When Luxury Brands Go Digital: The Influence of Gamification

A Study of Gamification's Impact on Luxury Brand Perception and Purchase Intentions Among Millennials and Gen-Z

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ABSTRACT

This thesis investigates the impact of gamification on luxury brands, focusing on brand perception and purchase intention among Millennials and Generation Z. The COVID-19 pandemic catalyzed significant changes in the luxury market, prompting brands to adopt digital strategies, particularly within video gaming and the metaverse, to sustain consumer engagement and brand awareness. As Millennials and Gen-Z are anticipated to constitute 50% of the luxury market by 2025, and with over 80% of these demographics being active gamers, luxury brands have recognized the potential of gamification to reach this digitally wired audience.

Through a mixed-methods approach, this study combines quantitative surveys and sentiment analysis to explore how luxury brand integration in video games influences consumer attitudes and behaviors. The theoretical framework encompasses the democratization of luxury, digital-age luxury marketing, and the Theory of Planned Behavior, providing a comprehensive understanding of the interplay between luxury branding and gaming.

Key findings reveal that self-congruity with in-game avatars positively correlates with virtual purchase intention, while attitudes towards luxury brand gamification significantly enhance both virtual and real-life purchase intentions. Furthermore, positive perceptions of luxury brand gamification elevate brand coolness and overall brand perception. Sentiment analysis of Reddit comments highlights a generally favorable reception of luxury brand collaborations within gaming environments.

This research offers valuable insights for luxury brand managers on effectively leveraging gamification to engage younger, tech-savvy audiences without inciting brand aversion. Academically, it contributes to the discourse on digital marketing strategies, enriching the understanding of consumer behavior in the context of luxury brands in virtual spaces. The findings underscore the importance of strategic digital integration for luxury brands aiming to sustain relevance and appeal in an increasingly virtual consumer landscape.

Keywords: Luxury brands, gamification, brand perception, purchase intention, Millennials, Gen-Z, social media, digital marketing.

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1. Introduction

Luxury companies have historically captivated customers through craftsmanship, exclusivity, status, and specialization in tailoring goods, in-store experiences, and unique customer service (Rodrigues et al., 2024, p. 3). Many brands in the luxury industry were reluctant to enter the digital environment and sell their goods online as it was often thought that the classic attributes of luxury, such as the exclusivity, high prices and sensory experience of buying an item in-store would be a mismatch for the internet where everything is accessible for all people, with low prices, and where the sensory experience of the consumer would be limited (Dobre et al., 2021, p. 2532). However, in recent years the luxury industry has undergone rapid digital transformations, forcing luxury brands to find ways to transfer these qualities of their brick-and-mortar store experiences to a digital experience.

Following the COVID-19 outbreak and the preventive measures that accompanied this pandemic, a large part of the luxury consumer sector was unable to leave their homes, which resulted in the luxury industry experiencing a significant decrease in revenue across multiple subsectors of luxury industry, including fashion, cars, high-end food, and fine wines (D'Arpizio et al., 2021, p. 6-7; Jain et al., 2022, p. 156). The impact of the COVID-19 pandemic in combination with the shift in consumer culture that has taken place in the luxury industry over the past decades (Ma et al., 2021, p. 244) resulted in the acceleration of the digital transformation in the industry, with luxury brands increasingly moving into the world of digital entertainment, specifically video gaming, to maintain consumer expectations and increase their brand awareness (Jain et al., 2022, p. 157; Rodrigues et al., 2024, p. 1).

The future is looking positive for the personal luxury industry in the coming decade as the market value is predicted to grow significantly to approximately $580 billion USD by 2030, predicting a more than 50% increase compared to the $353 billion USD market value in 2022 (D'Arpizio et al., 2023, p. 4). One of the primary drivers behind the predicted growth within the luxury industry is generational trends – in 2022, Millennials and Generation Z were the sole drivers of growth in the luxury market (D'Arpizio et al., 2023, p. 4). Millennials, currently at their highest earning potential, make up the majority of luxury purchases and are expected to drive income growth for the luxury industry in the near future. However, Generation Z is leading social and cultural change. The spending of this generation, along with that of Generation Alpha, is expected to grow three times faster than other generations through 2030, making up a third of the market (D'Arpizio et al., 2023, p.

