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Beyond Avatar Coolness: Exploring the Effects of Avatar Attributes on Continuance Intention to Play Massively Multiplayer Online Role-Playing Games

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ABSTRACT

This research investigates players' continuance intentions to play massively multiplayer online role-playing games (MMORPGs) by constructing a model based on the concepts of *avatar coolness* (i.e., *avatar attractiveness*, *avatar originality*, and *avatar subculture appeal*), social identity theory, and flow theory. Analyzing survey-based data from 375 Korean MMORPG players, we found that *avatar attractiveness*, *avatar originality*, and *avatar subculture appeal* were positively related to *avatar coolness*. In addition, *avatar originality* positively affects *avatar subculture appeal*. Moreover, avatar coolness positively affects the continuance intention to play MMORPGs via avatar identification and flow state. This study is the first to develop avatar coolness and explore its role in affecting the intention to play MMORPGs. To offer "cool" avatars, the implications are those game designers should continually update avatars for freshness based on current trends, provide a variety of skins for personalization for user preferences, and offer avatars that are visually appealing to the gaming population. These require continual assessments of the MMORPG player population.

1. Introduction

With the proliferation of the term "metaverse," massively multiplayer online role-playing game (MMORPG), a type of metaverse game (Duan et al., 2021; Scheiding, 2023) has gained considerable public interest (Sun et al., 2022). An MMORPG provides a virtual world in which players can interact with virtual objects and build social relationships with numerous players (Huang & Hsieh, 2011; Mäntymäki & Salo, 2011; Sun et al., 2023). A distinctive feature of MMORPG is that the players can interact with a virtual world through their self-representative avatars/characters (Fong & Mar, 2015). MarketWatch (2023) reports the total worth of worldwide MMORPG sales was $54.81billion in 2022.

Along with this trend, existing studies have explored the elements influencing players' intention to play MMORPGs (e.g., Jung et al., 2014; Tan et al., 2017; Wu & Hsu, 2018), which is a critical concern for game designers and gaming companies. Moreover, scholars have noted that the role of avatars/game characters in influencing player perceptions should be investigated in the MMORPG context (Li et al., 2018; Teng, 2019). These studies implied that players perceive their avatars/game characters as their digital self-representations or visual representations during gameplay; that is, avatars play a significant role in revealing players' digital selves (Li et al., 2013; Liao et al., 2019; Mancini et al., 2019; Şengün et al., 2022). This cognition may lead to identifying with their avatars/game characters and

having a positive experience of MMORPGs (e.g., Teng, 2019; Wu & Hsu, 2018). Hence, in this study, we consider the role of avatars in influencing the continuance intention to play MMORPGs.

Specifically, based on the coolness theory (Sundar et al., 2014), we propose the concept of avatar coolness, which originates from avatar attractiveness, avatar originality, and avatar subculture appeal in the context of MMORPGs. Coolness theory has been adopted in user-oriented studies, which demonstrated that coolness plays a positive role in leading users to use specific devices (e.g., Ashfaq et al., 2021; Nan, Lee, et al., 2022). Therefore, we deduce that avatar coolness elements may play significant roles in influencing the player experience of MMORPGs. Consequently, our research question is as follows:

RQ: How does avatar coolness affect players' continuance intention to play MMORPGs?

2. Theoretical background

2.1. Coolness theory and avatar

Coolness theory, proposed by Sundar et al. (2014), indicates that attractiveness, originality, and subculture appeal lead individuals to perceive the coolness of specific devices. People find a particular device "cool" when they think the

device looks attractive and unique and distinguishes them from others (Nan, Lee, et al., 2022; Sundar et al., 2014). Several researchers have employed the coolness theory to explore individual experiences in the context of gaming consoles, smart speakers, and robot-serviced restaurants (Ashfaq et al., 2021; Cha, 2020; Nan, Lee, et al., 2022).

Considering that coolness is a multidimensional individual-based judgment (Sundar et al., 2014), the term "cool" can be employed to describe almost anything, including a product, service, destination, person, idea, or phenomenon (Ashfaq et al., 2021; Belk et al., 2010; Peng et al., 2016). Thus, it may be suitable to apply the concept of coolness to an individual's perception of an avatar (or game character). Consistent with this perspective and coolness theory, we propose the construct of "avatar coolness," which originates from avatar attractiveness, avatar originality, and avatar subcultural appeal. As cool avatars can lead to positive emotions in individuals (Baylor, 2011), we infer that avatar coolness plays a positive role in guiding users to play MMORPGs.

