of interconnected virtual spaces that merges the real and the virtual, such as the internet, augmented reality, and virtual worlds (Dwivedi et al., 2022a, 2022b). Metaverse research often explores how it can significantly improve relationships and foster stronger communities. Academics argue that the metaverse provides distinct opportunities for people to interact and engage, surpassing the constraints of the physical world (Ayiter, 2019; Zwass, 2014; Dwivedi et al., 2022a, 2022b). The anonymity and flexibility of virtual settings allow one to express oneself and explore one's identity more easily (Hu et al., 2017).

Many businesses consider using the metaverse for advertising and marketing (Shah & Murthi, 2021). By investigating the metaverse's immersiveness, socialization, and environmental loyalty, Barrera and Shah (2023) provide a theoretical framework that emphasizes the power of brands to influence consumers' experiences. One significant benefit of virtual environments for marketing is the ability to collect and analyze consumer data in real time, which provides insights into interactions, preferences, and decision-making. Recent examples highlight the commercial possibilities of the metaverse, but there are still obstacles to overcome, such as concerns over privacy and slow technological acceptance. Unsurprisingly,

Barrera and Shah (2023), Dwivedi et al. (2022a, 2022b) all state that more research is needed to identify successful strategies and minimize possible downsides.

The Metaverse is a virtual space where users can interact with simulated spaces, objects, and people using VR and AR technology. VR creates an artificial environment, while AR incorporates digital information into the real world. Social immersive platforms combine digital and physical worlds in this space. Consumer perceptions of the Metaverse, specifically regarding AR and VR technology, have attracted the interest of researchers. Previous studies have focused on using AR and VR for consumer interactions. For instance, a study by Kim et al. (2017) revealed that people are interested in VR and AR experiences in the Metaverse. Gurosoy et al. (2022) describe the customer experience journey in the Metaverse and its possible effects on behavior.

Several distinct virtual platforms, each with its own characteristics and traits, fall under the umbrella term “Metaverse,” which we acknowledge in our present research is fundamentally broad. Based on recent research (Ooi et al., 2023; Dwivedi et al., 2023a, 2023b), it is clear that this notion is still in its infancy and is constantly molding and changing. Within the larger context of our study, we use the word “Metaverse” to refer to all the current technological advances and platforms that are making significant progress toward a digital realm that is wholly immersive and interlinked. The Metaverse, within its broadest definition, is still evolving, and that much is certain. Modern technology developments and their profound impact on consumer choices and brand loyalty are the primary foci of this research. Mogaji et al. (2023a, 2023b) both point out that we are currently experiencing a gradual but steady evolution that will lead to the eventual appearance of an expanded Metaverse.

2.2. Metaverse and Consumerism

Studies on marketing in the realm of Metaverse address three primary research areas. The first area examines consumer motivations and spending habits within previous online settings and gaming. The second area of study revolves around pre-purchase interactions with consumers within the framework of immersive technologies. The third area of study consolidates prior studies, pinpointing areas that need to be adequately explored and presenting viable avenues for further research (Wongkitrungrueng & Suprawan, 2023). Although there have been investigations on virtual worlds, there is still a need for empirical study on consumer conduct in the present Metaverse. Several of these investigations provide an analytical and innovative viewpoint. Othman et al. (2024), Song et al. (2023), and Dwivedi et al. (2023a) propose a broad theoretical framework that emphasizes the potential influence of the Metaverse for consumer study and application in the future.

Contrarily, Hadi et al. (2023) center their attention on the Metaverse, a brand-new digital space where people act differently. Their study of consumer sense of self, societal effects, and possession as Metaverse components shows how these parts work together to change how people behave as consumers. Mogaji et al. (2023b) and Soliman et al. (2024) introduce the concept of ImT. Their definition

is the amount of time spent in the Metaverse. They argue that acknowledging ImT's value would benefit academics, practitioners, tech creators, marketers making Metaverse strategies, and lawmakers, considerably, making sure that consumers are safe in immersive Metaverse encounters.

Research into theoretical works has grown substantially, allowing us to better understand how consumers interact with the Metaverse. Assessing the impact of different attributes on consumption intentions, Hanji et al. (2024) explored the influences driving Generation Z's uptake of the Metaverse for adventure tours. Responses to immersive brand encounters spend more significant amounts of time navigating the branded virtual world, according to research by Wongkitrungrueng and Suprawan (2023). The notion of immersive time (Mogaji et al., 2023a, 2023b) suggests that users can enhance their comprehension of the virtual environment's symbolic and practical value through this extended involvement. The beneficial effects of the Metaverse on consumers' life happiness and plans to use it as a means for managing their moods were also investigated by Choi et al. (2023). Their research shows that using the Metaverse to boost your mood or alleviate destructive emotions significantly increases your happiness and makes you more likely to use it.

Numerous studies discuss how brand engagement influences consumer behavior and Non-Fungible Token (NFT) purchases. Establishing a connection between the brand equity of consumers and the Metaverse, Ebrahimi et al. (2024) found that "gamification of marketing activities" impacts the online reputation or image of intangible items (like NFTs) from clients' perspective. Specifically, they looked at how gamification affected NFTs, drawing attention to how consumers felt about premium brands' virtual, immersive experiences. In similar vein, Fortagne & Lis (2024) investigated NFT purchase behavior and found that people want to buy NFTs because they are valuable, rare, and legitimate. This affects consumers' assessment of the benefits and drawbacks of NFT acquisition. In addition to NFTs, Chakraborty et al. (2023a, 2023b) studied dating aspirations in the Metaverse. They underscored the significance of consumer sentiments toward Metaverse marriage as a driver of user participation, employing a hybrid approach. Strict safety and check processes are required to alleviate security and privacy worries and build confidence. The importance of developers contemplating inclusion, equal opportunity, convenience, and protection in digital virtual spaces was highlighted by Zallio and Clarkson (2022), who acknowledged the changing needs of consumers.

In light of the vast amount of scholarly literature available, more research is needed to fully understand consumer behavior about the Metaverse. Investigation must go beyond theory and use data to acquire a deeper understanding. Although several studies have further developed these theoretical underpinnings, our research adds to the expanding collection of literature in this domain. Furthermore, previous studies frequently concentrate on superficial Metaverse activities, neglecting to offer a comprehensive perspective on the difficulties and experiences

that consumers encounter within the Metaverse. While several studies have examined particular facets such as NFTs, dating or immersive experiences with brands (Wongkitrungrueng & Suprawan, 2023), it is imperative to conduct a comprehensive investigation into consumer behavior. Furthermore, from a theoretical point of view, excessive dependence on quantitative methodologies, even when employing substantial populations, results in a limited understanding of lived experiences. According to qualitative insights emphasized by Mogaji et al. (2023a, 2023b), immersive time and Metaverse activities require a mix of qualitative and quantitative perspectives.

2.3. A Conceptual Framework

The Howard Sheth model of consumer behavior (Howard & Sheth, 1969) underpins this study of Metaverse consumer involvement. This model, used in various contexts (Reddipalli, 2020; Grappi et al., 2018; Juan et al., 2017), breaks down the steps involved in purchasing, including problem identification, information search, other options, choices, and monitoring efficacy after purchase. Consumers in the Metaverse seek immersive experiences and digital products because of their potential. Information search gathers details about the virtual environment, such as traditional decision-making. Consumers assess many Metaverse options depending on their choices and usefulness. Virtual products and experiences are purchased, and post-engagement, consumers review their satisfaction with the products and impressions. This Howard Sheth-based customer experience seamlessly translates to the Metaverse, delivering significant understanding into this distinctive digital ecosystem.

The HS model (Howard & Sheth, 1969) can be customized to account for the specific characteristics of virtual realms in the context of the Metaverse. For instance, “presence” in the Metaverse can significantly impact consumer attitudes, decision-making, and emotions. The HS model considers various psychological and important societal components of the Metaverse, including the role of avatars in expressing oneself, how virtual communities influence consumer choices and the strength of social engagement.