4). In addition to this, in 2025, Gen Z and the Millennials are expected to represent 50% of the luxury market (Zahair, 2022, p. 2), which will increase up to 85% by 2030 (D'Arpizio et al., 2024, p. 4) – showing that consumers from these generations will become a valuable target for the luxury industry. Concerning the purchasing behavior of luxury consumers from Gen Y and Gen Z, these differ from traditional luxury consumers by their heavy use of multiple digital devices and social media – valuing peer approval and sharing their luxury experiences online, rather than relying on endorsements (Batat, 2019, p. 187). Furthermore, Gen Zers and Millennials seek validation and connection through their virtual communities during and after the purchase (Batat, 2019, p. 187). Additionally, this consumer segment not only makes up a large part of the market but also has a strong global presence, which is advantageous for international luxury brands, as it increases the scalability of marketing strategies for brands and allows them to reach a wide target audience, compared to the segmented groups of previous generations (Batat, 2019, p. 187). Therefore, it is important for luxury marketeers to constantly come up with new strategies to target these audience according to the values that these generations hold, such as spending time in virtual worlds and being globally present. One way through which this generation is globally present is through video games.

These generations are digitally wired and are spending more and more time online and in the 'metaverse' (Guzzetti et al., 2023, p. 206), with 81% of Generation Z and 77% of Millennials being active gamers (Rodrigues et al., 2024, p. 5). The player profile of the online gamer increasingly resembles that of potential luxury consumers, making them a target segment of interest for luxury brands (Alanadoly & Salem, 2024, p. 2; Rodrigues et al., 2024, p. 3). Consequently, luxury brands are looking interact with their future generation of consumers. Therefore, luxury brands are looking into gamification to improve their brand image and influence positive consumer behavior (Guzzetti et al., 2023, p. 206; Rodrigues et al., 2024, p. 5-6). Moreover, luxury brands are focusing on marketing and advertising, as gamification is considered a new strategy to increase consumer engagement through the integration of brands and products into gaming content (Guzzetti et al., 2023 p. 206; (Saxena et al., 2023, p. 1026; Yoon, 2019, p. 208).

The integration of luxury brands and products into gaming content, or gamification, often consists of character customization whereby players can purchase cosmetic in-game items, such as wearables or skins for online avatars – which are designed by, and often adhere to, the design language of the luxury brand (Guzzetti et al., 2023 p. 206; Jain et al., 2022, pp. 157-159). Furthermore, players can buy virtual items which often stands for the digital

version of the material goods (Guzzetti et al., 2023 p. 206; Saxena et al., 2023, p. 1021). Guzzetti et al. (2023, p. 207) refer to these collaborations between luxury brands and video games, as ‘gamified product placements’. The digital asset of virtual fashion or non-fungible tokens has risen to prominence in gamified marketing activities (Guzzetti et al., 2023, p. 206). Previous studies have found that gamification can positively influence purchase intention (Hussain et al., 2022, p. 535), can influence brand equity positively, and is likely to have a positive effect on brand perceptions (Salem et al., 2023, p. 13). However, Guzzetti et al. (2023, p. 211) found a pressing need to highlight the possible adverse effects of gamification, how, poor virtual product performance, unethical targeting practices, excessive commercialization, and exploitative monetization by games can trigger negative emotions toward luxury fashion brands, which, they add, was a significant discovery. This research aims to acquire a better understanding of the effects that gamification has on luxury brands. Therefore, the research question is stated as follows: To what extent does brand integration in video games affect brand perception and purchase intention for luxury brands?

1.1 Academic and Societal relevance

The rapid digital transformation in the luxury industry in recent years, particularly following the COVID-19 pandemic, has forced luxury brands to continuously innovate their marketing strategies to maintain consumer engagement and increase brand awareness. As previously mentioned, in the last decade the luxury sector has increasingly moved into the online space. Despite this transformation, there remains a gap in research on how incorporating gamification strategies affects luxury consumers' motivations and behaviors. (Jain et al., 2022, p. 156). This research seeks to address this gap in the literature specifically by focusing specifically on gamification and luxury brands, and the effect it has one consumer behavior and brand perceptions.

