

METaverse AVATARS: SHAPING IDENTITY, SOCIAL PRESENCE AND REAL-WORLD SELF-PERCEPTION

Anum Naz¹, Dr. M. Rashid², M. Abdullah Ejaz³

¹PhD Scholar of Applied Communication, Multimedia University, Cyberjaya 63000, Malaysia

²Assistant Professor of Media Sciences, Riphah International University, Islamabad

³Faculty of Computing and Informatics, Multimedia University, Cyberjaya 63000, Malaysia,

¹naz.anum@student.mmu.edu.my, ²rashid.rims@riphah.edu.pk,

³muhammad.abdullah.ejaz@student.mmu.edu.my

DOI: <https://doi.org/10.5281/zenodo.18081894>

Keywords

Avatar Identity, Virtual Reality, Self-Expansion, Digital Identity, Social Dynamics

Article History

Received on 28 October 2025

Accepted on 15 December 2025

Published on 28 December 2025

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Corresponding Author: *

Dr. M. Rashid

Abstract

The metaverse redefines identity through avatar-mediated interactions, impacting self-image and social engagement in both real and virtual spheres. Avatars have become effective tools of interaction and self-presentation in the metaverse and virtual worlds. This research examines the impact of avatar-mediated experiences in the metaverse on user identity in real and virtual contexts. Through avatars, users are afforded opportunities to express themselves and interact in a multidimensional manner. Focus group discussions reveal that avatars have a profound impact on identity, supporting attempts to undergo identity experimentation. Although avatars enable self-exploration and bolster social presence, issues around authenticity and consistency between virtual and real identities remain. This research contributes to the understanding of the balance between authenticity and freedom in avatar customization by examining the avatars' role in identity negotiation, interaction, and psychosocial development in virtual spaces.

INTRODUCTION

The metaverse refers to an online space that integrates the real and digital worlds and enables users to participate in 3D immersive interactions. The most important aspect of The Metaverse is its potential to eliminate the existing gaps in the digital space, especially in learning, working, entertainment, and daily interactions. The Metaverse is projected to become one of the most essential facets of human interaction in the future. It provides a new method of interfacing with the virtual and physical realms. As noted by Mystakidis (2022), the

evolution of the Metaverse will yield a transformational advancement in real world interfacing. User-driven avatars are essential to the user experience in the virtual worlds and how users perceive these worlds. Avatars are instrumental in determining how users interact with the digital world. To illustrate, avatars permit users to test out different facets of their identities, which enhances self-expression and creativity (Freeman et al., 2020). Within the context of technology, individuals now have the option to take on roles or genders that are different from what they inhabit in real life. This phenomenon

can be enjoyable and freeing in ways that the real world does not offer. Moreover, avatars enhance social interaction as they make communication more life-like (Schroeder, 2002). Users can utilize body language and facial expressions through avatars, making conversations more natural and supportive of non-verbal cues. Avatars facilitate connection, communication, and relationship building in gaming, virtual conferences, and across the Metaverse (Fysh et al., 2022).

Social Virtual identity management looks at the processes of constructing and embodying identities through avatars within three-dimensional spaces. New online social environments allow for more immersive representations of users. Such advancements offer new opportunities for interaction which are increasingly complex on a social level. Users have considerable power in customizing the appearances, clothing, accessories, and even the abilities of the avatars. Such personalization enables users to express and enact different facets of identity, including gender, age, and style, often portraying aspirational versions of themselves (Freeman et al., 2020). Profiles usually display avatars showing their values or expressing their wished identities. This type of self-representation can enhance social interaction as users are able to engage more fully and build relationships. Personalized virtual environments provide users space to navigate their identities in a context that is safe and rich with possibilities (Kuznetcova et al., 2018). How people interact with others and the roles they take on shape their emotions, behaviors, and self-concept in the real world. Users often take on avatars in these digital spaces, which serve as extensions of the user. The interactions individuals have with others, as well as the roles they adopt, can impact their emotions, behaviors, and even self-concept in real life (Bourgeois et al., 2022).