2.1.1. Avatar attractiveness

Based on past research (Lo et al., 2016; Nan, Lee, et al., 2022; Sundar et al., 2014), this study conceptualizes the term "avatar attractiveness" as the level to which MMORPG players perceive their avatars'/characters' appearance and features as attractive. In line with the view that objects with aesthetically appealing features and appearances generally attract the public's attention (Dion et al., 1972), attractive avatars are also favored by game users. This may be because attractive avatars can positively enhance game users' confidence in the metaverse or virtual environment (Liao et al., 2019; Yee et al., 2009).

According to coolness theory (Sundar et al., 2014), this study infers that avatar attractiveness will have a positive relationship with avatar coolness; that is, MMORPG players will perceive their avatars as "cool" when they are good-looking and possess flashy skills. Several empirical studies (e.g., Ashfaq et al., 2021; Chen & Chou, 2019; Tiwari et al., 2021) have found a notable association between attractiveness and coolness in the context of various products (e.g., artificial intelligence speakers); thus, supporting this viewpoint. Consequently, we hypothesized the following:

H1: Avatar attractiveness leads to increased avatar coolness in MMORPGs.

2.1.2. Avatar originality

According to Sundar et al. (2014) and Teng (2019), the term 'avatar originality' is conceptualized as the degree to which MMORPG players perceive that their avatars/characters are unique or different regarding their appearance and features. This means that players' perceived avatar originality is enhanced when their avatar has a unique hairstyle or is equipped with rare game items. Moreover, as implied by Lin and Wang (2014), individuals tend to create avatars unique to the virtual environment. By doing this, they can establish self-representations with their original appearance and features (Freeman & Maloney, 2021; Lin & Wang, 2014). This is because, as indicated by self-affirmation theory (Sherman & Cohen, 2006), individuals generally need to reveal their value by owning unique and distinctive avatars in the context of MMORPGs (Smith & Citti, 2006; Teng, 2019).

In the current study, our premise is that avatar originality will have a positive association with avatar coolness based on coolness theory (Sundar et al., 2014). Players will perceive their avatars as "cool" when they have distinctive appearances and features compared with other players' avatars. This association has been hinted at in prior studies (e.g., Ashfaq et al., 2021; Chen & Chou, 2019), indicating a remarkable relationship between originality and coolness. Consequently, we hypothesized the following:

H2: Avatar originality leads to increased avatar coolness in MMORPGs.

2.1.3. Avatar subculture appeal

Snyder (1992) and Nan, Lee, et al. (2022) have implied that individuals feel distinguished from others by possessing specific products (e.g., innovative/unique/rare products). Thus, the use of these products can contribute to the development of subcultures associated with these products. Scholars have reported that subcultures can be formed both in offline and online environments (Blevins & Holt, 2009; Wilson & Atkinson, 2005). Thus, based on the above-mentioned studies, we propose that subculture can also be formed in the context of online games; that is, MMORPG players are likely to feel that they stand apart from other players by possessing or using unique or rare avatars.

Consequently, based on the definition of subculture appeal (Nan, Lee, et al., 2022; Sundar et al., 2014), this study conceptualizes avatar subculture appeal as the degree to which MMORPG players perceive that using their avatars can differentiate them from other players. Moreover, as indicated in coolness theory and related empirical studies (Jiménez-Barreto et al., 2022; Nan, Lee, et al., 2022; Sundar et al., 2014), subculture is positively related to coolness, and originality and subculture have positive relationships. Accordingly, we inferred that these relationships would also be present in our study. Specifically, we proposed that when players use unique avatars in MMORPGs, they may feel that their avatars are "cool," and using their avatars can distinguish them from other players. Therefore, we hypothesized the following:

H3: Avatar subculture appeal is positively affected by avatar originality in the context of MMORPGs.

H4: Avatar subculture appeal will lead to increased avatar coolness in the context of MMORPGs.