The HS model is a very versatile and adaptable choice for various circumstances. Its modification for the Metaverse is based on its unique nature and the requirement to address its developing and ever-evolving features. To adjust to the ever-shifting digital landscape, academics, businesses, and company executives must establish a connection between both the conventional and virtual realms. While other models can be considered, the adjustments made to the HS model provide a practical and efficient method for examining buying habits in the Metaverse. These adjustments ensure that they align with the subtle details of the Metaverse and provide essential perspectives on this new and intricate digital realm. This contributes to our expanding awareness of consumers’ actions in this specific setting. These changes ensure consistency with the Metaverse’s nuances and provide vital details on this new and complex digital reality. This helps our

growing awareness of how consumers act in this situation.

Adjusting the model's focus on encounter handling calls for a deeper and better accurate understanding of consumers' digital transactions in this ever-changing landscape. Compared to conventional purchasing practices, the Metaverse signifies a radical shift. Immersing oneself in encounters, conversations, and digital products is more important than just making purchases (Hadi et al., 2023; Dwivedi et al., 2023a, 2023b). The HS model adequately captures this process due to its well-defined phases. Discovering information about these engaging experiences is now the focus of information search, evaluating alternatives is about selecting between different Metaverse activities, and problem recognition is recast as identifying the possibility for problems. Both the act of buying choice and the review afterward pertain to participating in Metaverse activities.

This study also uses the Consumer's Optimal Stimulation Level (OSL) and Exploratory Buying Behavior Tendency (EBBT) ideas, along with the HS model (Steenkamp & Baumgartner, 1992). These ideas give us a better sense of what makes people buy things and how they act when they have captivating and distinctive interactions or encounters. The OSL theory relies on the field of psychology (Zuckerman, 1994) and contends that people want a certain amount of stimulus and are willing to seek out new things and different experiences when they are unhappy. OSL relates to an individual's tendency to seek new experiences, be inquisitive, and take chances (Baumgartner & Steenkamp, 1996), thus rendering it a highly significant factor in understanding how people interact with the Metaverse.

The EBBT framework, rooted in exploratory searches for information (Steenkamp et al., 1996), provides significant findings regarding how buyers investigate the characteristics and range of brands in the Metaverse. EBBT categorizes exploratory buying behavior into two components: 1) exploratory acquisition of products (EAP) and 2) exploratory information seeking (EIS). EAP represents the inclination towards seeking tactile enjoyment and novelty, whereas EIS signifies mental stimulus gained via information acquisition.

The interplay of these theoretical components within the Metaverse influences purchase habits and engagement. Much research has been conducted on biometrics, avatar interactions, and the creation of digital personas in response to the immersive and dynamic character of the Metaverse (Choi et al., 2023; Chakraborty et al., 2023a, 2023b). Nevertheless, looking at technological advancement and acceptance in the Metaverse via the prism of OSL and EBBT could be much better. This highlights the critical nature of studying Metaverse understanding, participation catalyst, and the obstacles encountered in this ever-changing environment. This endeavor coincides with the strategic advertising efforts that companies are launching to attract early adopters, including gauging Metaverse familiarity (Sethi et al., 2018; Arora et al., 2020). Companies can influence how early adopters see the benefits of the Metaverse by investing in targeted messaging and customized communications. Consumer behavior in the Metaverse is still a complicated and constantly shifting space; thus, understanding its facets is crucial for success.

3. Methodology

Zallio and Clarkson (2022) and Soetan et al. (2021) concur that a subjective empirical inquiry approach was necessary for developing hypotheses and initial knowledge in the expanding field of consumer interaction in the Metaverse. Constructive and interpretive conceptual frameworks were used for the study. Participants were requested to furnish descriptive data and express their perspectives of the Metaverse using interviews with semi-structured questions, which were used to gather data. Previous studies have shown that deep conversations are vital for qualitative research in many studies on buying habits and management (Mogaji et al., 2021; Farinloye et al., 2019). This data collection approach aligns with that.

Immersive Time was defined as the duration and intensity of an individual's engagement with digital content, particularly in contexts where attention is sustained and emotionally absorbed. To operationalise this construct, participants were asked to report their average daily time spent on social media platforms. Additionally, a set of three Likert-scale items (e.g., "I often lose track of time while browsing social media"; "I feel emotionally absorbed when engaging with online content") was used to assess perceived depth of engagement. Responses were recorded on a 5-point scale ranging from 1 ("Strongly disagree") to 5 ("Strongly agree").

The composite Immersive Time score was calculated by averaging the standardized values of time spent and engagement depth, yielding a continuous variable suitable for correlation and regression analyses.

3.1. Participants in the Study

Gen Z in Uzbekistan is surveyed using a convenience sample in this study. Gen Z members are the first to have grown up with constant access to the internet and other forms of digital media. Their fresh take on virtual interactions will significantly impact the Metaverse's future. Businesses and designer labels aiming to engage Gen Z with purposeful and pertinent content must study their Metaverse engagement to learn about their likes, dislikes, demands, and habits. We can learn a lot about the changing face of the Metaverse from this generation's ease with technology, openness to novel digital mediums, and skill in traversing complicated virtual settings (Periyasami & Periyasamy, 2022; Nalbant & Aydin, 2023). This generation is also known for being quick to embrace cutting-edge technological developments. This group of Uzbek consumers from Generation Z was approached in their natural habitat. The research team went to six big Uzbek cities—Tashkent, Samarkand, Bukhara, Namangan, Andijon and Fergana—and encouraged people to take part in the study at gaming arcades. Distributed across these gaming establishments were pamphlets that detailed the research and provided contact details.

3.2. Data Collection

The research team received 96 responses from those interested in participating in

the interviews. In total, 72 individuals were interviewed for the study; their availability and reactions to our filtering queries (which focused on their interest in VR, AR, and the Metaverse) informed our data collection process.

To clarify the adequacy of the convenience sample of 72 participants, the sample size was deemed sufficient based on thematic saturation, which was reached when no new themes emerged after approximately 72 interviews, indicating that additional data were unlikely to yield novel insights. Saturation was monitored continuously throughout data collection to ensure comprehensive coverage of the research questions. To enhance methodological rigor, intercoder reliability was assessed through double-coding of a subset of transcripts, with discrepancies discussed and resolved collaboratively to ensure consistency and validity in thematic interpretation. **Table 1** displays the characteristics of the participants in the study's sample population. Various regions in Uzbekistan were visited between April and July 2023 for face-to-face interviews. The research team mapped out the five stages of the HS theory of consumer behavior into a standardized interview guide, which they then used to conduct the interviews. Using this interview outline, the interviewers could pose the participants unstructured questions that sparked a conversation about their experiences in the Metaverse. To ease the participants' minds, we ensured they would remain anonymous and considered all other ethical factors. The audio recordings of the interviews varied between 25 and 45 minutes.

Table 1. Characteristics of the participants in the study's sample population.

Variant	Category	Frequency (n = 72)	Share (%)
<i>Gender</i>	Male	44	61
	Female	28	39
<i>Age</i>	21 - 23	38	53
	24 - 26	20	28
	27 - 29	14	19
<i>Region</i>	Tashkent	30	42
	Samarkand	8	11
	Bukhara	6	8
	Namangan	10	14
	Andijon	11	15
	Fergana	7	10

3.3. Data Analysis

An expert transcribed each interview, saved it as a PDF file and exported it to NVivo (an analytical-qualitative data program). Iterative qualitative data analysis revealed implicit meanings in participants' responses and Metaverse exposure responses. The study intensively coded, organized, and thematically analyzed Gen Z's Metaverse understanding and participation in narratives in the regions. The findings demonstrate that this conceptualization abstracted topics without dimin-

ishing participants' views.

Table 2. A synopsis of the Metaverse consumer buying patterns.