In their exploration of identity, users are able to work on different aspects of their identity and even attempt to explore attributes that would be challenging for them in real life. In this process, users create

avatars or personas that represent positive traits such as confidence and assertiveness which they admire or wish to embody (Koshy et al., 2014). The Proteus effect demonstrates how virtual spaces' confidence and dominant traits can affect the user in reality (Martinet et al., 2024; Sarah, 2023). The social aspects of virtual spaces also have important influences on the development of real-life identities. In multiplayer games, social VR platforms, and other online communities, users frequently develop significant friendships (Ali et al., 2023). These friendships can shape many ideas individuals hold about themselves in regard to social groupings. Positive interactions in virtual settings can result in bolstered self-esteem in actual life. On the other hand, negative interactions, such as harassment or rejection, can harm self-worth and result in feelings of disconnection, both in the physical and virtual world (Anjos & Pereira, 2024).

Although there is increasing excitement and funding directed toward the metaverse, how these avatar-mediated experiences impact users' views of their identities are still underexplored. Although avatars facilitate self-presentation and social presence, it is not clear how these interactions influence users' self-identity in virtual settings and in daily life. Furthermore, not much is known about the particular uses and gratifications that avatar interactions fulfill and the extent to which these interactions influence the development of embodied social presence. This study aims to address these critical gaps by examining how avatar-mediated experiences in the metaverse impact users' identity and social interaction in both virtual and real-world contexts. The main objectives are:

1. To examine how avatar-mediated experiences in the metaverse influence user's perception of their identity in real-world contexts.
2. To explore how the uses and gratifications sought through avatar interactions in the metaverse impact the development of embodied social presence.

1 Related Work

The pandemic accelerated the shift to a digital economy, increasing reliance on the Internet for work, shopping, and socializing, subsequently elevating the Metaverse (George et al., 2021). The Metaverse, an advanced form of the Internet, integrates AI, blockchain and sophisticated VR technologies. It aims to transform human interaction and socio-economic exchanges, moving from an Internet of Information to an Internet of Value where central digital assets and avatar-based interactions take place (Cheng et al., 2022; Huang et al., 2024). Immersive realism, seamless identity and access, interoperability, and scalability need further advancement to achieve the fully integrated Metaverse (Dionisio et al., 2013). Stimulating public interest and improving hardware support adoption, however, a lack of collaboration between developers and insufficient computing power are still significant obstacles. Companies such as Meta are heavily investing in these technologies, pursuing equilibrium between virtual and real environments. Because the Metaverse alters perceived reality, deeply engaging the cognitive functions, it requires multidisciplinary considerations for responsible development (Ritterbusch, 2023).

Avatars act as digital identities and are critical in defining any virtual user experience and interaction. Unlike older online spaces, avatars offer extensive options for customization. This means users can craft personas that transcend real-life boundaries which is in line with Goffman's self-presentation theories (Goffman, 1959). Avatar realism boosts engagement and increases the user-avatar relationship which enhances usage intention as per construal level theory and source attractiveness models (Kim et al, 2023). Familiarity with avatars also moderates these psychological mechanisms, which underscores the importance of meticulous avatar design on Metaverse platforms.

Customization of avatars increases expression as well as identity depiction. Avatars can be designed to showcase

aspirations, thus aiding connection formation as well as providing a safe space for identity exploration and role-play (Lennart Ante et al., 2023; Freeman et al., 2020). The context of a virtual environment greatly influences avatar self-similarity; relaxed situational contexts invoke less self-similar avatars and greater information sharing, while formal contexts are dominated by self-representation (Wu et al., 2023). Avatars also allow exploration of various real-world identities, such as gender, in a supportive virtual setting (Messinger et al., 2019).

