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Identity Experiment in the Metaverse: Making Sense of Zepeto Users' Avatar Use

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With the proliferation of online platforms that support avatar-based communication, the notion of metaverse has drawn much public attention. Using a mixed-method approach, the current work explores how users experiment with their avatars in Zepeto, a popular metaverse service with millions of users globally. Based on in-depth interviews with South Korean Zepeto users (*N* = 14), Study 1 examined how individuals construct their self-identity in the virtual world and found that sociocultural constraints of the real world still shape the way they perform their virtual identities. Building upon the findings of Study 1, Study 2 (*N* = 200) examined how users' personality traits, self-esteem, and need for popularity predict the multiplicity, malleability, and continuity of virtual identity using an online survey. Results suggest that people create and maintain their virtual identities in reflection of their self-views as well as in pursuit of unfulfilled needs.

Keywords: authenticity, avatar, Big Five personality traits, identity, metaverse, need for popularity, self-esteem

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With the proliferation of digitally mediated spaces, interaction via avatars (i.e., cartoon-like characters that represent users in cyberspace) has become commonplace in our daily lives. Especially amid the COVID-19 pandemic, when face-to-face contact in the physical world was severely restricted, a wide array of online platforms that support avatar-based communication emerged under the umbrella term "metaverse." Often traced back to Neal Stephenson's 1992 fiction novel *Snow Crash*, the term has become a buzzword that celebrates recent technological advancements and their promises, especially those surrounding virtual reality (VR) and artificial intelligence (AI). Most notably, big technology companies like Microsoft and Meta (renamed from Facebook) are betting their future on the metaverse, raising questions not just about its business potential but also about the social and cultural implications of such moves.

The current research aims to explore what it means to users to experiment with their own avatars in the virtual world, a key affordance of the metaverse. In particular, we focus on Zepeto, a 3D avatar-based social network launched in 2018, which has gained popularity among younger generations in South Korea and other Asian countries, accumulating more than 300 million users (Byun, 2022). As succinctly captured in its advertising slogan, "In a space without limits, another me in another universe" (ZEPETO, 2022), Zepeto enables users to create their own avatars and build virtual spaces. Avatars can resemble users at their finest should users choose to use their selfies to create their avatars, but users can also customize their avatars by adopting various premade physical features (e.g., skin color, hairdo), clothes, and accessories. Users can roam around numerous virtual spaces constructed by Zepeto creators, who are experts in creating items and spaces. Some spaces are completely fictitious, like the game maps, while others have their real-world counterparts. For instance, users can visit the Han River Park in Zepeto and enjoy taking selfies, picnicking, jogging, and snacking at convenience stores, just as they would in the physical world. As such, Zepeto provides users with ample opportunities to explore their identities in the spaces with varying degrees of resemblance to the real world (see Figure 1).

Figure 1. Virtual Han River Park (above) and a fictional map (below) in Zepeto (images captured by the second author).

Extending the previous research that examined how avatars influence users' self-perceptions as well as their perceptions of other users (see for a review, Lee & Oh, 2015) and how people perform their identities, actual or imagined, using their virtual stand-ins (Bargh, McKenna, & Fitzsimons, 2002; Schechtman, 2012), the current research addresses the following questions: How do Zepeto users express their identities through their avatars, and for what purposes? What sociocultural constraints shape their construction of virtual identity? What leads to the different ways in which Zepeto users experiment with their avatars? Specifically, we conducted in-depth interviews (Study 1) and an online survey (Study 2) of South Korean Zepeto users. In the sections that follow, we first present Zepeto users' avatar experiences in general, and their perceptions and thoughts of self-identity in the metaverse in particular. Then we report empirical findings from the user survey, focusing on how individuals' self-concepts and psychological traits predict their self-presentation through avatars in the virtual world.

Avatar Creation in the Virtual World

The presentation and perceptions of self in cyberspace have long been a topic of interest across various fields of studies, especially with respect to embodied virtual interactions. On one hand, researchers examined how people form impressions of and respond to anonymous others based on their avatars, and

how even randomly assigned avatars affect the way people behave in cyberspace (see for a review, Lee & Oh, 2015). For example, not only did individuals find their interactants to be more competent and attractive who were represented by animated characters rather than simple stick figures (Lee & Nass, 2002) but they were also more likely to identify with and conform to their interactants when they were all represented by the uniform (versus distinct) avatars (Lee, 2004). Similarly, even though the communication partner's real gender was unknown, participants inferred the partner's gender from the arbitrarily assigned avatar and exhibited stereotyped responses accordingly (Lee, 2007).

Perhaps more intriguing are the findings that people modified their own behaviors in line with the avatars' attributes that were merely *assigned* to them. For instance, participants exhibited interpersonal behaviors that conformed to their digital self-representations, such that those assigned attractive (versus unattractive) avatars engaged in more intimate behaviors (Study 1) and those assigned tall (versus short) avatars acted more confidently in a negotiation task (Study 2; Yee & Bailenson, 2007). Likewise, participants adopted a gendered language style associated with their avatar's gender, even though they had not chosen the avatar (Palomares & Lee, 2010). Yee and Bailenson's (2009) follow-up study showed that the changes in self-perception accounted for why the participants' altered digital self-representations shaped their behaviors in the immersive virtual environment.