Theme	Buying pattern	Explanation	Sub-themes
1	Input stage	Tech-savvy customers, particularly those engaged in gaming and virtual reality, consider the metaverse an emerging phenomenon and are willing to learn about it.	<ul style="list-style-type: none"> • Eager for a tour of the Metaverse • Acknowledge Metaverse's rise • Tech-savvy people • Video gamer and VR enthusiast • Exploring the concept of metaverse
2	Perceptual and learning constructs	Videos, influencers, and social interactions are the main ways that consumers discover metaverse knowledge. In their pursuit of knowledge, they partake in activities and demonstrations.	<ul style="list-style-type: none"> • Viewing instructional videos on sites like YouTube • Choosing to follow trend-setters and influencers • Holding conversations with other players and friends • Activities • Understanding their access and accessory challenges
3	Processing stage	Consumers tackle metaverse access difficulties by using desktop versions, borrowing, or purchasing cheaper/used accessories. They borrow accessories from friends.	<ul style="list-style-type: none"> • Desktop exploration • Join friends to borrow accessories • Purchase cheap or used accessories
4	Output stage	Metaverse engagement among consumers includes immersive hours, brand contact, and mistrust towards NFTs. Options considered include gaming and creativity, indicating preparation for the expanding virtual world.	<ul style="list-style-type: none"> • Time commitment and level of engagement • Aspirations for participation • Investment in digital products and NFTs • Perceptions of the brand and customer involvement • Determining options and preparedness • Recalling their metaverse experience • Think about their stake in the NFT
5	Exogenous variables	Consumers engage in metaverse reflection, sharing thoughts, creating content, considering several options for an extended presence and staging carefully planned activities. In addition, they offer complimentary trial lessons.	<ul style="list-style-type: none"> • Talk to friends • Crafting content to impart knowledge • Thinking of extended stay • Curating a Metaverse activity and event schedule • Invite friends to curated events • Offering metaverse access for trial purposes with instructional sessions

This study used Braun & Clarke's (2006) thematic data analysis processes. This involves reading interview transcripts and field notes and becoming familiar with the data. Afterward, themes were created from participants' recordings and personal observations to identify obstacles and opportunities. Parent nodes were formed by evaluating and merging child nodes. Deductive theme analysis was used for parent nodes. Our investigation followed the five stages of the HS theory of consumer behavior: input stage, perceptual and learning constructs, processing stage, output stage, and exogenous variables. Moving the fourth and fifth stages from processing to the output stage harmonized with Metaverse engagement. Each child node (sub-theme) was organized according to topics. After discussing the sub-themes and their optimum integration with the main topic in depth with colleagues, **Table 2** shows a thematic table with 25 sub-themes and five main themes (in line with the HS consumer behavior theory).

4. Findings

The study focused on comprehending consumer behavior in the Metaverse, and our analysis of the results corresponds to the five stages of the HS framework of consumer behavior, as outlined in the data analysis section of this study. The five themes encompassed in this study are 1) input stage, 2) perceptual and learning constructs, 3) processing stage, 4) output stage, and 5) exogenous variables activities in the Metaverse. These themes are further examined and supported by appropriate excerpts from the participants (see Appendix).

Participants reported an average of 3.8 hours per day spent on social media (SD = 1.2), with 67% indicating that they "often" or "very often" lose track of time during usage. The Immersive Time index showed acceptable internal consistency (Cronbach's $\alpha = 0.78$). A Pearson correlation analysis revealed a significant positive relationship between Immersive Time and brand engagement scores ($r = 0.42$, $p < 0.01$), suggesting that higher levels of digital immersion are associated with stronger emotional and behavioral connections to brands.

Furthermore, a linear regression model controlling for age and gender indicated that Immersive Time significantly predicted brand engagement ($\beta = 0.37$, $p < 0.01$), accounting for 18% of the variance ($R^2 = 0.18$). These findings support the hypothesis that sustained and emotionally absorbed digital engagement plays a meaningful role in shaping consumer-brand relationships among Uzbek Generation Z.

4.1. Input Stage

We recruited 72 tech-savvy individuals knowledgeable about the Metaverse and its cultural significance. They noted that brands from various industries were eager to engage with this digital space, which is gaining popularity. Their early exposure to video games, computers, and books sparked their curiosity about the Metaverse. Online forums and YouTube chats kept participants informed about tech news. Many liked immersive games, animated content, and digital avatars,

and some linked their interest in the Metaverse to childhood gaming. They addressed Metaverse learning and resources based on their backgrounds and curiosities. Those with experience in virtual reality (VR) found it easier to immerse themselves in Metaverse environments, enhancing their confidence and enthusiasm while exploring these virtual worlds.

4.2. Perceptual and Learning Constructs

The Metaverse's increasing appeal led many participants to share their experiences with Metaverse research. VR games proved they were interested in this new technology. The media, influencers, and even peers helped develop their views. Users followed TikTok, YouTube, and Instagram influencers for updates. Some participants were persuaded by acquaintances who exposed them to the Metaverse or encouraged them to engage in activities and exchange headsets. Some people grew curious about the Metaverse after visiting events where these technological advances are exhibited, providing them plenty of chances to learn more. After trying the Facebook headset at an event, one participant purchased it.

Our findings showed that consumer perceptions of the Metaverse and the immense prospects affect their desire to learn more and interact with it. This supports e-WOM research (Mogaji et al., 2021; Gökerik et al., 2018) that consumers are enticed by these technologies through reviews and interactions with other consumers.

4.3. Processing Stage

Even with anticipation for the Metaverse, six participants wore headsets and invested about an hour daily. Despite the difficulties with access and accessories, many participants loved their immersed time in the Metaverse. Approximately 45.8% of participants (n = 33) without headsets felt they could not actively participate in the Metaverse, whilst 23.6% (n = 17) had limited internet connection. Participants seek ways to embrace the Metaverse's delights due to these challenges. About 16.6% of participants (n = 12) used Decentraland's desktop version to access the Metaverse. One participant said:

A few participants (n = 4) borrowed headsets from acquaintances, while others (12) tested headsets at technological events in their city. Participants also stated that, like a few acquaintances who exposed them to the Metaverse, they remained interested in it and continued borrowing headsets from their acquaintances. We gained these observations from participant interviews, and one shared her experience.

Several participants bought inexpensive or used headsets to be able to appreciate Metaverse not depending on their friends. Eight participants indicated they got their headset online or used it because it was more affordable. One participant recounted her story.

4.4. Output Stage

Access to technology and leisure time affected Metaverse participation. Some par-

ticipants with Metaverse accessories spent a lot of time there. This devoted time limit permitted inquiries, brand involvement, and personal connections. Another participant, who had been spending five hours a day online before, was captivated by the increasing allure of the Metaverse. With her new headset, she immersed herself more in this virtual world. These stories demonstrate that the Metaverse has begun to take a significant chunk of individuals' spare time.

Participant reasons for Metaverse interaction varied. Interactive and immersive experiences were a dominant theme. Virtual stores and user interaction enthralled them, and they eagerly checked for cultural activities like performances and researched brand offerings. Participants' gaming experience and excitement of new encounters drove these engagements. Participants shared expectations and experiences.

It is crucial for companies to recognize the Metaverse as a key location for their business. The innovative technology has the potential to attract a virtual audience, including skeptics and those with a nostalgic connection to its past iterations. This was the sentiment expressed by a female participant from Andijon, aged 24 - 26.

About 52% of participants were keen on Metaverse financial activities, including trading and buying NFTs. This involvement shows that virtual currencies and digital goods are becoming increasingly common. Participants reported safe and easy Metaverse Wallet transactions. One participant (Male, 24 - 26, Tashkent) was pleased with his wallet:

Yet, other participants were doubtful about the true worth of NFTs, which are unique digital assets that are bought and sold online, contrasting them to over-hyped assets.

Many participants wanted to explain why they were engaging with companies in the Metaverse, notwithstanding their increasing popularity and brand investments. Limited possibilities and transitory activities needed to match expectations of constant interaction worried this group. This suggests that brands struggle to satisfy all Metaverse consumers. Given their worries, some individuals considered alternatives to Metaverse participation. These options matched participants' preferences. Gaming on Roblox and augmented reality experiences satisfied their entertainment needs, while VRChat and other communication platforms connected them. Participants also used VR technologies to make 3D designs and sculptures. Participants shared their experiences.

Their willingness to accept anything the ever-changing Metaverse world provides is reflected in their investigation of alternatives. Participants' involvement with the Metaverse varied in depth, purpose, and focus, illuminating this overarching theme. The participants' reactions to this new virtual world ranged from dedicated immersion time to doubts regarding NFTs. Due to this diverse engagement landscape, brands and developers must adapt to meet the different expectations and desires of users as the Metaverse evolves.

4.5. Exogenous Variables

Participants were exceedingly favorable when asked to evaluate Metaverse activi-

ties post-engagement, expressing hope for the Metaverse's future. Participants were optimistic about the Immersive Metaverse's expanding popularity. Some cited their Metaverse technology investment as proof of its future importance.

Looking back, Metaverse participants expressed a strong desire for additional activities that were not just engaging, but also interesting, to enhance their experience. This underscores their active engagement with the Metaverse and their eagerness for more diverse content.