2.2. Avatar identification

Social identity theory indicates that individuals tend to maintain positive and unique social identities (Tajfel & Turner, 2004). This theory has been employed to explain individuals' perceptions or behaviors in the context of virtual environments (e.g., Kim & Park, 2011; Tsai & Bagozzi,

2014). Therefore, as suggested by Teng (2019), it is appropriate to use social identity theory to illustrate players' perceptions of online games (e.g., MMORPGs). That is, social identity theory has been adopted to illustrate individuals' identification process of their avatars/characters. Based on social identity theory, some scholars have conceptualized avatar identification (e.g., Teng, 2017; Liao et al., 2019). For example, regarding MMORPGs, Teng (2017) conceptualized avatar identification as the level to which game players perceive their avatars/characters as an extension of themselves.

On the other hand, based on the traditional media and communication theory (Hoffner & Buchanan, 2005), Van Looy et al. (2010) proposed that avatar identification can originate from three constructs, namely, perceived similarity/similarity identification, wishful identification, and embodied experience/embodied identification (see Kao et al., 2022; Kao & Harrell, 2018). Among them, similarity identification (i.e., perceived similarity) plays a major role in constructing avatar identification (see Kao & Harrell, 2018; Trepte & Reinecke, 2010; Van Looy et al., 2010). Similarity identification is defined as individuals identifying with characters because of their shared notable features (Liao et al., 2019). Also, Kao et al. (2021) conceptualized similarity identification as the level to which individuals perceive themselves as similar to their avatars/characters. These are similar to the definition employed in Teng (2017) (see previous paragraph). Hence, in this research, we proposed that avatar identification can be illustrated as the extent to which game players view avatars/characters as extensions of themselves and as similar to them. Concerning MMORPGs, avatar identification has been demonstrated to have positive connections with players' positive experiences, such as flow state, loyalty, and satisfaction (see Liao et al., 2019; Teng, 2019; Wu & Hsu, 2018).

2.2.1. Relation between avatar coolness and avatar identification

Westerman et al. (2015) posited that in the virtual environment context, individuals want to maintain positive social identities by mediating their self-designed avatars. Consistent with this perspective, MMORPG players prefer to design avatars with attractive or unique appearances, which can lead to the development of positive or distinctive in-game identities (Badrinarayanan et al., 2014; Liao et al., 2019; Tajfel & Turner, 2004). Likewise, people who use "cool" products can induce a positive impression in others (Sundar et al., 2014; Westerman et al., 2015), which will have positive roles in developing positive social identities. Therefore, owning cool avatars may motivate MMORPG players to quickly form a positive in-game identity, leading them to perceive their avatars as their own (see Teng, 2017). Thus, we infer that avatar coolness and identification have a considerable association in the context of MMORPG. Thus, we hypothesized the following:

H5: Avatar coolness will be positively related to avatar identification.

2.3. Flow theory

The flow state is conceptualized as the mental state of total concentration with intrinsic pleasantness (Liao & Teng, 2017; Shernoff et al., 2003). The flow state has been demonstrated to cause individuals to become unaware of their surroundings and the passage of time (Faiola et al., 2013). That is, flow states can induce the temporal separation of individuals (Agarwal & Karahanna, 2000). Furthermore, the flow state has been discovered to positively influence the user experience of specific products and services (Dabrowski & Munson, 2011; Doherty & Sorenson, 2015).

In line with this, several scholars have employed flow theory to explore individual experiences in virtual environments (Liao et al., 2019; Shen et al., 2010; Triberti et al., 2021). Liao et al. (2019) found that avatar identification positively affects flow state in the context of online games (e.g., World of Warcraft [WoW]). Specifically, Li and Lwin (2016) and Liao et al. (2019) indicated that players would perceive the same feelings as their avatars when they experience relatedness or identify with their avatars. For instance, when players' avatars are attacked in a game, the player may experience frustration or pain (Liao et al., 2019; Wu & Hsu, 2018). Afterward, such relatedness with avatars increases players' concentration and attention (Shernoff et al., 2003). Furthermore, previous research (Dechant et al., 2021; Friehs, Dechant, et al., 2022; Friehs, Schäfer, et al., 2022) has shown that MMORPG players can enhance their sense of self-relevance and identification with their characters by customizing them; these feelings ultimately lead them to enjoy and engage with the game. Thus, we hypothesized the following:

H6: Avatar identification will be positively related to flow state.