On the other hand, another stream of research highlighted the users' experimentation of self-identity through avatars. For example, Veerapen (2011) proposed four different types of the user-avatar relationships. Specifically, users consider their avatars as (a) a mere object they can control for a specific purpose (avatar as object), (b) an extension of physical and perceptual qualities of the human body (avatar as prosthesis), (c) a quasi-part of human body users can have a symbiotic relation to (avatar as phantom limbs), and (d) a phenomenal body that has its own legitimate identity and comprises a part of the user's identity (avatar as equal). While users ascribe different meanings to their avatars on different occasions, oscillating between embodiment and disembodiment in the virtual world, they tend to create avatars strategically. Subject to both the self-enhancement motive (i.e., promoting a more positive self-image) and the self-verification motive (i.e., maintaining a consistent identity; Messinger et al., 2008), users tend to accentuate different attributes of their avatars suited for specific purposes, such as blogging, dating, or gaming (Vasalou & Joinson, 2009), although some choose to create avatars with perfect looks to their satisfaction (Mills, 2018).

Not only do users design their avatars for strategic self-presentation but they also use avatars to give life to their true, yet normally hidden, selves (Schechtman, 2012). In earlier text-based online contexts, visual anonymity allowed people to express their true selves more freely (Bargh et al., 2002), but the virtual environment where people can configure their features to their liking can empower users even further. Unlike many gaming contexts where users are assigned a premade avatar to perform a designated role to clear a quest, when users can build their own characters, such as in *Second Life* (2003), they have the authorship over their avatars. Giving "voice to a part of her personality, a trait, or set of desires that is for one reason or another suppressed in real life" (Schechtman, 2012, p. 332), a user can express his or her authentic self.

This authorship, however, does not guarantee boundless avatar-based self-actualization. Several studies have reported how sociocultural constraints of the real world still shape individuals' avatar use even within virtual environments. For example, Mills (2018) found that users created their avatars in *Second Life* largely aligned with the real-world beauty standards. Although the users were free to look any way they chose, among 360 female avatars, 99% had a perfect body size, more than 80% had light skin, and almost 40% wore skimpy outfits, replicating the Western ideals of beauty and depicting women as sexual objects. Likewise, users of *Second Life* tended to opt for dominant identities, preferring Caucasian to other ethnicities and heterosexuality to queerness (Martey & Consalvo, 2011). These findings echo Webb's (2001) notion of an interplay of emergent and residual forces, a dual process wherein users take advantage of a break from established social norms and create unique narratives as well as visual imageries, while still being subject to self-censorship well-aligned with social norms.

Taken together, prior research suggests that people engage in constant identity negotiation, with its specific manifestations varying as a function of their self-perceptions, motives for virtual interaction, as well as social norms and constraints. To explore Zepeto users' identity performances through avatars, we adopted a mixed-method approach. Using in-depth interviews of current Zepeto users, Study 1 aimed to identify if, and if so, how sociocultural constraints of the physical world shape Zepeto users' construction of virtual identity in a qualitative manner. Considering that virtual experiences lived through avatars can change people's minds, improve their behaviors, modify their preferences, and induce false memories (Murphy, 2011), it is critical to understand how identity performances in virtual worlds are connected to the real world's conditions and constraints to begin with. Despite Zepeto's slogan, "In a space without limits, another me in another universe" (ZEPETO, 2022), if Zepeto users' self-expressions are still largely bounded by their offline identities and experiences, the liberating potential of the metaverse may never materialize. Quite contrarily, this "another universe" may be populated by even less diverse cyber-replicas that reflect, and thereby, reinforce mainstream values of the physical world. Therefore, by delving deeply into actual Zepeto users' personal experiences, we sought to better understand the processes through which personal identities are shaped within the dialogues between the virtual and real worlds (Schechtman, 2012).

To complement and expand Study 1, we conducted an online survey with current Zepeto users (N = 200) and investigated if there exist any systematic patterns in avatar use, as predicted by users' psychological characteristics (Study 2). While offering rich descriptions of how people construct their virtual identities, as situated in their unique contexts, the findings from in-depth interviews of a few individuals can be limited in both generalizability and predictive power (Johnson & Onwuegbuzie, 2004). Moreover, in addition to sociocultural factors, individuals' psychological traits and self-views can also play a significant role in guiding Zepeto users' identity experimentation.

Indeed, unlike face-to-face settings, where self-presentation is largely constrained by one's physical attributes, social backgrounds, and anticipated public evaluation, online settings "offer a highly controlled environment for self-presentation behavior, which provides an ideal setting for impression management" (Mehdizadeh, 2010, p. 357). As such, a volume of research has examined how individuals' personality traits (e.g., Lee, Ahn, & Kim, 2014; Marshall, Lefringhausen, & Ferenczi, 2015; Seidman, 2013; Wang, Jackson, Zhang, & Su, 2012), social and psychological needs (e.g., Baumgartner, Sumter, Peter, & Valkenburg, 2015; Utz, Tanis, & Vermeulen, 2012), and self-views (e.g., Marshall et al., 2015; Mehdizadeh,

2010; Wang et al., 2012) shape their online self-presentation, mostly in the context of social network sites (SNSs). Extending this line of research to the metaverse, while complementing Study 1's qualitative approach, Study 2 investigated how users' Big Five personality traits, need for popularity (NfP), and self-esteem predict avatar-based identity construction in the metaverse.

Study 1

Method

To address (a) how Zepeto users present their identities through their avatars and (b) what roles the real world's sociocultural constraints play in this process, semi-structured in-depth interviews with 14 South Korean Zepeto users were conducted in January and February 2022 (see Table 1 for interviewee information). Reflecting the known demographic composition of the actual Zepeto user base, we recruited more female interviewees in their teens and 20s than male users or users from different age groups. Given the COVID-19 situation, interviews were conducted via Zoom. Each interview lasted between 40 and 60 minutes and was recorded for later transcription.