Some admitted that boredom could result from no contact or plan. Participants expected brands and organizations to provide more content.

However, NFT buyers (19%) were concerned about their investments. According to prior research (Albayati et al., 2020), NFT volatility increased fear and unpredictability. Many wondered if their NFT's value would ultimately be appreciated.

Experienced Metaverse users are not just eager, but also enthusiastic about contributing and attracting others to this exciting world. Some have taken to platforms like TikTok and YouTube to share their experiences, while others are helping friends generate NFTs. There's a sense of exploration and learning, with some participants even considering acquiring new skills to navigate the Metaverse and make a living.

Participants who relished their Metaverse experiences were filled with joy and excitement. They were eager to come back, buy headsets, and participate in numerous activities. Some even scheduled their Metaverse excursions with friends to maximize their time and fun.

We also examined participants' Metaverse journeys—awareness, seeking information, involvement, and evaluation. Despite obstacles, participants wanted to see the Metaverse. (see [Table 2](#)—a synopsis of the Metaverse consumer buying patterns.

Although some felt negatively, the Metaverse was mostly viewed positively. Based on our research into digital marketing, advertisements, the purchasing process, and brand loyalty, it's evident that consumers now have a better understanding of the Metaverse. This indicates that people are increasingly willing to engage with the Metaverse as a means to bridge the digital divide. Consequently, brands can enhance their consumer engagement within the Metaverse, aligning with the findings of our study's HS model.

Our study found exploratory purchase behavior among Uzbek Metaverse-interested consumers in the Input Stage. Metaverse users may adopt new technology and innovations. Our research also found a contradiction: while customers value exploratory purchases, Metaverse options and activities typically disappoint.

Activities that happen around the clock must always live up to their promise so that no one is unhappy. Moreover, our research showed that even if customers have the EBBT (Exploratory Buying Behavior Tendency), businesses must continue to provide offerings which encourage people to buy various products in the Metaverse. For example, even though one person was a gamification fanatic, oth-

ers pointed out that the fact that they were unable to compete with people from around the world at any time was a drawback. This shows a need for complete Metaverse services that can be accessed anywhere worldwide.

5. Discussion

This research empirically examines Metaverse customer behavior, harmonizing with Arya et al. (2023) on XR-based gamification marketing. Our main goal was to further enhance our comprehension of this growing digital domain by expanding on conceptual studies (Hadi et al., 2023; Dwivedi et al., 2023a, 2023b) and adopting the HS model. We intended to shed light on Metaverse consumer involvement dynamics, which are understudied. Our sample size and scope may seem small, but we collected qualitative data from Uzbek game enthusiasts, and the Metaverse remains in its infancy. Thus, gathering a significant, diversified sample that correctly represents the Metaverse economy is difficult.

Our study lays the groundwork for a better knowledge of Metaverse consumer behavior and provides opportunities for further research. We also advance the notion of Immersive Time (ImT) (Mogaji et al., 2023a, 2023b), which improves our knowledge of how consumers interact in immersive digital settings. In the Metaverse, ImT explores how consumers spend time, connect with digital experiences, and capitalize on virtual interactions. This spatial viewpoint helps us understand consumer interaction, especially in the Metaverse, where people spend a lot of time.

We use the HS Model of Consumer Behavior HS to study how consumers interact with the Metaverse because its framework outlines consumer decision-making processes. The Metaverse offers a parallel choice journey for customers evaluating their digital participation. The HS model changed “purchase” to “engagement” and “post-purchase” to “post-engagement” for a reason. To match Metaverse interactions, experiences, and activities, these changes were made. These changes deviate from the HS model. Still, this deviation was necessary to simulate the Metaverse’s unique and developing dynamics (Mogaji, 2023). We believe these adjustments are essential to exploring new ways that will shape emerging Metaverse purchasing habit assumptions and hypotheses.

Our research also acknowledges the “awareness” stage, essential for customers entering the Metaverse. To gain more understanding, we correlate this with Optimum Stimulus Level (OSL) and Exploratory Buying Behavior Tendency. EBBT’s integration with OSL shows how firms’ cues can motivate Metaverse uptake. Our survey participants believe the Metaverse can boost brand presence due to its uniqueness and digital exploration. Nostalgia’s influence on consumer involvement shows EBBT’s significance to Uzbek consumers. There is a correlation between risk-taking and a desire for variety to optimal experiences, which is supported by our research (Gañac, 2018; Dwivedi et al., 2022a, 2022b; Steenkamp et al., 1996; Lim et al., 2023). These findings underscore the importance of behavior that seeks variety for avatars and Metaverse applications.

Our findings are shown in **Figure 1**, which depicts consumers' interactions with the Metaverse, from understanding and knowledge pursuit to alternative participation choices, engaged participation, and immersive time. Our Metaverse consumer engagement research examines motivational factors, behaviors related to information seeking, and interaction stages. Notably, favorable Metaverse experiences generate persistent involvement, creating problems and possibilities for management and technology developers. We now have a complete and contextual view of Metaverse consumer behavior, which may add to the ongoing conversation on this ever-evolving digital ecosystem.

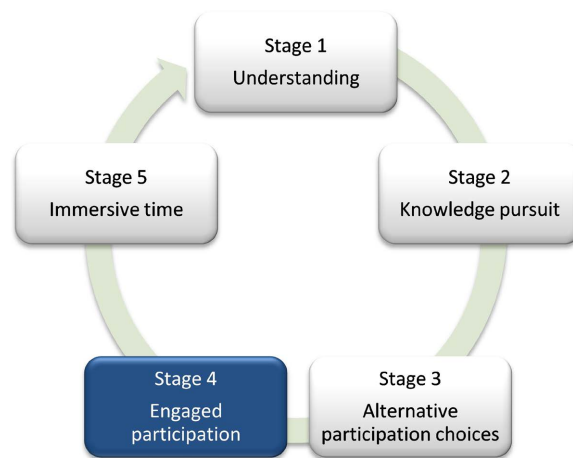


Figure 1. Consumer conduct in relation to the Metaverse. Author's work drawn from the HS model (Howard & Sheth, 1969) of consumer behavior.

5.1. Theory Implications

This research makes theoretical advances to Metaverse, consumer behavior, and acceptance of technology.

Firstly, we provide empirical insights into consumer behavior apart from theoretical studies and speculative exposition in the Metaverse. Consequently, our study encompasses seeking knowledge actions (referring to influencers and studying material exploration), alternate access means (through the use of various means or renting accessories), and post-engagement reviews. Our research classifies consumer conduct before, during, and after Metaverse participation, as shown in **Figure 1**.

Second, we apply the Howard Sheth (HS) model of consumer behavior theory (Howard & Sheth, 1969) to examine technology's impact on customer decisions, as shown in (Reddipalli, 2020; Grappi et al., 2018; Juan et al., 2017). Our work is the initial attempt to use OSL and EBBT in HS. We raise awareness by examining how Gen Z's Optimal Stimulus Level (OSL) and Exploratory Buying Behavior Tendency (EBBT) affect how they act in the Metaverse. Since Metaverse interaction involves several activities, we extend the pursuit stage into a broader engagement phase. This fits seamlessly with the immersive era, revealing insights into

how customers will actively participate in the Metaverse. The study seamlessly integrates EBBT and OSL into the HS model, effectively pushing the boundaries of Metaverse research, digital marketing strategies, and consumer behavior beyond mere theoretical debates. Furthermore, this alignment sheds light on consumers' engagement patterns within the Metaverse, emphasizing the need for a holistic understanding. By incorporating EBBT and OSL into the HS model, the study extends the discourse beyond speculative dialogues, fostering a deeper exploration of Metaverse dynamics, consumer behavior, and digital marketing practices.

Third, we improve ImT knowledge. ImT is crucial for brands since longer consumer interactions boost knowledge, participation, and data. This research quantifies and analyzes immersive time, including consumer buying habits and their determinants. Given the possibility of compromise between Metaverse and other media engagement, it begs concerns about how this profound immersion might affect other forms of advertising. The study examines users' approaches to resolving accessory-related Metaverse access issues, revealing how these items affect future Metaverse usage stimulation.