Liao et al. (2019) posited that the flow state offers strong and positive feedback, which leads to individuals seeking a flow experience again through the repeated use of hedonic technologies. Consistent with this argument, several empirical research has demonstrated that the flow state notably affects the continuance intention to use specific devices and services (Chang & Zhu, 2012; Chen et al., 2018; Chen & Lin, 2018; Hsu et al., 2012). This association has also been verified for online games (Chang, 2013; Liu, 2017; Liu & Shiue, 2014). Hence, we hypothesized the following:

H7: Flow state will induce stronger continuance intention to play MMORPGs.

3. Methods

WoW has been regarded as one of the most representative MMORPGs that has been rapidly employed to explore the role of avatars in influencing the user experience of MMORPGs (Jung et al., 2014; Sun et al., 2023; Wu & Hsu, 2018). Therefore, we accordingly chose WoW as the questionnaire platform target for this study.

The questionnaire items adapted in present research were validated in prior studies (see Table 1). The questionnaire design process was as follows. First, the original questionnaire

Table 1. Questionnaire items.

Variables	Items
Avatar attractiveness (Sundar et al., 2014)	1. My avatar is stylish. 2. My avatar is hip. 3. My avatar is hot.
Avatar originality (Chen & Chou, 2019; Sundar et al., 2014)	1. My avatar is extraordinary. 2. My avatar stands apart from other avatars. 3. My avatar has distinctive features.
Avatar subcultural appeal (Sundar et al., 2014)	1. If I play with my avatar, it will make me stand apart from other WoW players. 2. Playing with my avatar helps me stand apart from the crowd in WoW. 3. Playing with my avatar makes me look special.
Avatar coolness (Sundar et al., 2014)	1. When I think of a cool avatar, my avatar comes to my mind. 2. My avatar has some cool features. 3. When I play with my avatar, my response is often something like, "That's cool!"
Avatar identification (Liao et al., 2019; Van Looy et al., 2010)	1. My avatar is like me in many ways. 2. My avatar resembles me. 3. I feel that my avatar is an extension of myself.
Flow (Chen et al., 2018)	1. When I play WoW, I am totally absorbed. 2. When I play WoW, my focus is totally on it. 3. When I play WoW, I am fully engaged.
Continuance intention (Chang, 2013; Nan, Lee, et al., 2022)	1. I will continue playing the game as much as possible in the future. 2. I will continue to play WoW instead of other games. 3. I plan to play the game in the future.

Table 2. Participant's demographic characteristics.

	Category	Number	Percentage (%)
Gender	Male	186	49.6
	Female	189	50.4
		375	
Age	20–29	107	28.5
	30–39	110	29.3
	40–49	119	31.7
	Over 50	39	10.4
		375	
Education	High school or below	51	13.6
	College	280	74.7
	Graduate or above	44	11.7
		375	
Years of Playing Experience	Less than 6 months	119	31.7
	6 months–1 year	89	23.7
	1 year–3 years	95	25.3
	3 years–5 years	39	10.4
	Over 5 years	33	8.8
		375	

items were revised to reflect the context of WoW and avatar. Second, the revised items were translated into Korean. Third, ten MMORPG users were requested to assess the clarity of the translated items. The seven-point Likert scales were employed to measure the items.

We requested Macromill Embrain, a well-known online survey company in Korea, to conduct an online survey of WoW users. Embrain has a panel of 1.3 million respondents. Each panel member can join Embrain online (or via mobile), undergo identity verification, and then participate in surveys. Panel members who participate in a survey receive compensation based on the expected response time and the difficulty of the questionnaire. Participants responded to the following questions at the start of the questionnaire (see Sun et al., 2023). The response options were as following: (a) I know about MMORPGs, (b) I know and have playing experience in MMORPGs, and (c) I heard about MMORPGs. Only participants who chose "b) I know and have playing experience in MMORPGs" were allowed to continually respond to the questionnaire. Of the 9 online games presented, participants were asked to choose which game they had played. Only respondents who selected WoW were allowed to proceed with the questionnaire. We then requested

the respondents to answer the questionnaire with reference to their WoW gaming experience. Because this approach allows them to easily recall their gaming experiences, resulting in a high level of data validity (Liao et al., 2019; Sun et al., 2023; Tseng et al., 2015). In total, 375 responses were obtained (see Table 2). Since this sample does not differ significantly from Korean MMORPG player statistics (20–29 years old: 34%; 30–39 years old: 29%; 40–40 years old: 24%; over 50 years old: 13%) (Korea Creative Content Agency, 2022), it can be considered demographically representative.