Furthermore, in research on gamification as a digital marketing tool to create a luxury experience online, Milanesi et al. (2022, p. 2149) noted a gap in the literature concerning the role of gamification analytics in understanding player behavior in terms of product selection. This indicates a critical need to explore the effect that executing a gamification marketing strategy to enhance the understanding of consumers’ digital behavior, presenting valuable avenues for further research. This research fills the gap by exploring how gamification analytics can enhance understanding of consumer behavior and improve marketing strategies in the luxury market. Rathi et al. (2022, p. 247) emphasize the dominance of social media

marketing and the necessity for future research to examine the impact of advanced media technologies such as gamification. Given the increasing prevalence of virtual platforms, investigating these aspects within the context of luxury brand gamification is crucial. Additionally, Rodrigues (2024, p. 2) states that while there is a clear trend connecting in-game advertising and the luxury industry, this phenomenon is not yet sufficiently covered in the literature. This research aims to fill this void by examining the impact of integrating gamification into luxury brands on brand equity-related concepts such as brand perception and brand coolness, and how these efforts can influence real-life and virtual purchase intentions among Millennials and Generation Z.

Academically, this research advances the field of luxury marketing, media and business studies by researching the relationship between luxury branding and gaming through the lens of self-congruity, the Theory of Planned Behavior, brand perception, and brand coolness. This study addresses the previously mentioned research gaps, by focusing on how gamification influences brand perception and purchase intentions among Millennials and Generation Z. It offers a comprehensive understanding of how positive attitudes towards luxury brand gamification can enhance both virtual and real-life purchase intentions, as well as overall brand perception and coolness.

From a societal perspective, this research is relevant as it provides luxury brand managers with insights on leveraging video game placements effectively. By understanding the digital behaviors and preferences of younger, tech-savvy audiences, brands can enhance their engagement strategies and maintain relevance in an evolving marketplace. The study also contributes to the discourse on digital marketing strategies, enriching our understanding of consumer behavior in virtual spaces. Additionally, it will provide luxury brand managers with insights on leveraging video game placements effectively and effectively executing digital marketing strategies to target the upcoming generation of luxury consumers (Guzzetti et al., 2023, p. 206).

2. Theoretical Framework

2.1 Democratization of Luxury

The term "luxury" is derived from the Latin word "Luxus," describing a lifestyle marked by having more than enough or displaying wealth far beyond basic needs. (Brun & Castelli, 2013, p. 827 ; Cabigiosu, 2020, p. 9 ; Nueno & Quelch, 1998, p. 62). Historically, luxury was influenced by aristocratic and artisanal models, relying on high-quality and scarce raw materials, mainly sold through local markets (Cabigiosu, 2020, p. 11). The affordances of the Industrial Revolution reshaped luxury, resulting in significant to increases in productivity, standardizing goods, and enabling global sales, forming the basis for today's luxury industry (Brun & Castelli, 2013, p. 827; Cabigiosu, 2020, p. 9).

Nearing the end of the 19th century, the first luxury brands appeared, primarily offering glass, silverware, and fine china (Cabigiosu, 2020, p. 12; Nueno & Quelch, 1998, p. 62). These brands provided the bourgeoisie access to hand-crafted designs that were before only accessible to the royals (Danziger, 2005, p. 18; Nueno & Quelch, 1998, p. 62). As luxury became more accessible, it evolved to signify extraordinary quality and exclusivity (Danziger, 2005, p. 18).

In the latter half of the 20th century, globalization and developing economies created a growing middle class with significant disposable income (Brun & Castelli, 2013, p. 832; Danziger, 2005, p. 19; Shukla et al., 2022, p. 782). Luxury brands responded by developing products that made previously inaccessible brands available to a broader audience (Danziger, 2005, p. 13; Shukla et al., 2022, p. 782). Starting in the 1960s, fashion houses shifted from producing unique pieces (haute couture) to more affordable, everyday clothing (prêt-à-porter) (Brun & Castelli, 2013, p. 831; Cabigiosu, 2020, p. 13; Pierazzo, 2019, p. 213). This democratization reduced the exclusivity of luxury goods (Shukla et al., 2022, p. 44).

By the 1980s, the luxury industry expanded to include cosmetics, jeans, accessories, food, and consumer electronics, reaching a wider consumer base (Cabigiosu, 2020, p. 13). In 1984, a shift occurred from conspicuous consumption to experiential luxury, driven by the baby boom generation, who preferred experiences over traditional status symbols (Danziger, 2005, p. 7). New luxury focuses on consumer experiences, while old luxury maintains traditional ideals of status and prestige (Danziger, 2005, p. 7). The expansion of luxury

brands into more accessible categories like cosmetics and eyewear allowed more consumers to engage with luxury, enhancing the emotional experience of buying luxury products (Cabigiosu, 2020, p. 17).