Table 1. Interviewee Information.

Name	Gender	Age	Duration of Zepeto Use
A	Male	17	13 months
B	Female	18	1 month
C	Female	19	13 months
D	Male	19	22 months
E	Female	21	5 months
F	Female	22	8 months
G	Female	22	20 months
H	Female	26	13 months
I	Male	27	4 months
J	Male	28	9 months
K	Female	28	14 months
L	Female	31	1 month
M	Female	39	22 months

Results

Reconstructing Self Through Avatars

To create their own avatars, users can either use their selfies or choose from premade avatars. Out of 14 interviewees, only two used their selfies when they first created their avatars. Most of the interviewees preferred the ready-made ones because it was easier for novice users, or they found predefined avatars more attractive than their real appearances. Regardless, none of them retained the original versions.

They all customized their avatars one way or another, because pivotal to the Zepeto's fun is playing with the avatar's looks. Unlike earlier online games that offered fairly limited options for avatar customization, Zepeto provides myriad ways of reinventing avatars, such as the shape of the eyes, the angle of the eyebrows, the length of the nose and chin, and the skin tone.

The plasticity of self-identity in Zepeto is further promoted when users choose to purchase an additional avatar for US$2, which 38.5% of the Study 2 respondents did. Some Zepeto users possess multiple avatars to dabble in different personas and alternate egos, for instance, crossing gender boundaries.

> "I created my first avatar based on my real-life appearance. After making my lookalike, I wanted to try something new, so I played around with different outfits and hairstyles for my second avatar. The third avatar I made is a female character. I wanted to dress her up in different styles, but I lost interest after a while, so I don't use that avatar quite as often these days." (D., 19-year-old male)

> "If I were to create a second avatar, I would definitely choose a male character. I have a masculine side in me. It would be fun to express my hidden personality this way through avatars." (L., 31-year-old female)

Altered avatar appearance can, in turn, shape how users behave in the metaverse. One interviewee had two avatars, one dressed in a formal suit and the other in a hip-hop style, and reported that he behaves differently when using each avatar:

> "When I am with my friends, I talk in a very casual way. But in Zepeto, I consciously try to speak in a way that matches my characters' images. For the hip-hopper avatar, I tend to give short answers and speak in a more aggressive manner. With my main avatar, however, I go with a more calm and delicate tone." (I., 27-year-old male)

Resonating with Turkle's (1995) notion that the virtual space serves as a social laboratory for people to experiment with their self-identities, Zepeto users explore ways to express various facets of themselves. With Zepeto's technological affordances that enable users to try out different physical features, free from real-life constraints, users seem to enjoy reinventing their identities via avatars.

Isn't It Fake?

Through the use of pseudonym and readily customizable cartoon images, users can create a persona in Zepeto as far from their offline personalities as they like. Many of the interviewees believe that Zepeto users disclose only 30–40% of their real selves. Departing from the earlier notion that identity switching in cyberspace can be a form of deception and frowned upon as a dishonest and manipulative behavior (Roberts & Parks, 1999), not only did most of the interviewees indicate their strong preference for anonymity but they also believed they could be more truthful in Zepeto than in the real world, where they are expected to present a compelling front and fulfill their social roles. Put differently, what interviewees

call their real-world selves does not necessarily encapsulate their authentic selves but instead represents an actualized and performed self. In this sense, the real-world self is akin to the actual self that consists of the traits they normally express to others, rather than the true self comprised of the traits "they possess and would like to but are not usually able to express" (Bargh et al., 2002, p. 37). When in Zepeto, however, users feel much less inhibited by social norms or the gazes of others and are thus better able to show who they really are.

> "I am 110% myself in Zepeto. My avatar has a hairstyle that I don't dare to wear in real life, so it's a little different from my usual self, but it's a style I want to have. That's why I said 110%." (K., 28-year-old female)

> "I get this vicarious satisfaction from the avatars, especially when I use hipster characters. I don't really have street clothes in my wardrobe since I'm known as a 'hip-hop geek' among my friends. I feel like they would make fun of me if I dressed like a typical hip-hop geek, so I avoid street fashion in real life. However, it's a style I've always wanted to try even though I know it won't suit me. So instead, I like to experiment with street fashion through my avatar." (D., 19-year-old male)

> "In real life, I am a mother of two kids who is busy with house chores. . . . In Zepeto, however, I'm free to do whatever I want and wear whatever outfit I choose. . . . My avatar somewhat resembles me before marriage. With my virtual self, I can try on daring clothes I couldn't wear in the past." (M., 39-year-old female)

Similarly, when asked to describe her avatar's appearance, K. cautiously admitted that her female avatar had very short hair, alluding to the feminist implication of it. In South Korea, there has been a groundless accusation, most prominently in male-dominated misogynistic online communities, that women with short hair are mostly man-hating feminists. For example, An San, a young South Korean female archer who won three gold medals in 2020 Tokyo Olympic Games, fell victim to hateful comments because she allegedly looked like a feminist. In support of her and other women who choose to cut their hair short, the Korean hashtag "#women_shortcut_campaign" trended on Twitter, but the misogynistic interpretations of women's short hair remain prevalent (Lee, 2023). Against this backdrop, Zepeto seems to provide a safe haven for those who feel vulnerable to the rampant anti-feminist discourse.