5.2. Managerial Impact

We found that our investigation can help companies and their products traverse the Metaverse and communicate with consumers. Understanding how consumers act in the Metaverse is crucial as it develops. Brands should actively interact with consumers in digital spaces to promote and sell products. This research suggests three significant management implications.

1) Managers must concentrate and develop engagement and involvement tactics. Immersive information and Metaverse activities boosted participation in our study. As a result, event planners and content makers should notify their intended audience about these activities. Furthermore, raising consumer awareness of immersive content and events through timely and efficient communication promotes engagement. It requires specific event modification to invite potential clients to the Metaverse. [Palmer \(2022\)](#) states that swift and effective interaction substantially impacts participation rates. Increased Metaverse participation improves service quality and quantity, creating a more vibrant and dynamic Metaverse.

2) It is important for administrators and marketers to evaluate how consumers interact and experience their products or services as the Metaverse is transforming interaction, choice-making, and general consumer satisfaction. Brands can take advantage of this transition by offering customized avatars, content, and products ([Kim, 2021](#); [Gursoy et al., 2022](#); [Shen et al., 2021](#)). To achieve this, machine learning and AI are essential in creating personalized user experiences ([Ooi et al., 2023](#)). It is also important to prioritize immersive Metaverse interaction and real-world problem-solving. Nevertheless, it is imperative to contemplate morality, confidentiality of information, and inclusiveness within this ever-evolving framework.

3) Companies should try several marketing methods. Our research on post-engagement reviews of Metaverse behaviors suggests advertising, virtual commerce, AR, and VR experiences as attractive marketing options. Companies that smoothly blend virtual and real-world interactions are likely to build lasting connections with consumers. Promos, influencer collaborations, and partnership arrangements are alternatives for brands wishing to enter the Metaverse. Partners with technology businesses, VR developers, and Metaverse specialists can offer innovative tools and infrastructure to help brands develop immersive and compelling consumer experiences.

Ultimately, brands joining the Metaverse must prioritize interpersonal interaction, customization, and immersive interaction. They have to modify how they operate to match consumer expectations in this changing digital world. Building and maintaining Metaverse customer confidence requires integrity and diversity. The Metaverse offers numerous possibilities for individuals who can negotiate its intricacies and prioritize user engagement and happiness.

6. Conclusion

In summary, our research seeks to provide an in-depth understanding of consumer perspectives within the Metaverse, encompassing a wide range of experiences beyond gaming. The Metaverse is currently in its formative stages. As such, it is essential to recognize the limitations of our study, particularly its small sample size and specific focus on Gen Z in Uzbekistan. Gathering a more extensive and diverse sample from the Metaverse marketplace requires significant time and effort. Still, it is a critical step toward achieving a holistic understanding of consumer behaviors in this evolving digital landscape.

Looking ahead, future studies can build upon the groundwork established by our research. By contributing to the ongoing discussion about consumer behavior in the Metaverse, our work lays the foundation for more extensive investigations that can provide richer insights. One area for further exploration could be the innovative concept of “immersive time,” which refers to how users perceive and experience time in virtual environments. Investigating this concept could significantly enhance our understanding of consumer engagement and behavior within the Metaverse.

Moreover, examining the intricate relationship between immersive experiences and various psychological constructs, such as customer engagement and emotional attachment, is worthwhile. Understanding how these dynamics interact may reveal critical insights into their influence on consumer behavior, particularly regarding brand loyalty and repeat interactions.

By delving into these topics, our study contributes valuable perspectives to the broader field of research on virtual environments and helps inform strategic approaches for businesses operating within the Metaverse. This will aid in refining marketing strategies and fostering deeper connections between brands and consumers in these digital spaces.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- Albayati, H., Kim, S. K., & Rho, J. J. (2020). Accepting Financial Transactions Using Blockchain Technology and Cryptocurrency: A Customer Perspective Approach. *Technology in Society*, 62, Article ID: 101320. <https://doi.org/10.1016/j.techsoc.2020.101320>
- Arora, R., Duggal, V., & Kaur, J. (2020). To Study the Impact of Social Media Marketing on the Buying Behavior of Millennial Parents. *Journal of Asia Entrepreneurship and Sustainability*, 16, 57-95.
- Arya, V., Sambyal, R., Sharma, A., & Dwivedi, Y. K. (2023). Brands Are Calling Your Avatar in Metaverse—A Study to Explore XR-Based Gamification Marketing Activities & Consumer-Based Brand Equity in Virtual World. *Journal of Consumer Behaviour*, 23, 556-585. <https://doi.org/10.1002/cb.2214>
- Ayiter, E. (2019). Spatial Poetics, Place, Non-Place and Storyworlds: Intimate Spaces for Metaverse Avatars. *Technoetic Arts*, 17, 155-169. https://doi.org/10.1386/tear_00013_1
- Barrera, K. G., & Shah, D. (2023). Marketing in the Metaverse: Conceptual Understanding, Framework, and Research Agenda. *Journal of Business Research*, 155, Article ID: 113420. <https://doi.org/10.1016/j.jbusres.2022.113420>
- Baumgartner, H., & Steenkamp, J. E. M. (1996). Exploratory Consumer Buying Behavior: Conceptualization and Measurement. *International Journal of Research in Marketing*, 13, 121-137. [https://doi.org/10.1016/0167-8116\(95\)00037-2](https://doi.org/10.1016/0167-8116(95)00037-2)
- Braun, V., & Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, 3, 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Chakraborty, D., Patre, S., & Tiwari, D. (2023a). Metaverse Mingle: Discovering Dating Intentions in Metaverse. *Journal of Retailing and Consumer Services*, 75, Article ID: 103509. <https://doi.org/10.1016/j.jretconser.2023.103509>
- Chakraborty, D., Polisetty, A., Khorana, S., & Buhalis, D. (2023b). Use of Metaverse in Socializing: Application of the Big Five Personality Traits Framework. *Psychology & Marketing*, 40, 2132-2150. <https://doi.org/10.1002/mar.21863>
- Choi, D., Lee, H. K., & Kim, D. Y. (2023). Mood Management through Metaverse Enhancing Life Satisfaction. *International Journal of Consumer Studies*, 47, 1533-1543. <https://doi.org/10.1111/ijcs.12934>
- Dwivedi, Y. K., Hughes, L., Cheung, C. M. K., Conboy, K., Duan, Y., Dubey, R. et al. (2022a). Editorial: How to Develop a Quality Research Article and Avoid a Journal Desk Rejection. *International Journal of Information Management*, 62, Article ID: 102426. <https://doi.org/10.1016/j.ijinfomgt.2021.102426>
- Dwivedi, Y. K., Hughes, L., Kar, A. K., Baabdullah, A. M., Grover, P., Abbas, R. et al. (2022b). Climate Change and COP26: Are Digital Technologies and Information Management Part of the Problem or the Solution? An Editorial Reflection and Call to Action. *International Journal of Information Management*, 63, Article ID: 102456. <https://doi.org/10.1016/j.ijinfomgt.2021.102456>
- Dwivedi, Y. K., Hughes, L., Wang, Y., Alalwan, A. A., Ahn, S. J., Balakrishnan, J. et al. (2023a). Metaverse Marketing: How the Metaverse Will Shape the Future of Consumer Research and Practice. *Psychology & Marketing*, 40, 750-776. <https://doi.org/10.1002/mar.21767>
- Dwivedi, Y. K., Ismagilova, E., Hughes, D. L., Carlson, J., Filieri, R., Jacobson, J. et al.