The users often tend to create their avatars with some resemblance to themselves, albeit with certain physical traits exaggerated, especially those associated with areas where they feel insecure. An avatar's attractiveness affects online activities, even altering traits such as extroversion. Although elements of a person's core identity remain largely unchanged, elements such as hair, attire, and facial structure tend to be more adaptable and showcase fluidity as part of dynamic digital self-presentation (Aksar et al., 2023). The avatar creation process includes the stages of consolidation, exploration, affirmation, and aspiration. These stages affect the consumer engagement and behavior in the Metaverse (Taylor et al., 2024). The growing immersive Ness of virtual environments is having an increasing impact on one's self-perception as well as their physical world identity. Avatars, which serve as virtual extensions, enable users to assume roles and engage with others in ways that impact their emotions, behaviors, and self-concept (Bourgeois et al., 2022). Social interactions also occurring in these virtual worlds have a profound impact on physical world identities. Meaningful relationships formed through avatar interactions in games and on social VR platforms transform individuals' perceptions of their social groups (Ali et al., 2023). Engaging in virtual interactions can enhance self-confidence in the physical world, though these interactions can also negatively impact self-esteem and result in isolation (Schroeder, 2002). As Evans (2015) discussed, many people derive significant

meaning for their identity and relationships from digital representations of themselves, rather than the physical self. Besides identity, avatar-enabled interactions affect consumer behavior. Avatar similarity and realism of the clothing are crucial to intention to spend on virtual fashion and the use of the Metaverse. Identification psychology ties this together, especially with elevated self-monitoring tendencies (Oh et al., 2023). As noted on Second Life, emotional attachment to avatars driven by customization has a strong impact on virtual purchasing behavior (Kalyvaki et al., 2023). In the same way, Grewal (2018) showed self-categorization with brands and sharing identity-based products on social media changes attitudes and consumption. The context also influences how avatars are customized. A Second Life study indicated that virtual experiences and the resemblance to the avatar predicted actual transformations in real life, with changes in personality traits acting as mediators (McLeod, 2011).

Theoretical Framework

Uses and Gratification Theory

Uses and Gratification theory proposed by Katz and Blumler, emphasizes the active role of media consumers in selecting content to fulfill specific needs and desires, concentrating on what people do with media (Katz et al., 1973). This theory is useful when considering diverse motivations that users have for interacting with avatars in the metaverse, such as social interaction, self-expression, escapism, exploration, and economic (Natarajan et al., 2024; Yu, 2024). It also clarifies how the pleasure derived from interactivity can lead to purchasing intention in virtual settings (Prمود, 2024). Critics who argue that U&G overlooks the media's power or unintended effects still make the case that understanding choice in relation to avatar-mediated experiences remains useful (Caramazza et al., 2014).

Embedded Social Presence Theory

The theory Embedded Social Presence was put forth by (Mennecke et al., 2011). It deals with how avatars serve as a means of

interaction with social media and virtual worlds and brings about a sense of presence which is a product of human thinking similar to how encounters happen in real life (Wang et al., 2016). Perception of social presence is stratified as the user's own avatar's presence then follows other avatars, forming an aggregate perception of social presence which is essential for understanding the feeling of being present and connected to other people in a virtual world in a virtual world (Mennecke et al., 2011). It explains the extent to which users immerse and engage with the interaction determines the perspective focusing on the user's virtual bodies as avatars as right arms in shared virtual spaces referred to as real world (Zhang et al., 2022). This research utilizing this theory regarding the popularity of the metaverse argues that imagination, in addition to technical aspects, intensifies embodied presence stimulating interaction.

2 Methodology

This research explores the impact of avatar-mediated interactions in the metaverse on users' identity perception both in virtual and real-life contexts. In order to fully understand the participants' experiences, qualitative approaches were used as they are effective in dealing with complex human perceptions and social relations (Pritha Bhandari., 2024). Focus Group Discussions were employed as the primary method for data collection wherein a particular group is brought together to deliberate on a specific issue under the direction of a facilitator (Mishra, 2016). This method is valuable in investigating identity and social presence because it shows how users understand and make sense of interaction and identity changes in the context of the metaverse. University students who actively participated in avatar-mediated interactions on virtual platforms like Second Life or Zepeto constituted the target population. This demographic was advantageous due to their high levels of exposure to immersive technologies, receptiveness to technology, and their age, which is characterized by rapid shifts in personal and social identity development provided rich data regarding

the impact of virtual interactions on real and virtual identities. A purposive sampling strategy was used to choose 20-25 students from Riphah International University's game and design department who had considerable experience with avatars in virtual environments to provide in-depth and pertinent data for the study (Nyimbili, 2024).