> "People tend to give disapproving looks or point their fingers at 'masculine' women. Women who have short hair or wear manly clothes often become the targets of public humiliation. Yet, that's the style I prefer, so I show it in the virtual world." (K., 28-year-old female)

While talking about the authenticity of self-presentation in Zepeto, the interviewees frequently referred to Instagram for comparison. For example, C. mentioned, "People all look alike on Instagram, but I see more idiosyncrasies in Zepeto." As social media selves are intentionally curated and displayed to attract others' attention and conform to the latest fad (Abidin, 2018), people become less trusting of their authenticity. Despite the anonymity and the malleability of avatars, however, the metaverse is ironically

regarded as a site where more truthful self-presentation is allowed. Freed from real-life relationships and norms that constrain the way people express themselves, Zepeto users can vicariously perform their true identities through avatars. Paradoxically, that users need not authenticate who they really are promotes more authentic self-presentation in Zepeto.

> "When offline, we are aware of the social pressure that comes from being watched and recognized by others. But in Zepeto, everyone becomes anonymous. Nobody knows your real face. Nobody knows who you are, so there is nothing to be afraid of." (F., 22-year-old female)

Moreover, unlike games that portray fictional contexts, the world of Zepeto consists of places that mirror the physical world. For example, the most popular sections of Zepeto for Korean users include the Han River (which runs across of the city of Seoul), CGV (the largest Korean cinema franchise), and Four Seasons Café (a cafeteria famous for Instagrammable photo spots). All interviewees concurred that they frequented Zepeto more since the outbreak of the COVID-19 pandemic, as their physical mobility became severely restricted by the lockdowns, which implies that users consider their avatars as prosthesis for their physical body (Veerapen, 2011). The strong resemblance of the metaverse to the physical world heightens the perceived realness of users' virtual experiences.

Are We Liberated in the Metaverse?

Although Zepeto certainly enables users to experiment with their identities, about half of the interviewees mentioned that the metaverse is not completely disconnected from the dominant norms of the real world. Albeit being freed from their physical bodies, users nonetheless seek socially acceptable or favored appearances in virtual spaces (e.g., Martey & Consalvo, 2011; Mills, 2018), suggesting that a social gaze still operates in the metaverse. As users become more comfortable in Zepeto, they become more conscious of other users and subsequently, their looks. Interestingly, users who do not accessorize their avatars and show little interest in customizing them have one thing in common: They rarely interact with other users, while roaming around different worlds within Zepeto.

B., an 18-year-old female who does not spend much money on her avatar, does not enjoy communicating with other users in Zepeto. Instead, she finds it more fun to play games with her offline friends in Zepeto. As such, she feels no need to groom her avatar to make a good impression on strangers. Similarly, J. first joined Zepeto to carry out a promotional task at work. Since then, he has visited Zepeto to browse other users' posts, hardly exploring the Zepeto worlds. Once users engage in social activities in Zepeto, they then get trapped in the gaze of others, just as they do in the real world.

> "As I encountered more users, I felt the urge to buy some new items to dress up my avatar." (C., 19-year-old female)

> "[When buying items for avatars] I put in as much effort in styling as I do in real life. . . . I scan what other avatars are wearing and try to learn different fashion tips from them." (E., 21-year-old female)

> "It is only when you become conscious of other users' judgments that you might feel ashamed of yourself. In real life, everyone cares about how they are seen by others. Yet, I don't really get that feeling in the virtual world." (J., 28-year-old male)

Discussion

Study 1 suggests that Zepeto users construct self-identity through avatars in the metaverse by pursuing their desires while simultaneously being conscious of other users' gazes. With countless options for avatar customization and the ease of switching between multiple identities, users explore manifold possibilities for self-presentation in the metaverse, giving voice to their hidden selves. To some interviewees, the metaverse serves as a site to disrupt the binary and heteronormative notion of gender. What merits note is that a growing number of sexual harassments are reported in Zepeto against minors (Lee, 2022), suggesting that anonymity is a double-edged sword.

Study 2

Study 1 offers valuable insights as to how Zepeto users take advantage of technological affordances of the metaverse to express and experiment with their identities through avatars. To complement Study 1 findings, Study 2 investigated if there exist any systematic relationships between users' psychological characteristics and their identity construction in the virtual world. Specifically, we examined how the Big Five personality traits, NfP, and self-esteem predict avatar-based identity construction in the metaverse. Building on Study 1 interviews, we focused on three unique characteristics of online identity: (a) how many avatars Zepeto users create and maintain (multiplicity), (b) how closely the avatars resemble their owners (malleability), and (c) how frequently Zepeto users customize their avatars (continuity). Rather than having a unified self, metaverse users can afford multiple identities that embrace different facets of their self-identities. Their virtual stand-ins can take forms with as little resemblance to their real-world identities as they would like, which are also in constant flux.

Complementing and expanding Study 1 that suggested the persistent operation of sociocultural constraints, Study 2 was conducted to explore what psychological attributes predict the extent to which individuals engage in identity experimentation through avatars in a quantitative manner. Albeit mostly in the context of SNSs, a volume of research has examined how individuals' personality traits, social and psychological needs, and self-views predict impression management via strategic self-presentation online.

First, the Big Five personality traits (openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism) were associated with specific SNS activities. For instance, extraverts used the communicative functions of SNS more actively, including status updates, posting comments, and selfies (Lee et al., 2014), while agreeable individuals were more likely to comment on others' profiles (Wang et al., 2012). On the other hand, more neurotic and conscientious users were less likely to write comments on news feeds, and those more open to experience shared news feeds less frequently (Lee et al., 2014). These personality-based differences were attributed to different motivations of SNS use, such as connecting with others versus sharing information (Marshall et al., 2015).