- (2021). Setting the Future of Digital and Social Media Marketing Research: Perspectives and Research Propositions. *International Journal of Information Management*, 59, Article ID: 102168. <https://doi.org/10.1016/j.ijinfomgt.2020.102168>
- Dwivedi, Y. K., Kshetri, N., Hughes, L., Rana, N. P., Baabdullah, A. M., Kar, A. K. et al. (2023b). Exploring the Darkverse: A Multi-Perspective Analysis of the Negative Societal Impacts of the Metaverse. *Information Systems Frontiers*, 25, 2071-2114. <https://doi.org/10.1007/s10796-023-10400-x>
- Ebrahimi, E., Irani, H. R., Abbasi, M., & Abedini, A. (2024). The Effect of Gamification on Brand Equity and Desirable Consumer Behaviors in Online Retail Stores: The Mediating Role of Brand Engagement. *Interdisciplinary Journal of Management Studies (Formerly known as Iranian Journal of Management Studies)*, 17, 379-391.
- Farinloye, T., Mogaji, E., Aririguzoh, S., & Kieu, T. A. (2019). Qualitatively Exploring the Effect of Change in the Residential Environment on Travel Behaviour. *Travel Behaviour and Society*, 17, 26-35. <https://doi.org/10.1016/j.tbs.2019.06.001>
- Fortagne, M. A., & Lis, B. (2024). Determinants of the Purchase Intention of Non-Fungible Token Collectibles. *Journal of Consumer Behaviour*, 23, 1032-1049. <https://doi.org/10.1002/cb.2264>
- Gañac, C. G. (2018). Investigating Consumer Optimum Stimulation Level and Exploratory Online Buying Behavior. *DLSU Business & Economics Review*, 28, 67-85.
- Gökerik, M., Gürbüz, A., Erkan, I., Mogaji, E., & Sap, S. (2018). Surprise Me with Your Ads! The Impacts of Guerrilla Marketing in Social Media on Brand Image. *Asia Pacific Journal of Marketing and Logistics*, 30, 1222-1238. <https://doi.org/10.1108/apjml-10-2017-0257>
- Golf-Papez, M., Heller, J., Hilken, T., Chylinski, M., de Ruyter, K., Keeling, D. I. et al. (2022). Embracing Falsity through the Metaverse: The Case of Synthetic Customer Experiences. *Business Horizons*, 65, 739-749. <https://doi.org/10.1016/j.bushor.2022.07.007>
- Grappi, S., Romani, S., Bagozzi, R. P., Hoffman, A. J., Henn, R., Jia, J. J., Wu, Y. et al. (2018). Howard Sheth Model of Consumer Behaviour—CEOpedia | Management Online. *Journal of Cleaner Production*, 10, 157-167
- Gursoy, D., Malodia, S., & 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, 527-534. <https://doi.org/10.1080/19368623.2022.2072504>
- Hackl, C., Lueth, D., Bartolo, T., Arkontaky, J., & Siu, Y. (2022). *Navigating the Metaverse: A Guide to Limitless Possibilities in a Web 3.0 World*. Wiley.
- Hadi, R., Melumad, S., & Park, E. S. (2023). The Metaverse: A New Digital Frontier for Consumer Behavior. *Journal of Consumer Psychology*, 34, 142-166. <https://doi.org/10.1002/jcpy.1356>
- Hanji, S., Desai, S., Hanji, S. S., Navalgund, N., & Tapashetti, R. B. (2024). Digital Frontiers: Gen-Z's Adventure Tourism in the Metaverse. In A. Iglesias, J. Shin, B. Patel, & A. Joshi (Eds.), *Proceedings of World Conference on Information Systems for Business Management* (pp. 479-490). Springer Nature Singapore. https://doi.org/10.1007/978-981-99-8349-0_38
- Helm, R., & Landschulze, S. (2009). Optimal Stimulation Level Theory, Exploratory Consumer Behaviour and Product Adoption: An Analysis of Underlying Structures across Product Categories. *Review of Managerial Science*, 3, 41-73. <https://doi.org/10.1007/s11846-009-0024-7>
- Howard, J. A., & Sheth, J. N. (1969). *The Theory of Buyer Behavior*. John Wiley & Sons.

- Hu, C., Kumar, S., Huang, J., & Ratnavelu, K. (2017). Disinhibition of Negative True Self for Identity Reconstructions in Cyberspace: Advancing Self-Discrepancy Theory for Virtual Setting. *PLOS ONE*, *12*, e0175623. <https://doi.org/10.1371/journal.pone.0175623>
- Juan, Y., Hsu, Y., & Xie, X. (2017). Identifying Customer Behavioral Factors and Price Premiums of Green Building Purchasing. *Industrial Marketing Management*, *64*, 36-43. <https://doi.org/10.1016/j.indmarman.2017.03.004>
- Kaur, J., Mogaji, E., Paliwal, M., Jha, S., Agarwal, S., & Mogaji, S. A. (2024). Consumer Behavior in the Metaverse. *Journal of Consumer Behaviour*, *23*, 1720-1738. <https://doi.org/10.1002/cb.2298>
- Kim, J. (2021). Advertising in the Metaverse: Research Agenda. *Journal of Interactive Advertising*, *21*, 141-144. <https://doi.org/10.1080/15252019.2021.2001273>
- Kim, J., Kim, D., & Kim, H. (2017). Consumer Attitudes toward Virtual Reality: An Empirical Study. *International Journal of Human-Computer Interaction*, *33*, 267-280.
- Kolesnichenko, A., McVeigh-Schultz, J., & Isbister, K. (2019). Understanding Emerging Design Practices for Avatar Systems in the Commercial Social VR Ecology. In *Proceedings of the 2019 on Designing Interactive Systems Conference* (pp. 241-252). ACM. <https://doi.org/10.1145/3322276.3322352>
- Koohang, A., Nord, J. H., Ooi, K., Tan, G. W., Al-Emran, M., Aw, E. C. et al. (2023). Shaping the Metaverse into Reality: A Holistic Multidisciplinary Understanding of Opportunities, Challenges, and Avenues for Future Investigation. *Journal of Computer Information Systems*, *63*, 735-765. <https://doi.org/10.1080/08874417.2023.2165197>
- Kye, B., Han, N., Kim, E., Park, Y., & Jo, S. (2021). Educational Applications of Metaverse: Possibilities and Limitations. *Journal of Educational Evaluation for Health Professions*, *18*, Article No. 32. <https://doi.org/10.3352/jeehp.2021.18.32>
- Lee, L. H., Braud, T., Zhou, P., Wang, L., Xu, D., Lin, Z., & Hui, P. (2021). *All One Needs to Know about Metaverse: A Complete Survey on Technological Singularity, Virtual Eco-System, and Research Agenda*. arXiv: 2110.05352.
- Lim, W. M., Kumar, S., Pandey, N., Verma, D., & Kumar, D. (2023). Evolution and Trends in Consumer Behaviour: Insights from *Journal of Consumer Behaviour*. *Journal of Consumer Behaviour*, *22*, 217-232. <https://doi.org/10.1002/cb.2118>
- Mogaji, E. (2023). Metaverse Influence on Transportation: A Mission Impossible? *Transportation Research Interdisciplinary Perspectives*, *22*, Article ID: 100954.
- Mogaji, E., Dwivedi, Y. K., & Raman, R. (2023a). Fashion Marketing in the Metaverse. *Journal of Global Fashion Marketing*, *15*, 115-130. <https://doi.org/10.1080/20932685.2023.2249483>
- Mogaji, E., Soetan, T. O., & Kieu, T. A. (2021). The Implications of Artificial Intelligence on the Digital Marketing of Financial Services to Vulnerable Customers. *Australasian Marketing Journal*, *29*, 235-242. <https://doi.org/10.1016/j.ausmj.2020.05.003>
- Mogaji, E., Wirtz, J., Belk, R. W., & Dwivedi, Y. K. (2023b). Immersive Time (ImT): Conceptualizing Time Spent in the Metaverse. *International Journal of Information Management*, *72*, Article ID: 102659. <https://doi.org/10.1016/j.ijinfomgt.2023.102659>
- Nalbant, K. G., & Aydin, S. (2023). Development and Transformation in Digital Marketing and Branding with Artificial Intelligence and Digital Technologies Dynamics in the Metaverse Universe. *Journal of Metaverse*, *3*, 9-18. <https://doi.org/10.57019/jmv.1148015>
- Ooi, K., Tan, G. W., Aw, E. C., Cham, T., Dwivedi, Y. K., Dwivedi, R. et al. (2023). Banking in the Metaverse: A New Frontier for Financial Institutions. *International Journal of Bank Marketing*, *41*, 1829-1846. <https://doi.org/10.1108/ijbm-03-2023-0168>