4. Results

4.1. Validity

To test the validity of the survey items, composite reliability (CR), factor loading (FL), and average variance extracted (AVE) were computed with AMOS 23. FL represents the weight of the association between observed and latent variables, allowing for the assessment of the influence of latent variables on the observed variables (Brown, 2015). CR serves as a measure for evaluating the reliability of the measurement variables corresponding to a latent variable, providing information on internal consistency (Hair et al., 2006). AVE is an indicator for evaluating the explanatory power of measurement variables for latent variables and is related to FLs (Bagozzi & Yi, 1988). As indicated by Hair et al. (2006), the values of FL, CR, and AVE should be greater than 0.7., 0.7, and 0.5, respectively, in order to pass the validity test. Additionally, the square root of the AVE of each construct was bigger than the inter-construct correlation (Bagozzi & Yi, 1988). Therefore, as indicated in Table 3 and Table 4, our sample was considered to satisfy the validity test.

4.2 Common method bias (CMB)

This study employed a single method to collect survey-based data, CMB can pose a threat (Avolio et al., 1991). The current research employed a common method factor to

Table 3. Reliability and validity tests.

Elements	Items	FL (>0.7)	AVE (>0.5)	CR (>0.7)
Avatar attractiveness	AA1	0.831	0.71	0.88
	AA2	0.886		
	AA3	0.808		
Avatar originality	AO1	0.885	0.81	0.93
	AO2	0.888		
	AO3	0.925		
Avatar subcultural appeal	ASA1	0.895	0.83	0.94
	ASA2	0.925		
	ASA3	0.911		
Avatar coolness	AC1	0.820	0.69	0.87
	AC2	0.831		
	AC3	0.847		
Avatar identification	AI1	0.918	0.74	0.90
	AI2	0.911		
	AI3	0.747		
Flow	FL1	0.881	0.85	0.94
	FL2	0.964		
	FL3	0.921		
Continuance intention	CI1	0.938	0.83	0.94
	CI2	0.874		
	CI3	0.916		

Table 4. Correlations.

	1	2	3	4	5	6	7
1. AA	0.84						
2. AO	0.810	0.90					
3. ASA	0.741	0.700	0.91				
4. AC	0.811	0.810	0.705	0.83			
5. AI	0.510	0.502	0.502	0.605	0.86		
6. FL	0.457	0.487	0.515	0.535	0.495	0.92	
7. CI	0.446	0.390	0.383	0.573	0.461	0.536	0.91

Table 5. CMB testing.

Construct	Indicator	Substantive factor loading (R1)	$R1^2$	Method factor loading (R2)	$R2^2$
Avatar attractiveness	AA1	0.95***	0.903	−0.065	0.004
	AA2	0.936***	0.876	−0.018	0.000
	AA3	0.799***	0.638	0.085	0.007
Avatar originality	AO1	1.011***	1.022	−0.098**	0.010
	AO2	0.885***	0.783	0.051	0.003
	AO3	0.906***	0.821	0.046	0.002
Avatar subcultural appeal	ASA1	0.892***	0.796	0.049	0.002
	ASA2	0.972***	0.945	−0.028	0.001
	ASA3	0.958***	0.918	−0.021	0.000
Avatar coolness	AC1	0.893***	0.797	−0.009	0.000
	AC2	0.843***	0.711	0.045	0.002
	AC3	0.937***	0.878	−0.035	0.001
Avatar identification	AI1	0.974***	0.949	−0.058*	0.003
	AI2	0.941***	0.885	−0.022	0.000
	AI3	0.797***	0.635	0.084	0.007
Flow	FL1	0.955***	0.912	−0.032	0.001
	FL2	0.977***	0.955	−0.018	0.000
	FL3	0.912***	0.832	0.049*	0.002
Continuance intention	CI1	0.976***	0.953	−0.037	0.001
	CI2	0.882***	0.778	0.066*	0.004
	CI3	0.961***	0.924	−0.027	0.001
Average		0.922	**0.853**	0.0003	**0.003**

Note(s). *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

Table 6. Fit indexes.