Directly germane to the current research, SNS users' self-presentation hinges on their personality characteristics. Although the hyperpersonal model of computer-mediated communication (Walther, 1996) underscores strategic and selective online self-presentation that fosters idealized person perception, this tendency was not uniformly found. Young adults high in neuroticism were more prone to present their ideal and false selves on Facebook (Michikyan, Subrahmanyam, & Dennis, 2014), whereas those high in agreeableness and extraversion tended to express one's actual self (Seidman, 2013). Albeit offering high degrees of control over self-presentation, SNSs still represent a nonymous (versus anonymous) setting where the offline identity and relationships are present, making identity experimentation more challenging. Given such differences between SNSs and the metaverse, we ask:

RQ1a–c: How do one's Big Five personality traits predict (a) the likelihood of possessing multiple avatars, (b) the similarity of the primary avatar to their offline self, and (c) the frequency of avatar customization?

According to the uses and gratifications model (Katz, Blumler, & Gurevitch, 1973), different social and psychological needs motivate people to use media for their fulfillment, among other alternatives. In particular, we focused on the NfP, which refers to the chronic motivation to make a popular impression (Santor, Messervey, & Kusumakar, 2000), as another psychological characteristic that might affect Zepeto users' avatar use. Given their capacity to facilitate selective self-presentation with the potential to reach a large audience, SNSs have been considered to be ideal venues for those with stronger NfP (Utz et al., 2012). Indeed, high NfP individuals were more likely to engage in profile enhancement, strategic self-presentation, and grooming (e.g., leaving messages on friends' profiles) even after controlling for the effects of the Big Five personality traits, narcissism, and self-esteem (Utz et al., 2012). Similarly, NfP was a significant predictor of posting sexual pictures of themselves, although such pictures were evaluated more favorably only by opposite-sex peers (Baumgartner et al., 2015). These findings suggest that NfP is associated with SNS activities to enhance their public images and foster perceptions of popularity, but it remains unknown how NfP predicts metaverse users' avatar-based self-expression. Therefore, we ask:

RQ2a–c: How does an individual's NfP predict (a) the likelihood of possessing multiple avatars, (b) the similarity of the primary avatar to their offline self, and (c) the frequency of avatar customization?

Last, we examined how one's self-view affects the ways in which Zepeto users engage in self-expression via avatars. Defined as "a person's overall self-evaluation of his or her worth" (Mehdizadeh, 2010, p. 363), self-esteem has been found to predict online self-presentation. For instance, individuals with lower self-esteem more frequently engaged in self-promotion through main photos, presumably to "enable the actualization of their hoped-for possible selves" (Mehdizadeh, 2010, p. 363), and were more likely to present their false selves on Facebook (Michikyan, Dennis, & Subrahmanyam, 2015). In fact, based on a review of 21 observational studies, Twomey and O'Reilly (2017) concluded that low self-esteem was consistently associated with inauthentic self-presentation. Given the paucity of empirical research with metaverse users, we propose:

RQ3a–c: How does an individual's self-esteem predict (a) the likelihood of possessing multiple avatars, (b) the similarity of the primary avatar to their offline self, and (c) the frequency of avatar customization?

Method

Participants

An online survey was conducted with a national convenience sample of 200 Korean Zepeto users (65 men, 135 women; age *M* = 22.82, *SD* = 6.59, *Min* = 14, *Max* = 39; duration of Zepeto use *M* = 16.44 months, *SD* = 13.32). Participants were recruited via Macromill Embrain, a survey company in South Korea. The sample make-up largely mirrors that of the Zepeto user base, which consists mostly of female users in their teens and twenties (Gilchrist, 2021).

Measures

All items were measured using a 7-point Likert-type scale (1 = *not at all*, 7 = *very much*), unless noted otherwise.

The Big Five personality traits were measured using a single item for each trait (Gosling, Rentfrow, & Swann, 2003): "extraverted, enthusiastic" (extraversion: *M* = 3.93, *SD* = 1.78); "sympathetic, warm" (agreeableness: *M* = 4.93, *SD* = 1.27); "dependable, self-disciplined" (conscientiousness: *M* = 4.19, *SD* = 1.50); "anxious, easily upset" (neuroticism: *M* = 4.09, *SD* = 1.58); and "open to new experiences, complex" (openness to experience: *M* = 4.93, *SD* = 1.40). For NfP, participants indicated how often they ignored others, bought things, and simply did something to become more popular (Santor et al., 2000; α = .71, *M* = 3.26, *SD* = 1.32). Self-esteem was measured using three items: "At times I think I am no good at all" (reverse scored), "On the whole, I am satisfied with myself," and "I take a positive attitude toward myself" (Monteiro, Coelho, Hanel, de Medeiros, & da Silva, 2022; α = .83, *M* = 4.71, *SD* = 1.37).

Participants reported the number of avatars they had (*M* = 1.57, *SD* = 0.90), and their responses were dichotomized to indicate whether they possessed single (61.5%) or multiple (38.5%) avatars. Participants also indicated how similar their (primary, if more than one) avatar was to themselves (1 = *not at all similar*, 7 = *very similar*; *M* = 4.18, *SD* = 1.71), and how frequently they changed the primary avatar's appearance, such as clothing and hairstyle (1 = *not at all*, 5 = *all the time*; *M* = 2.76, *SD* = 0.84).

Results

The three avatar use variables (i.e., possessing multiple avatars, self-avatar similarity, and the frequency of customizing the primary avatar) were regressed on the Big Five personality traits, NfP, self-esteem, sex, age, and the duration of Zepeto use (Table 2).

Table 2. Zepeto Users' Psychological Characteristics and Avatar Use (N = 200).