The 'New Luxury' offers high-quality goods and services at more accessible prices for the middle class (Cabigiosu, 2020, p. 14). The luxury industry has evolved from an artisanal, locally focused market to a global, industrial sector embracing mass production and wider consumer access. Luxury brands now target not just traditional elites but also newer generations, including Millennials and Gen Z (Batat, 2019, p. 187).

2.2 Digital-Age Luxury Marketing and Audience Shift Towards Millennials and Gen Z

In the 21st century, luxury brands must provide more than just excellent quality and craftsmanship, they should also offer a unique and rewarding customer experience (Batat, 2019, p. 36). Economic recessions and high levels of competition forced luxury brands to transform (Kim & Ko, 2012, p. 1480). Nowadays, solely relying on their brand symbol is no longer sufficient for luxury brands. Instead, the emphasis must shift towards cultivating a brand legacy, ensuring product quality, enhancing aesthetic appeal, and building reliable customer relationships to achieve success (Kim & Ko, 2012, p. 1480). Essentially, a new competitive field emerges where companies succeed or fail based on creativity, innovation, and brand power, and are tasked with infusing objects with symbolic values, independent of the conventional demands for rarity and exclusivity Cabigiosu (2020, p. 14).

In the coming decade, Gen Z and the Millennials are becoming a key demographic for the luxury market (Zahair, 2022), and as a result of this luxury brands are looking for ways into the digital sphere to tap into this future generation of consumers (Guzzetti et al., 2023, p. 206; Rodrigues et al., 2024, p. 1; Salem et al., 2023, p. 3). Rodrigues et al. (2024, p. 1) add to this by stating that Millennials and Gen Z are using games to strengthen their connections and bond with their favorite luxury brands. Additionally, the fact that the majority of Gen Z and Millennials are active gamers provides a compelling reason for luxury brands to target this audience through gaming. Recognizing this trend, along with the big success of video games and the wide reach of social media, several luxury brands are embracing gamification. This strategy helps them attract young customers and guide them toward their products and services (Batat, 2019, p. 191)

2.3 Gamification and Luxury Brands: Engaging Gen Z and Millennials in the Metaverse

Gen Z and Millennials are increasingly spending time in gaming spaces and within the 'metaverse' – and, because of this, luxury brands are investigating the potential of gamification to improve brand image and influence favorable consumer behavior (Guzzetti et al., 2023, p. 206). The term gamification was first mentioned in 2008, however, its definition has since been a constant point of debate (Deterding et al., 2011, p. 9). One of the first attempts to define gamification in academia was by Huotari and Hamari (2012, p. 18), where the researchers looked at gamification through the lens of service industry marketing, noting several similarities.

Looking through the lens of the service industry, Huotari and Hamari (2012, p. 20) define gamification as enriching a service with game-like elements to make the purchase experience more engaging and involving. In later publications, Hamari (2019, p. 1) adds to this by stating that gamification efforts are often implemented to provide consumers with a positive experience similar to playing games, while also influencing consumers' mental and emotional processes, for example by making consumers engaged. Guzzetti et al. (2023, p. 206) conceptualize gamification as the process of making services and products to be more like games. Within the marketing and advertising sector, however, gamification is viewed as an innovative approach to boosting consumer involvement by incorporating brands and products into gaming content (Yoon, 2019, p. 212), where there are two keyways in which this is employed: advergames and in-game advertisements (Reay & Wanick, 2023, p. 79; Terlutter & Capella, 2013, pp. 95–96).

Advergames are games created and designed with the sole purpose of promoting specific brands or products (Ingendahl et al., 2022, p. 274; Terlutter & Capella, 2013, p. 96). These games have as goal to leave a lasting and favorable impression for the brand and generate traffic to the website of the brand (Capella, 2013, p. 96). Advergames are developed to be enjoyable, easy, and rewarding, and can often be played for free on the brands' website (Capella, 2013, p. 96). This genre of games has become common, and many of these games promote food items, some of which are unhealthy. A notable example of an enormously successful advergame is the mobile game "Scarecrow" created by the Mexican fast-food chain Chipotle. In this game, players guide a scarecrow to deliver fresh food in the fictional world of Plenty to get a discount at the restaurant. The advergame effectively promoted Chipotle's "food with integrity" vision and became one of the most successful digital ad

campaigns (Yoon, 2019, p. 204).