- Othman, A., Chemnad, K., Hassanien, A. E., Tlili, A., Zhang, C. Y., Al-Thani, D. et al. (2024). Accessible Metaverse: A Theoretical Framework for Accessibility and Inclusion in the Metaverse. *Multimodal Technologies and Interaction*, 8, Article 21. <https://doi.org/10.3390/mti8030021>
- Palmer, S. (2022). *The EU Threw a 'Gala' Launch Party for Its €387,000 Metaverse- and Just '6 People' Showed Up*. <https://www.politico.eu/article/eu-threw-e387k-meta-gala-nobody-came-big-tech/>
- Park, J., & Kim, N. (2023). Examining Self-Congruence between User and Avatar in Purchasing Behavior from the Metaverse to the Real World. *Journal of Global Fashion Marketing*, 15, 23-38.
- Periyasami, S., & Periyasamy, A. P. (2022). Metaverse as Future Promising Platform Business Model: Case Study on Fashion Value Chain. *Businesses*, 2, 527-545. <https://doi.org/10.3390/businesses2040033>
- Reddipalli, R. (2020). Howard Sheth Model of Consumer Behaviour on Buying a Smartphone. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3658496>
- Sethi, R. S., Kaur, J., & Wadera, D. (2018). Purchase Intention Survey of Millennials towards Online Fashion Stores. *Academy of Marketing Studies Journal*, 22, 1-16
- Shah, D., & Murthi, B. P. S. (2021). Marketing in a Data-Driven Digital World: Implications for the Role and Scope of Marketing. *Journal of Business Research*, 125, 772-779. <https://doi.org/10.1016/j.jbusres.2020.06.062>
- Shen, B., Tan, W., Guo, J., Zhao, L., & Qin, P. (2021). How to Promote User Purchase in Metaverse? A Systematic Literature Review on Consumer Behavior Research and Virtual Commerce Application Design. *Applied Sciences*, 11, Article 11087. <https://doi.org/10.3390/app112311087>
- Soetan, T. O., Mogaji, E., & Nguyen, N. P. (2021). Financial Services Experience and Consumption in Nigeria. *Journal of Services Marketing*, 35, 947-961. <https://doi.org/10.1108/jsm-07-2020-0280>
- Soliman, M. M., Ahmed, E., Darwish, A., & Hassanien, A. E. (2024). Artificial Intelligence Powered Metaverse: Analysis, Challenges and Future Perspectives. *Artificial Intelligence Review*, 57, Article No. 36. <https://doi.org/10.1007/s10462-023-10641-x>
- Song, C., Shin, S., & Shin, K. (2023). Exploring the Key Characteristics and Theoretical Framework for Research on the Metaverse. *Applied Sciences*, 13, Article 7628. <https://doi.org/10.3390/app13137628>
- Steenkamp, J. E. M., & Baumgartner, H. (1992). The Role of Optimum Stimulation Level in Exploratory Consumer Behavior. *Journal of Consumer Research*, 19, 434-448. <https://doi.org/10.1086/209313>
- Steenkamp, J. E. M., Baumgartner, H., & van der Wulp, E. (1996). The Relationships among Arousal Potential, Arousal and Stimulus Evaluation, and the Moderating Role of Need for Stimulation. *International Journal of Research in Marketing*, 13, 319-329. [https://doi.org/10.1016/s0167-8116\(96\)00013-4](https://doi.org/10.1016/s0167-8116(96)00013-4)
- Sung, E., Kwon, O., & Sohn, K. (2023). NFT Luxury Brand Marketing in the Metaverse: Leveraging Blockchain-Certified NFTs to Drive Consumer Behavior. *Psychology & Marketing*, 40, 2306-2325. <https://doi.org/10.1002/mar.21854>
- Wongkitrungrueng, A., & Suprawan, L. (2023). Metaverse Meets Branding: Examining Consumer Responses to Immersive Brand Experiences. *International Journal of Human-Computer Interaction*, 40, 2905-2924. <https://doi.org/10.1080/10447318.2023.2175162>
- Zallio, M., & Clarkson, P. J. (2022). Designing the Metaverse: A Study on Inclusion, Diver-

sity, Equity, Accessibility and Safety for Digital Immersive Environments. *Telematics and Informatics*, 75, Article ID: 101909. <https://doi.org/10.1016/j.tele.2022.101909>

Zhao, Y., Jiang, J., Chen, Y., Liu, R., Yang, Y., Xue, X. et al. (2022). Metaverse: Perspectives from Graphics, Interactions and Visualization. *Visual Informatics*, 6, 56-67.

<https://doi.org/10.1016/j.visinf.2022.03.002>

Zuckerman, M. (1994). *Behavioral Expressions and Biosocial Bases of Sensation Seeking*. Cambridge University Press.

Zwass, V. (2014). Co-Creation: Toward a Taxonomy and an Integrated Research Perspective. *International Journal of Electronic Commerce*, 15, 11-48.

<https://doi.org/10.2753/jec1086-4415150101>

Appendix

Input stage

Each of our 72 participants was tech-savvy and conscious of the Metaverse. Participants noticed Metaverse's increasing popularity, and every brand sought access. Gaming, technology, and literature prompted our participants to enter the Metaverse. They followed tech news and engaged with various media, including Internet and YouTube discussions about the Metaverse. Participants were more drawn to the Metaverse by games, animations, and avatar personalities. Others described how games affected their Metaverse interest as adolescents.

I watched "Quest World: The Digital Nexus". The story was about a group of unlikely heroes who find Quest World, a magical virtual environment accessible only with headsets. They discover ancient prophecies, secret groups, and a power battle that spans both planets as they investigate. —Male, 22 - 24, Samarkand

I liked "Realm of the Lost Quest". In a dark future, rebels flee to Quest World. They find mythological animals, lost civilizations, and a sinister goal threatening both realms. They must discover who built Quest World and why as alliances and betrayals arise. I was captivated!—Female, 26 - 28, Tashkent

A few people were eager to voice their opinions on the Metaverse; one particularly outspoken participant said:

A metaverse is an old notion. Previously, it meant cyberspace-like VR scapes. Given the emergence of new advancements incorporated into the Metaverse, it is more accurate to classify it as a platform akin to the internet instead of simply a technology—Male, 26 - 28, Bukhara

Users' attitudes toward knowledge acquisition and using these tools were influenced by their familiarity with and motivation to research Metaverse. Their virtual reality knowledge might be transferred to the Metaverse.

Perceptual and learning constructs

The Metaverse's increasing appeal led many participants to share their Metaverse research experiences. VR games proved they were interested in this new technology. The media, influencers, and even peers helped develop their views. Users followed TikTok, YouTube, and Instagram influencers for updates.

One participant recounted:

Metaverse was introduced to me through a personal YouTuber. Furthermore, numerous YouTubers and content providers have discussed it. An influencer also piqued her interest in Metaverse. My Instagram Influencer shared a Metaverse reel. In one clip, he strolls through a scary graveyard, striking ghosts. In another clip, he wears a VR helmet and makes punching gestures. Female, 21 - 23, Namangan.

Some participants were persuaded by acquaintances who exposed them to the Metaverse or encouraged them to engage in activities and exchange headsets. According to one:

My friend purchased an Oculus Quest 2 from America. It accompanied him to Uzbekistan to see his family members. He presented it to me and suggested a

game. The sights and acoustics enhanced my game experience, similar to real life. Male—24 - 26, Andijon.

Some people grew curious about the Metaverse after visiting events where these technological advances are exhibited, providing them plenty of chances to learn more. After trying the Facebook headset at an event, one participant purchased it:

I participated in a downtown mall demo of this technology. Meta's recent hire, a former Facebook employee, demonstrated Metaverse gear. I tried it since the premise intrigued me, and its resemblance to Questworld shocked me—Male, 26 - 28, Tashkent.

Our findings showed that consumer perceptions of the Metaverse and the immense prospects affect their desire to learn more and interact with it. This supports e-WOM research (Mogaji et al., 2021; Gökerik et al., 2018) that consumers are enticed by these technologies through reviews and interactions with other consumers.

Processing stage

Even with anticipation for the Metaverse, six participants wore headsets and invested about an hour daily. Despite the difficulties with access and accessories, many participants loved their immersed time in the Metaverse. Approximately 45.8% of participants (n = 33) without headsets felt they could not actively participate in the Metaverse, whilst 23.6% (n = 17) had limited internet connection. Participants seek ways to embrace the Metaverse's delights due to these challenges. About 16.6% of participants (n = 12) used Decentraland's desktop version to access the Metaverse. One participant said:

A different option is to access Metaverse from a desktop computer. Anyone can then create an avatar, move about using the keyboard and mouse, and interact with other users, and ask my friend to walk with me at specific times. —Female, 21 - 23, Fergana

A few participants (n = 4) borrowed headsets from acquaintances, while others (12) tested headsets at technological events in their city. Participants also stated that, like a few acquaintances who exposed them to the Metaverse, they remained interested in it and continued borrowing headsets from their acquaintances. We gained these observations from participant interviews, and one shared her experience:

My mother assumes we are talking about beauty and cosmetics, but I take my friend's headset to explore the Metaverse at her place. Since her uncle purchased her the headset, she introduced me to Metaverse, which was great. Put it on and play—Female, 24 - 26, Tashkent

Several participants bought inexpensive or used headsets to be able to appreciate Metaverse not depending on their friends. Eight participants indicated they got their headset online or used it because it was more affordable. One participant recounted her story.