Index	Measurement model	Structural model	Recommended values
Chi-square/df	1.922	2.400	< 3
CFI	0.979	0.958	> 0.9
GFI	0.925	0.897	> 0.8
RMSEA	0.050	0.061	< 0.08
TLI	0.973	0.947	> 0.9

examine the CMB applying SmartPLS 4.0 (see Liang et al., 2007; Pan et al., 2020). All the measurements were incorporated into a common method factor. The outcomes revealed that most method factor loadings were insignificant (see Table 5). The average method variance and substantive variance were 0.003 and 0.853, respectively. As the small and unremarkable method variance, there was no notable threat of CMB.

4.3. Model fit

Furthermore, we computed the fit indices of the measurement and structural models. As indicated in Byrne (2013), a good model should have a Chi-square/df < 3, RMSEA < 0.08, GFI >0.8, a CFI >0.9, and TLI >0.9. Therefore, as reported in Table 6, both structural and measurement models have good fits.

4.4. Hypotheses testing

To test the proposed hypotheses, we applied structural equation modeling (SEM) with AMOS 23. SEM, the most widely employed statistical method for analyzing the complex connections among psychological variables (Ma, 2022; Nan, Shin, et al., 2022), integrates features of both multiple regression and factor analysis to evaluate a set of interrelated dependence associations (Kline, 2015; Zhang et al., 2012). As shown in Figure 1 and Table 7, all the hypotheses were accepted. Specifically, avatar coolness was notably influenced by avatar attractiveness (H1, $\beta = 0.381$, CR = 5.070, $p < 0.001$), avatar originality (H2, $\beta = 0.391$, CR = 4.932, $p < 0.001$), and avatar subculture appeal (H4, $\beta = 0.149$, CR = 2.789, $p < 0.01$). Avatar subcultural appeal was positively affected by avatar originality (H3, $\beta = 0.718$, CR = 15.857, $p < 0.001$). In addition, avatar coolness was a significant predictor of avatar identification (H5, $\beta = 0.595$, CR = 10.325, $p < 0.001$). Furthermore, avatar identification positively influenced the flow (H6, $\beta = 0.468$, CR = 8.779, $p < 0.001$), and flow positively affected continuous intention to play (H7, $\beta = 0.586$, CR = 9.219, $p < 0.001$).

4.5. Additional analysis: control variables

Based on prior studies (Kaye et al., 2017; Sun et al., 2023; Van Reijmersdal et al., 2013), our research examined three control variables: gender, age, and years of playing experience. Concretely, we evaluated the effects of the control variables on five dependent variables: avatar subcultural appeal, avatar coolness, avatar identification, flow, and intention (see Table 8). Our research also performed a sensitivity analysis by comparing results with and without the inclusion of the control variables (Liao et al., 2020; Sun et al., 2023). It is observed that the path coefficients changed to only a minor degree (0.024) upon the exclusion of these controls. The consistency of our results highlights the robustness of our conclusion in light of variations in the control variables.
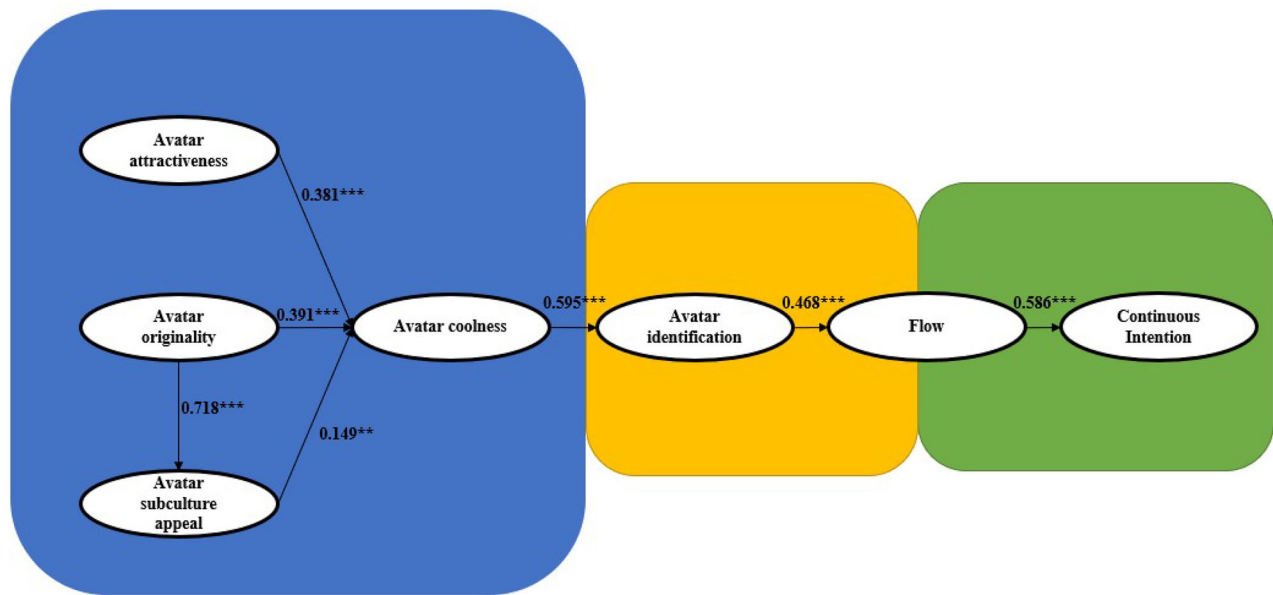
Figure 1. Analytical results.