	Having Multiple Avatars		Self-Avatar Similarity		Freq. of Avatar Customization	
	Model 1A	Model 1B	Model 2A	Model 2B	Model 3A	Model 3B
Male	0.44 (0.34)	0.42 (0.35)	0.17 (0.26)	0.12 (0.26)	−0.19 (0.13)	−0.16 (0.13)
Age	−0.01 (0.03)	−0.01 (0.03)	0.03 (0.02)	0.03 (0.02)	-0.02^{+} (0.01)	-0.02^{+} (0.01)
Duration of Zepeto Use	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.003 (0.005)	0.01 (0.005)
Extraversion	0.02 (0.11)	0.03 (0.12)	0.02 (0.09)	0.02 (0.09)	0.06 (0.04)	0.06 (0.04)
Agreeableness	0.08 (0.14)	0.09 (0.14)	0.10 (0.10)	0.10 (0.10)	0.01 (0.05)	0.03 (0.05)
Conscientiousness	0.11 (0.13)	0.11 (0.13)	0.19^{+} (0.10)	0.20^{+} (0.10)	0.00 (0.05)	−0.02 (0.05)
Neuroticism	0.17 (0.12)	0.21^{+} (0.13)	0.09 (0.09)	0.11 (0.09)	−0.07 (0.05)	-0.09^{*} (0.05)
Openness	0.14 (0.13)	0.15 (0.13)	−0.07 (0.10)	−0.08 (0.10)	0.01 (0.05)	0.02 (0.05)
Need for Popularity	0.02 (0.13)	0.03 (0.13)	0.03 (0.10)	0.04 (0.10)	0.10^{+} (0.05)	0.11^{*} (0.05)
Self-Esteem	-0.28^{+} (0.15)	-0.27^{+} (0.15)	0.29^{*} (0.12)	0.31^{**} (0.12)	−0.08 (0.06)	-0.10^{+} (0.06)
Extravert × Duration						0.01^{**} (0.002)
Neurotic × Duration		-0.01^{+} (0.01)				-0.01^{+} (0.003)
Openness × Duration		-0.01^{+} (0.01)		-0.01^{+} (0.01)		
R^2	.06[a]	.08[a]	.14	.15	.09	.15

Note. Cell entries are unstandardized coefficients and standard errors in parentheses, obtained from logistic regression (Model 1) and OLS regression (Models 2 & 3). All predictors except gender were mean-centered. [a] McFadden's R^2 (McFadden, 1973). $^{+}$ $p < .10$, * $p < .05$, ** $p < .01$.

RQ1a–c concerned how the Big Five personality traits would predict the identity experiment in metaverse. No personality trait was significantly associated with the likelihood of having multiple avatars (*RQ1a*), *p*s > .150, nor with the frequency of avatar customization (*RQ1c*), *p*s > .125. However, conscientiousness tended to increase self-avatar similarity, $b = 0.19$, 95% CI [−0.01, 0.39], $p = .062$, albeit marginally so. The other four personality traits were unrelated to self-avatar similarity, *p*s > .330 (*RQ1b*).

RQ2a–c addressed how NfP would predict the three avatar use variables. Zepeto users with stronger NfP exhibited a tendency to customize their primary avatar more frequently, although it fell just short of statistical significance, $b = 0.10$, 95% CI [−0.001, 0.20], $p = .053$ (*RQ2c*). NfP had no significant association with the likelihood of possessing multiple avatars, $p = .881$ (*RQ2a*), or self-avatar similarity, $p = .731$ (*RQ2b*).

RQ3a–c had to do with the effects of self-esteem on avatar use. Those with higher self-esteem had a stronger tendency to stick to a single avatar, $b = -0.28$, 95% CI [−0.58, 0.02], $p = .070$, indicating a marginally significant relationship (*RQ3a*). They also reported higher levels of self-avatar similarity, $b = 0.29$, 95% CI [0.06, 0.52], $p = .012$ (*RQ3b*). However, self-esteem was not associated with the frequency of avatar customization, $p = .157$ (*RQ3c*).

In addition, we explored if the associations between the Zepeto users' psychological characteristics and avatar use changed as users gained more Zepeto experiences. The duration of Zepeto use had marginally significant negative interaction effects with neuroticism and openness on the number of avatars, $b = -0.01$, 95% CI [−0.03, 0.002], $p = .097$, and $b = -0.01$, 95% CI [−0.03, 0.002], $p = .083$, respectively. For self-avatar similarity, its interaction with openness was also negative, $b = -0.01$, 95% CI [−0.02, 0.001], $p = .085$. For the frequency of avatar customization, the duration of Zepeto use had a positive interaction with extraversion, $b = 0.01$, 95% CI [0.002, 0.01], $p = .004$, and a marginally significant negative interaction with neuroticism, $b = -0.01$, 95% CI [−0.01, 0.00001], $p = .051$.

Decomposition of the interactions revealed that neuroticism (Figure 2A) and openness (Figure 2B) increased the likelihood of having multiple avatars among relatively novice users. Openness tended to decrease self-avatar similarity among longtime users, but it fell short of statistical significance (Figure 2C). While extraversion increased the frequency of avatar customization among more experienced users (Figure 2D), neuroticism reduced it among them (Figure 2E). Neither NfP nor self-esteem interacted with the duration of Zepeto use for any of the avatar use variables, *p*s > .129.