I was hesitant to keep making the long journey to my friend's place since I was looking for one for myself, but these headsets are expensive, so I discovered a used

one on eBay and liked it. It was cheaper than purchasing one from the store—Female, 26 - 28, Samarkand

Participants were driven by a strong desire to access the Metaverse, a key theme in their technology adoption journey. They were open to exploring alternate versions or purchasing a more affordable one to increase their involvement with and use of such technology.

Output stage

Access to technology and leisure time affected Metaverse participation. Some participants with Metaverse accessories spent a lot of time there. One regular Metaverse user outlined her schedule:

I could easily spend two or three hours daily in the Metaverse with just my phone, computer, internet, and headphones—and I could always add more time if needed—Female, 21 - 23, Namangan

This devoted time limit permitted inquiries, brand involvement, and personal connections. Another participant, who had been spending five hours a day online before, was captivated by the increasing allure of the Metaverse. With her new headset, she immersed herself more in this virtual world. These stories demonstrate that the Metaverse has begun to take a significant chunk of individuals' spare time.

Participant reasons for Metaverse interaction varied. Interactive and immersive experiences were a dominant theme. Virtual stores and user interaction enthralled them, and they eagerly checked for cultural activities like performances and researched brand offerings. Participants' gaming experience and excitement of new encounters drove these engagements. Participants shared expectations and experiences.

Gaming is my passion, so the Metaverse suits me. Cool accessories have helped me acclimate. —Male, 24 - 26, Bukhara.

It is crucial for companies to recognize the Metaverse as a key location for their business. The innovative technology has the potential to attract a virtual audience, including skeptics and those with a nostalgic connection to its past iterations. This was the sentiment expressed by a female participant from Andijon, aged 24-26.

About 52% of participants were keen on Metaverse financial activities, including trading and buying NFTs. This involvement shows that virtual currencies and digital goods are becoming increasingly common. Participants reported safe and easy Metaverse Wallet transactions. One participant (Male, 24 - 26, Tashkent) was pleased about his wallet:

Like a traditional cryptocurrency wallet, Metaverse wallets may hold all your coins—Bitcoins, Digicoins, and any others you might have bought.

A second participant (Male, 21 - 23, Samarkand) echoed the following point of view:

They are deemed secure so long you keep them and never misplace or disclose the password. The metaverse wallet could represent a genuine wallet, similar to the one we carry in our pockets.

Yet, other participants were doubtful about the true worth of NFTs, which are unique digital assets that are bought and sold online, contrasting them to over-hyped assets. Among the participants who attempted to utilize the Metaverse wallet stated:

I am still discovering more about it. But according to my interpretation of the Metaverse wallet, we must have digital cash in order to buy any virtual assets. This digital cash is stored in the wallet, which serves as a secure location for this currency. I'm still trying to resolve it soon. Andijon, 21 - 23, man

This was repeated by a different participant (female, 24 - 26, Tashkent):

I cannot imagine NFTs having much of a future as an artistic medium because they are inflated beyond their true potential.

Many participants wanted to explain why they were engaging with companies in the Metaverse, notwithstanding their increasing popularity and brand investments. Limited possibilities and transitory activities needed to match expectations of constant interaction worried this group. This suggests that brands struggle to satisfy all Metaverse consumers. Given their worries, some individuals considered alternatives to Metaverse participation. These options matched participants' preferences. Gaming on Roblox and augmented reality experiences satisfied their entertainment needs, while VRChat and other communication platforms connected them. Participants also used VR technologies to make 3D designs and sculptures. Participants shared their experiences.

The Metaverse is popular, but I need more convincing. It must deliver the thrills that were anticipated. To enjoy myself, I am exploring VR on my own. Creating my avatar and playing games with friends keep me busy. I am also using AR for artistic endeavors and design. I expected this and was ready for anything the Metaverse threw at us. Female, 24 - 26, Fergana.

Their willingness to accept anything the ever-changing Metaverse world provides is reflected in their investigation of alternatives. Participants' involvement with the Metaverse varied in depth, purpose, and focus, illuminating this overarching theme. The participants' reactions to this new virtual world ranged from dedicated immersion time to doubts regarding NFTs. Due to this diverse engagement landscape, brands and developers must adapt to meet the different expectations and desires of users as the Metaverse evolves.

Exogenous variables

Participants were exceedingly favorable when asked to evaluate Metaverse activities post-engagement, expressing hope for the Metaverse's future. Participants were optimistic about the Immersive Metaverse's expanding popularity. Some cited their Metaverse technology investment as proof of its future importance.

A second-hand headset buyer said in jest:

Why did I buy the headset? The future of technology!

Looking back, Metaverse participants expressed a strong desire for additional activities that were not just engaging, but also interesting, to enhance their experience. This underscores their active engagement with the Metaverse and their

eagerness for more diverse content.

Some admitted that boredom could result from no contact or plan. Participants expected brands and organizations to provide more content.

A participant plainly said,

More organizations and brands ought to create Metaverse content.

However, NFT buyers (19%) were concerned about their investments. According to prior research (Albayati et al., 2020), NFT volatility increased fear and unpredictability. Many wondered if their NFT's value would ultimately be appreciated.

One participant expressed doubt about buying an avatar culottes:

I purchased the attire for my avatar at an apparel store to try on and find out how it appears, but I don't know if it was a wise decision or if its value will climb or fall. Female, 21 - 23, Bukhara

Experienced Metaverse users are not just eager, but also enthusiastic about contributing and attracting others to this exciting world. Some have taken to platforms like TikTok and YouTube to share their experiences, while others are helping friends generate NFTs. There's a sense of exploration and learning, with some participants even considering acquiring new skills to navigate the Metaverse and make a living.

One participant thought he could rent his headgear to Metaverse enthusiasts. He said:

Metaverse navigation is difficult. A business opportunity exists to assist individuals in accessing and experiencing the Metaverse by lending my headset and charging per hour. My service is used by many to explore the Metaverse. Tashkent, 24 - 26, Male

Participants who relished their Metaverse experiences were filled with joy and excitement. They were eager to come back, buy headsets, and participate in numerous activities. Some even scheduled their Metaverse excursions with friends to maximize their time and fun. In reflection, a participant said:

When I enter the Metaverse, I plan my time, activities, and destinations to make it worthwhile. I share this itinerary with my friends to ensure we can all have fun. Female, 26 - 28, Samarkand

We also examined participants' Metaverse journeys—awareness, seeking information, involvement, and evaluation. Despite obstacles, participants wanted to see the Metaverse (See **Table 2**—a synopsis of the Metaverse consumer buying patterns).

Although some felt negatively, the Metaverse was mostly viewed positively. Based on our research into digital marketing, advertisements, the purchasing process, and brand loyalty, it's evident that consumers now have a better understanding of the Metaverse. This indicates that people are increasingly willing to engage with the Metaverse as a means to bridge the digital divide. Consequently, brands can enhance their consumer engagement within the Metaverse, aligning with the findings of our study's HS model.

Our study found exploratory purchase behavior among Uzbek Metaverse-interested consumers in the Input Stage. Metaverse users may adopt new technology and innovations. Our research also found a contradiction: while customers value exploratory purchases, Metaverse options and activities typically disappoint.

Activities that happen around the clock must always live up to their promise so that no one is unhappy. Moreover, our research showed that even if customers have the EBBT (Exploratory Buying Behavior Tendency), businesses must continue to provide offerings which encourage people to buy various products in the Metaverse. For example, even though one person was a gamification fanatic, others pointed out that the fact that they were unable to compete with people from around the world at any time was a drawback. This shows a need for complete Metaverse services that can be accessed anywhere worldwide.