A semi-structured focus group discussion guide was used in gathering data with open-ended questions aimed at understanding applicative users' perspectives on identity, sought gratifications, and participation of avatars in social presence constructions. This guide helped the moderator to elicit further responses to ensure all critical concepts were addressed. To aid in data collection, non-verbal cues and group behavior were also recorded as observational notes, and discussions were audio-recorded with participant consent to enhance precision in transcription and analysis. The data was transcribed and subsequently underwent thematic analysis, a qualitative method that seeks to describe, investigate, and interpret patterns or recurring themes in a given data set (Abisha Kampira, 2021). The approach included obtaining immersion with the data, preliminary coding, forming codes into overarching themes, and iterative revision to guarantee the themes accurately captured the participants lived experiences (Anderson, 2007). Themes were classified as avatars as extensions of the self, identity fluidity, discrepancies between actual and virtual world depiction, avatar's role in confidence, social and emotional interaction, which depict the complex interplay between avatars, identity, and social interaction in global virtual environments.

3 Results

The findings reveal a multifaceted relationship between users and their avatars, extending beyond virtual boundaries to influence real-world self-perceptions and behaviors. Participants exhibited a diverse spectrum of connections with their avatars, broadly categorizable into extensions of the real self and tools for creative expression. A

considerable proportion of users perceived their avatars as direct extensions of themselves, encapsulating specific traits, aspirations, and idealized qualities they wished to embody.

As one participant noted, "My avatar represents who I am inside, but it's also aspirational—it reflects the version of me that I want to become." This shows how the metaverse can enable the shaping of a digital self-image in alignment with one's present self or goals. On the other hand, a good proportion of participants considered avatars as blank canvases for exploration instead of self-portraits, venturing beyond the real-world limitations. One explained, "I don't see my avatar as me; it's more like a character I enjoy experimenting with," underscoring the dual utility of avatars for both identity reinforcement and unfettered creative freedom. Intriguingly, some participants reported that their avatars enabled them to bridge aspects of their private and public personas. An introverted individual noted, "I'm an introvert in real life, but my avatar is much more outgoing. It gives me a way to practice socializing without fear," demonstrating avatars' role in fostering personal growth and social engagement by providing a safe practice ground.

The impact of avatar-mediated experiences extended far beyond the virtual world and altered participants' actual identities. An increase in confidence was noted as a theme, as one participant remarked, "Speaking to a crowd in the metaverse was a big step for me. It made me feel less anxious about presentations in real life." This suggests that interactions in virtual spaces have the potential to enhance social and professional interactions in the physical world. Moreover, avatars stimulated self-discovery, motivating participants to acknowledge and act upon dormant skills. A case in point is one participant who stated, "Through my avatar, I've realized I'm more creative than I thought, and it's encouraged me to try new things in real life, like in art and design." On the other hand, several participants engaged in self-critique and evaluated their actions in the real world. As one person reported, "My

avatar is stylish and bold, and it made me wonder why I don't put as much effort into my appearance offline," indicating that imagined identities could be used to confront and improve one's real identity.

Users informed that they had multiple personal and social reasons for wanting to interact with their avatar. Self-expression emerged as one of the most salient drivers, as most users selected avatars that projected traits they personally valued and wished to embody. "I prioritize qualities that I admire in myself, like being approachable and friendly, but I also experiment with styles I wouldn't try in real life," described one participant, illustrating how avatars serve as customizable safe spaces for self-exploration. Social engagement, including meeting diverse individuals and participating in collaborative activities, ranked highly, with one expressing, "I enjoy meeting people from different parts of the world—it broadens my perspective while staying within the comfort of a familiar environment." Furthermore, a subset of participants strategically designed avatars to align with professional goals, explaining, "I focus on making my avatar look confident and credible, especially since I use it in virtual team meetings and networking." This underscores avatars' utility in bridging personal and professional identity dimensions. The use of avatars to improve social comfort and presence in the metaverse stood out too. Participants seemed to agree that avatars provided a level of comfort within the social virtual spaces. One of them stated, "It's easier to initiate conversations in the metaverse because my avatar acts as a buffer. I don't feel as self-conscious about how I look or sound." Nonetheless, these observations were not without criticism, as one participant pointed out, "Sometimes I feel that avatars lack the subtle expressions needed to fully communicate feelings, which can create misinterpretations." Focus groups also revealed distinct differences between the virtual and physical self-presentation. Participants preferred a more radical and free approach to self-presentation. "Through my avatar, I'm more outgoing and