Table 7. Outcomes of hypothesis tests.

Hypothesis	Hypothesized relationship	Estimate
H1	Avatar attractiveness -> Avatar coolness	0.381***
H2	Avatar originality -> Avatar coolness	0.391***
H3	Avatar originality -> Avatar subculture appeal	0.718***
H4	Avatar subculture appeal -> Avatar coolness	0.149**
H5	Avatar coolness -> Avatar identification	0.595***
H6	Avatar identification -> Flow	0.468***
H7	Flow -> Continuous intention	0.586***

Note. ***$p < 0.001$; **$p < 0.01$.

Table 8. Control variables.

Effects of control variable	Path estimate
Gender -> Avatar subcultural appeal	0.312**
Age -> Avatar subcultural appeal	0.02
Years of playing experience -> Avatar subcultural appeal	0.089*
Gender -> Avatar coolness	−0.026
Age -> Avatar coolness	0.024
Years of playing experience -> Avatar coolness	0.04
Gender -> Avatar identification	−0.216*
Age -> Avatar identification	0.13*
Years of playing experience -> Avatar identification	0.067[a]
Gender -> Flow	−0.041
Age -> Flow	−0.088[a]
Years of playing experience -> Flow	0.187***
Gender -> Intention	−0.255*
Age -> Intention	0.059
Years of playing experience -> Intention	0.268***

Note. ***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; [a]$p < 0.1$.

5. Discussion

The current research explores the factors affecting the continuance intention to play MMORPGs. To this end, we mentioned a causal model based on the concepts of avatar coolness, social identity theory, and flow theory; and used the SEM approach to test the model. The critical theoretical and practical implications of the current research are as follows.

5.1. Theoretical implications

First, it was uncovered that avatar coolness positively affected avatar identification. This result indicates that individuals tend to perceive their cool avatars as an extension of themselves. That is, players maintain their positive in-game identities by controlling cool avatars and perceiving their avatars as themselves. As few research has explored the association between avatar coolness and avatar identification, this relationship demonstrated in the current research can be considered a novel contribution. Furthermore, this finding indirectly demonstrates a notable relationship between coolness and social identity theories because of the discovery of a remarkable relationship between avatar coolness posited based on coolness theory and avatar identification posited based on social identity theory.

Second, we concluded that avatar identification positively influenced the flow state, whereas the flow state is positively associated with continuance intention to play MMORPGs. These results show that players who identify more with their avatars/characters are more engaged in and continually play MMORPGs. These results have been confirmed also in several empirical studies on online games (e.g., Liao et al., 2019; Liu, 2017).