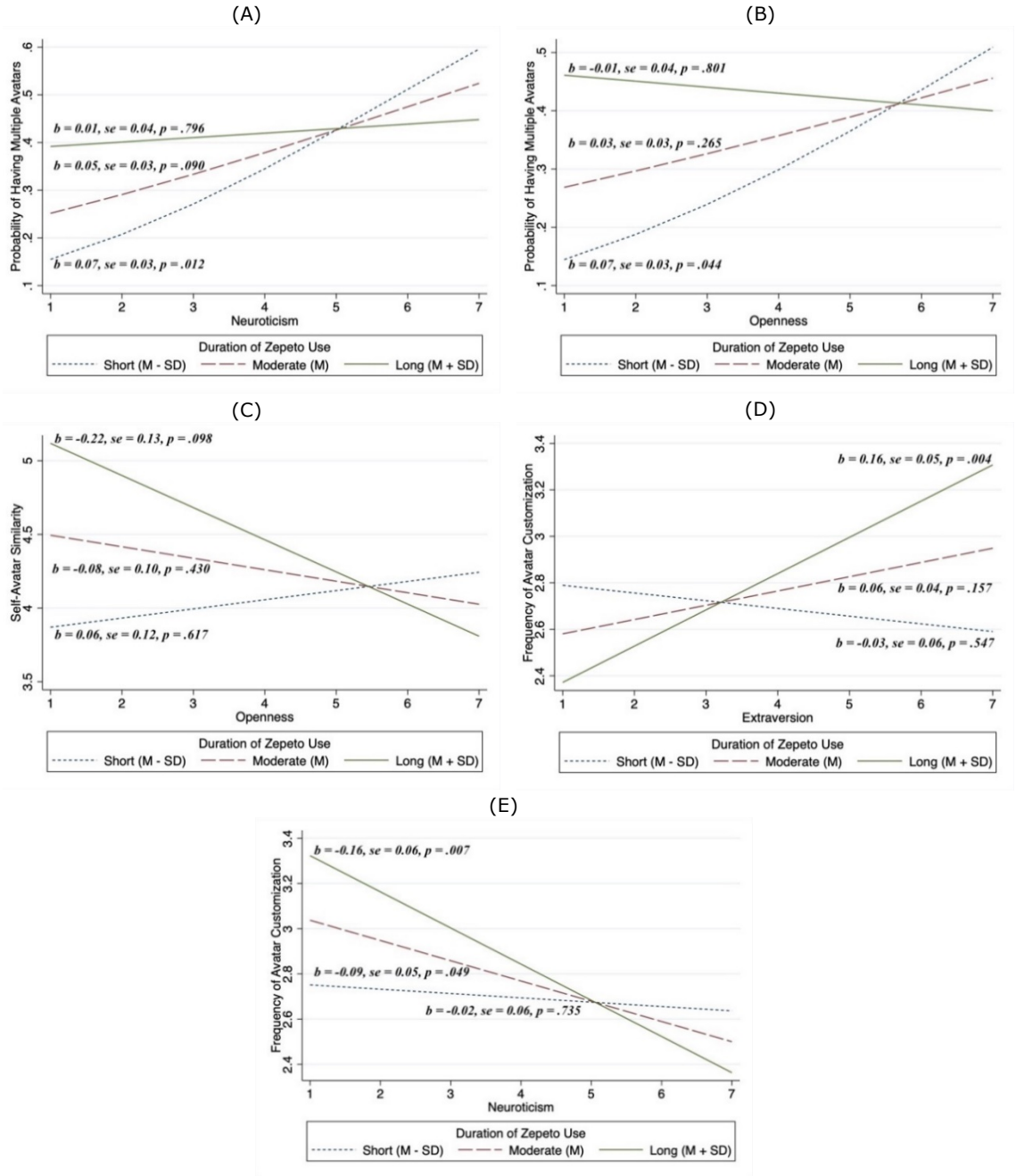

Figure 2. Interaction effects between personality traits and duration of Zepeto use. Y-axis values denote predicted scores obtained from the regression models in Table 2.

Discussion

Overall, individuals' psychological attributes were associated with avatar use in distinct manners, although these associations were often weak, warranting cautious interpretations. First, more conscientious individuals tended to report higher self-avatar similarity. Second, NfP increased the frequency of avatar customization, presumably in pursuit of others' attention and social approval. Last, those with a more positive self-view were more likely to maintain a single (versus multiple) avatar that was similar to them. Additional analyses also revealed that the effects of personality traits on avatar use varied depending on the duration of Zepeto use.

Our findings comport well with Twomey and O'Reilly's (2017) findings from their review of 21 studies: Idealized, inauthentic self-presentation was associated with low self-esteem, whereas the presentation of a true self or one's positive traits was related to higher levels of self-esteem. If inauthentic, embellished self-presentation is driven by "insecurity and the hope of receiving self-enhancing feedback" (p. 593), it stands to reason that those with higher self-esteem are more likely to create an avatar that closely resembles their offline identity and use it consistently.

More nuanced are the effects of Big Five traits, as the associations between some personality traits and avatar use changed over time. Interestingly, while some personality traits predicted the number of avatars only among novice users, their effects on self-avatar similarity and the frequency of avatar customization emerged only for more experienced users. Considering that these conditional effects were not predicted a priori, more research is needed to establish the robustness of the findings and explain why increased Zepeto experience either suppresses or facilitates the influence of personality traits on avatar use in the metaverse.

General Discussion

The current research aimed to explore (a) how users of Zepeto—a metaverse service that enables avatar-based interactions for a range of purposes—construct their online identities and (b) how their social psychological characteristics affect the ways in which they express themselves via avatars. Albeit not conclusive, the findings suggest that people create their virtual identities to fulfill various needs, such as giving voice to their suppressed selves and gaining popularity (Study 1), and users' psychological traits and self-views affect the degree to which they take advantage of the controllability of self-identity (Study 2).