In-game advertisement (IGA) is defined as the incorporation of product placements in a video game. In games where IGAs appear, the primary goal of these games is to provide enjoyment for the player, as these are not reliant on ad placements for a seamless playing experience (Terlutter & Capella, 2013, p. 95). In-game advertisements can be embedded within the gameplay in a manner that is either subtle or prominent or can be shown on the loading screens (Terlutter & Capella, 2013, pp. 95–96). One example of this occurred in the game *Death Stranding,* where players could consume a Monster Energy drink to restore energy levels (Ingendahl et al., 2022, p. 274).

An increasingly popular of incorporating product placements in video games is through ‘skins,' which are virtual outfits that players can purchase and use to customize their in-game avatars (Reay & Wanick, 2023, p. 79). This is a route luxury brands often take regarding gamification, for example, Prada with their digital sportswear for Riders Republic, Moschino released a digital skin-pack for The Sims, Balenciaga’s partnership with Fortnite (Reay & Wanick, 2023, p. 74), and Fendi’s collaboration with Pokemon GO (Shahid, 2024).

Moschino and The Sims, Balenciaga and Fortnite, and Fendi and Pokemon GO also collaborated on real-life, luxury collections in addition to their virtual collections (Reay & Wanick, 2023, p. 74; Shahid, 2024, p. 1).

2.4 Luxury gamification, Self-congruity, and Virtual Purchase intention

As previously mentioned, luxury brand Moschino collaborated with The Sims on a real-life collection, in addition to their virtual collaboration. Here, the real-life collection closely resembled the garments worn in the game, with the brand stating it allows you to 'become your own perfect avatar,' suggesting that Moschino's designs enable a seamless alignment between a virtual character's customization and the real person's style (Reay & Wanick, 2023, p. 74). This collaboration between Moschino and The Sims illustrates the concert of self-congruence by allowing individuals to align their real-life appearance and style with their virtual avatars.

In academia, self-congruity is used to measure to what extent the player's sense of self matches with those of the characters or avatars in a game (Davis & Lang, 2013, p. 52). Previous research has shown that players conceptualize their in-game avatar as an ideal self, and therefore create or select an avatar according to their ideal traits. (Ko & Park, 2020, p. 614; Kartsanis & Murzyn, 2016, p. 33). In the creation of the avatar, players design their

character to be more mature, attractive, outgoing, courageous, or stronger than they perceive themselves to be in real life (Ko & Park, 2020, p. 614). Guzzetti et al. (2023, p. 206) found that individuals will pay real money to have virtual luxury items for reasons similar to purchasing material consumer goods: social motivations to gain status and prestige in the eyes of other players. This desire to spend real money on luxury items in virtual environments is defined as virtual product purchase intention, a concept detailed by Park and Kim (2023, p. 12) to describe the intent to buy virtual items. Additionally, Ko and Park (2020, p. 614) found that individuals are motivated to spend money on in-game purchases because they want to make their real selves more like their ideal virtual selves in the virtual world. Research by Milanesi et al. (2022, p. 2146) adds to this argument by finding that players create personalized avatars to promote immersion and enhance their involvement in the game. These avatars represent virtual versions of themselves, allowing them to pursue aesthetic and pleasure-driven goals. Consequently, players can explore luxury styles by creating virtual outfits and enhance their experience even further by constantly acquiring new items. Lastly, Davis and Lang (2013, p. 60) found in research on self-congruity and its effect on gaming frequency and in-game purchases, that in most gaming genres, self-congruence is positively linked to increased gameplay and spending. Park and Kim (2023, p. 2) found that virtual luxury products often contain certain positive traits such as often being more affordable and accessible than to their physical counterparts, providing consumers the experience of luxury for a significantly more accessible price. Based on the research, by integrating the results of previous studies on self-congruence, the following hypothesis has been formulated

H1: Self-congruence with in-game characters is positively associated with virtual purchase intention

2.5 Theory of Planned Behavior and the effect of attitudes on Purchase intention

The Theory of Planned Behavior (TPB), conceptualized by Icek Ajzen, is designed to forecast an individual's intentions to engage in particular actions by considering three key elements: perceived behavioral control, attitudes toward the action, and social pressures or subjective norms (Ajzen, 1991, p. 181).

The first factor, attitudes toward the behavior, entails that a person's positive or negative opinion about an action will influence their desire to do it, which in turn shapes their

intention to perform that action (Ajzen, 1991, p. 181). Secondly, subjective norms, refer to the social and peer pressure a person perceives to behave in a certain way, which in turn can influence their decision to engage in or avoid a certain behavior (Ajzen, 1991, p. 188-189). The last key element, perceived behavioral control, involves the individual's perception of the ease or difficulty of performing the behavior, encompassing their confidence in their ability to do so (Ajzen, 1991, pp. 188-189).