Third, avatar attractiveness, avatar originality, and avatar subculture appeal positively affected avatar coolness. These outcomes demonstrate that MMORPG players feel that their avatars are "cool" when they perceive that their avatars look attractive and unique, thus distinguishing themselves from other players. Theoretically, this is tied to the viewpoints implying players tend to create avatars that are attractive and stand out from the crowd (Ducheneaut et al., 2009; Sibilla & Mancini, 2018)

Fourth, avatar originality was positively related to avatar subculture appeal. That is, players will feel that they stand apart from other MMORPG players when their avatars have unique features. This outcome is also supported by Nan, Lee, et al. (2022), who demonstrate the notable association between originality and subculture appeal.

Overall, this study demonstrates that avatar coolness can play a notable role in the MMORPG player experience by both introducing new theoretical aspects and confirmed other aspects raised in prior work. As the concept of avatar coolness is newly developed in this study, we propose that future studies of avatars and online games should consider more of the role of avatar coolness.

5.2. Practical implications

As avatar attractiveness and avatar originality play stronger roles in increasing continuous intention to play MMORPGs compared with avatar subculture appeal, we suggest that MMORPG game managers should focus on increasing players' perceived avatar attractiveness and originality.

First, MMORPG managers should provide attractive avatars to players. While seemingly obvious, the implementation requires considerable effort to stay current with ever-shifting gaming trends. To this end, practitioners can investigate the players' preferences through a player survey or interview on the avatar's appearance and via analysis of gaming analytics of avatars and skin selection. Also, managers can provide flashy items to attract players to continue playing.

Second, MMORPG providers can enable players to customize their own avatars with a variety of skins. A customization option that will attract players further is that players can set not only their avatar's hairstyle but also customize the color of the avatar's eyes and wrinkles on their skin. This also allows for greater detail of individualization at minimal development costs. The more detailed these avatar customization options are, the more players can create their own unique avatars that are distinct from other players' avatars.

However, adding too many cosmetics to MMORPGs is inappropriate, as it may prompt players to invest more money and could potentially lead some players to be addicted to the game (Green et al., 2020; Lemenager et al., 2020). Thus, implementing non-paid systems such as the transmog mechanic becomes an option to meet the players' needs.

5.3. Strengths, limitations, and suggestions for future research

Several scholars have indicated that avatar attributes have notable roles in increasing player experience of MMORPGs (e.g., Li et al., 2018; Teng, 2019). From this point of view, our study newly developed avatar coolness constructs based on coolness theory and explored their effects on MMORPG player experience. Specifically, we found that avatar coolness (avatar attractiveness, avatar originality, and avatar subculture appeal) have a role in increasing players' continuance intention to play MMORPGs via avatar identification and flow state. Considering that rare studies applied coolness theory in the context of avatars, the development of avatar coolness constructs can be regarded as a new contribution to the coolness theory area.

Despite the significant contributions of this study to the MMORPG field, the following limitations should be addressed in the future. First, data were collected from Korean WoW players. Thus, future studies can validate our model in other countries (e.g., United States) or for other MMORPGs (e.g., Final Fantasy IXV). Second, as similarity identification plays a main role in constructing avatar identification (see Kao & Harrell, 2018; Trepte & Reinecke, 2010; Van Looy et al., 2010), this research employed the dimension of similarity identification to measure avatar identification. Therefore, future studies should consider other dimensions of avatar identification (e.g., wishful identification and embodied identification) when exploring the effects of avatar coolness on intention to play MMORPGs. Third, since users can own multiple characters in WoW, future research could investigate whether levels of avatar identification vary depending on their primary and alt characters.

6. Conclusion

In conclusion, this research sheds light on the significance of avatar coolness in shaping players' continuance intentions to participate in MMORPGs. By integrating avatar attractiveness, avatar originality, and avatar subculture appeal into a cohesive model, this research demonstrates their positive relationships with avatar coolness. Additionally, our findings revealed a positive influence of avatar originality on avatar subculture appeal. Furthermore, we established that avatar coolness exerts a positive impact on players' intentions to continue playing MMORPGs through avatar identification and flow state experiences. The current research contributes to the gaming literature by introducing and examining the concept of avatar coolness and its pivotal role in influencing players' behavioral intentions. For game designers aiming to enhance player engagement and retention, it is crucial to continuously update avatars to align with current trends, offer a diverse range of skins for personalization to cater to user preferences, and ensure visually appealing avatars that resonate with the gaming community. Periodic assessments of the MMORPG player population are essential to maintain relevance and sustained player interest in the gaming environment.

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