Theoretical and Practical Implications

Study 1 reveals that the metaverse is not a fantasy world where all unfulfilled wishes and desires are materialized. Although some users attempt to live their true selves, liberated from the confines of their physical bodies, as they become more accustomed to the virtual environment and have more contact with other users, they become more conscious of how others view their avatars. That is, increased social engagement within the metaverse reminds its users of their identities as an object of social gaze, and the ease of physical alteration ironically reinforces an obsession with their appearances.

This supports the notion that social norms of the real world pervade virtual worlds (e.g., Martey & Consalvo, 2011; Mills, 2018).

With respect to identity experimentation, research on online games shows that although male users tend to gender-swap for *positive* experiences (e.g., to receive assistance or kinder treatment, to access items available only for female avatars) in a male-oriented environment, female users choose male avatars to avoid *negative* experiences, such as online sexism or unsolicited approaches from male users (Fahs & Gohr, 2012; Hussain & Griffiths, 2008). Although she did not engage in gender bending, one interviewee (K.) created an avatar with short hair that she dared not to wear in the real world for fear of anti-feminism attacks, suggesting that the metaverse may enable women to transgress prescriptive gender norms without risking social sanctions. Future research should examine how such practices subsequently affect (a) users' self-perceptions and (b) social perceptions of those whose looks and behaviors deviate from restrictive gender norms, and how male and female users' experiences might compare.

Our findings also raise the question of what authentic self-presentation actually entails. Just as the physical world is referred to as the "real" world, offline self-identity is often deemed as the "real" identity, rendering anything that deviates from it as false, fake, or inauthentic. Thus, if the way one presents him- or herself on Facebook assimilates how he or she is in real life, it is considered authentic, as opposed to ideal or false, self-presentation (Michikyan et al., 2014). However, it has become widely popular for Instagram users to create another fake account ("Finstagram") to express their "authentic" selves, for they feel that they cannot be true to themselves when people know who they are ("Finstagram," 2017). If one's awareness of the social gaze inhibits the expression of his or her true self, the offline self-identity may be nothing more than "a deliberate façade displayed in front of others" (Twomey & O'Reilly, 2017, p. 592). If so, the authenticity of self-presentation cannot be defined in terms of how closely it portrays an individual's offline self (i.e., actual self; Bargh et al., 2002). In this view, self-avatar discrepancy (Study 2) may reflect either the motive to project an ideal self-image (inauthentic self) or the motive to express the otherwise suppressed real self. How authenticity is performed in the virtual context, vis-à-vis the physical world, is an open question that invites further discussion.

In addition, as we focused on different motivations of and psychological antecedents to Zepeto users' identity experimentation, it remains unknown what real-life consequences such experience might incur. For instance, one study reported that authenticity, comprised of (a) the awareness of one's own physical, cognitive, and emotional states and (b) acting and expressing it accordingly, is positively associated with subjective well-being (Wood, Linley, Maltby, Baliousis, & Joseph, 2008). If so, by allowing users to express their genuine selves, the metaverse might enhance its users' psychological well-being. Moreover, even under complete anonymity, some users remain conscious of others' gazes and accessorize their avatars using luxurious virtual goods (Study 1). Then, the question becomes what social and psychological factors encourage the users' expression of the authentic self to begin with, thereby contributing to their well-being. For instance, identity-specific variables such as identity coherence (high self-concept clarity) or identity confusion (Michikyan, 2020) might serve as important predictors of identity experimentation in the metaverse. This could represent a fruitful venue for future research, especially considering that most Zepeto users belong to the Generation Z, whose sense of self-identity is still in flux.

Limitations and Future Directions

Because of the difficulties of recruiting Zepeto users, our sample (Study 2) was relatively small, hence limiting the statistical power. Additionally, only Korean users were recruited for both Study 1 and Study 2, casting doubt on the generalizability of the present findings. For instance, no interviewee reported making avatars of a different race, but experimenting with one's racial identity may occur more frequently among those residing in racially diverse countries where racial identity is more salient. Moreover, the associations between psychological characteristics and avatar use might not replicate with users from different countries, wherein the "lookism" is less of a problem than in South Korea (Yoon, 2022). Instead, their identity experimentation might take different forms, not related to the avatar's appearance.

Although the psychological predictors examined in Study 2 are relatively stable individual differences that presumably precede avatar use, it would be worthwhile to examine reverse causal relations—that is, if experimenting with virtual identity, in turn, alters users' self-views or even personalities in the long run. Relatedly, users' identity performances in the metaverse might evolve over time, as some interviewees indicated growing self-consciousness with increased social interactions in the virtual space. We focused specifically on avatar use, but how users' behavioral self-presentation develops over time and what roles avatar-mediated social interactions play in the process deserve scholarly attention.

Finally, both studies were conducted between January and February 2022, in the midst of the COVID-19 pandemic. Although it is unclear how specifically the restrictions on face-to-face interaction and limited socializing opportunities during the pandemic might have affected identity experimentation in Zepeto, it would be worthwhile to examine how, and how differently, people choose to construct and maintain their virtual identities in the post-pandemic era.

Conclusion

Using a mixed-method approach, we explored how users of a metaverse service express their identities in a way that may not be possible otherwise and what psychological attributes account for the extent to which users take advantage of the controllability of virtual identity. With split prospects for the future of the metaverse, it remains to be seen how this nascent technological development, which promises to break the constraints and boundaries of the physical world, might alter our work, leisure, and social interactions. Centering on the notion of self-identity, the current research offers a small piece of the puzzle.

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