adventurous, while in real life, I tend to be reserved," shared one participant. Even with such boldness, a tension toward a desire for authenticity was noted, where some participants wanted their avatars to mirror their real selves to establish genuine interactions.

The extent to which avatar interactions took place influenced how deeply participants experienced phenomena. Regular use deepened engagement, as illustrated by one participant who "spent 5 to 6 hours a week in the metaverse" and described forming "strong virtual friendships that feel just as meaningful as real-life connections." At the same time, participants appreciated the need to balance moderation, as one noted, "If I spend too much time in the metaverse, it starts to feel less authentic, and I crave real-world interactions," suggesting both a need for balance and immersion. Participants differed in alignment importance of avatars to real-world identity, from strong focus to desire for complete reinvention. For some, a need for alignment aided in fostering genuine connection, while for others, avatars served as aspirational tools reflecting future desired selves instead of current realities.

4 Discussion

This study critically examined how avatar-mediated experiences in the metaverse shape users' identities in both virtual and real-world contexts, exploring the psychological, social, and emotional dimensions of these interactions. This study critically examined how avatar-mediated experiences in the metaverse shape users' identities in both virtual and real-world contexts, exploring the psychological, social, and emotional dimensions of these interactions. Findings underscore that avatars serve as dynamic tools for self-representation, frequently embodying users idealized or aspirational characteristics, a phenomenon demonstrating their transformative potential in enabling users to craft digital identities aligned with personal goals and values. Participants confirmed that interacting with their metaverse avatars significantly influenced their real-world self-

perception, fostering increased confidence and personal development by offering a low-stakes environment for skill enhancement and self-discovery. This aligns with Uses and Gratifications Theory, as users actively leverage avatars to fulfill needs for self-expression, social engagement, and even professional identity, demonstrating a goal-oriented approach to virtual world interactions (Natarajan et al., 2024).

The analysis further highlights the profound role of social interactions in metaverse experiences, where avatars facilitate meaningful connections, reduce social anxiety, and enhance comfort. This directly supports Embodied Social Presence Theory, showing how avatars, as digital extensions of the self, foster a deep sense of co-presence that strengthens social bonds and contributes to emotional well-being within virtual environments. While users embraced the flexibility and creative freedom afforded by virtual identity construction, a tension emerged regarding the importance of maintaining authenticity and coherence between digital and real-life personas (Zhang et al., 2022). This dual function of avatars—as both mirrors of existing identity and exploratory tools for new ones—significantly impacts users' emotional engagement, fostering heightened senses of identity, improved self-confidence, and meaningful connections that transcend virtual boundaries.

Conclusion

The digital representations in the metaverse have emerged as central to social interaction, acting as extensions of the self that enable profound identity expression, exploration, and social engagement. Users actively leverage these avatar-mediated experiences to navigate and negotiate their identities in ways often unfeasible in physical reality. This study reaffirms that avatar use profoundly influences self-perception, self-expression, and social interaction, aligning with core tenets of Uses and Gratifications Theory by identifying motivations for engagement, and corroborating Embodied Social Presence Theory by demonstrating how avatars facilitate genuine and

immersive virtual interactions. The findings reveal how the metaverse, through its customizable avatars, provides a unique space for identity modification and self-discovery, leading to enhanced self-awareness and personal evolution. This complex interplay between adaptability and authenticity in avatar-mediated identity creation, however, presents a nuanced dynamic that warrants further research to fully comprehend its long-term psychological and sociological implications.

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