TPB is often used in the marketing field to predict how the attitudes of consumers toward a behavior or act can lead to future purchase intention (Tan et al., 2017, p. 461). Here, purchase intention can be defined as a consumer's plan to acquire a product – which can be influenced by various factors that impact the actual buying decision, serving as a critical metric for evaluating a company's performance (Son & Jin, 2019, p. 1517). Similarly, Kim et al. (2023, p. 2285) conceptualize purchase intention as a consumer's attitude and desire to buy goods or services from a particular brand, in this case, a luxury brand.

Bian and Forsythe (2012, p. 1449) found that the intent to purchase a luxury item is significantly influenced by the consumers' attitudes towards these brands. Additionally, Jain et al. (2015, pp. 164-165) found that the enjoyment derived from products, their perceived quality, the importance of material possessions, and the expression of one's identity significantly affect consumers' attitudes toward buying luxury fashion items. Therefore, because players – in-game – often express their identity through the customization of their characters with in-game cosmetic items such as wearables or skins – the enjoyment that an individual experiences through expressing their identities with these in-game cosmetics significantly influences the buying behavior of consumers regarding luxury fashion products.

In the context of this research, understanding how a consumer's attitude toward a luxury brand integration in video games will predict the purchase intention is of interest. Therefore, the second and third hypotheses are stated as follows:

H2: Attitude towards gamification of luxury brands is positively associated with virtual product purchase intention.

H3: Attitude towards gamification of luxury brands is positively associated with real-product purchase intention

2.6 Gamification, Brand Perception, and Brand Coolness

Positive perception is crucial for a company's success. According, to Romaniuk and Sharp (2003, p. 218) it is a widely held belief that brand perceptions significantly impact purchasing behavior, and as a result of form the foundation of many businesses' marketing communication strategies. This aligns with Arajas-Portas's (2015, p. 2) finding that the measurement of brand perception has emerged as one of the most critical areas of focus for marketers and social media professionals today. Furthermore, strong brand perceptions have been shown to reduce a company's going bankrupt significantly (Larkin, 2013, p. 2).

As younger generations are becoming an increasingly important target audience, luxury brands are exploring gamification opportunities to enhance brand perception to appeal to younger audiences (Guzzetti et al., 2023, p. 206). However, Guzzetti et al. (2023, p. 207) found that the perception of gamification activities triggers negative emotions toward luxury fashion brands and can be a contributing factor to brand hate.

The findings of Barajas-Portas (2015, p. 7-8) emphasize the important role that interactive media has in shaping brand perception. In research on social media, elements related to the interaction between the brand and consumer were found to be strongly correlated with affective perception and reputation, suggesting that gaming interactions can similarly and significantly shape brand perception. Engaging with brands through gamified experiences can enhance affective perception by creating strong emotional connections and positive feelings towards the brand, which in turn positively influences how consumers perceive the brand (Sangroya et al., 2021, p. 14).

Warren et al. (2019, p. 37) found that Coolness is challenging to define consistently, as there are over 70 definitions. However, the most commonly used one is the definition of coolness as a positive trait seen in cultural objects that is created by society and change over time, suggesting that these objects have the right level of independence (Warren et al. 2019, p. 37). According to Rodrigues et al. (2024, p. 3), whether a brand is considered cool is subjective, as a brand is only cool if it is perceived that way by the consumer. Therefore, brand coolness can be considered an impression that the consumer holds rather than a quality that a company possesses.

Fashion consumers often choose clothes and accessories that help them convey their identity and social position. It has been shown that the concept of "hedonic coolness," refering to the enjoyment and trendiness of a product, positively influences how consumers perceive the value of these fashion items (Truong et al., 2021, p. 108). In research on luxury

fashion brand integration into video games, Salem et al. (2023, p. 2) describe brand coolness as a form of marketing that recently garnered significant research interest and captures how consumers react to products or brands. The results showed that Brand Coolness is positively correlated with Brand Equity. In research on fashion brand integration into video games, and its impact on brand coolness – Salem et al. (2023, p.13) stated that using interactive video games to display their collections is expected to enhance the perception of fashion brands positively. In accordance with the research mentioned above, one could argue that when an individual has a positive attitude towards the gamification efforts of luxury brands, this positive attitude would positively influence several forms of brand equity. Therefore, the following hypotheses are proposed:

H4: Attitude towards gamification of luxury brands positively associated with brand perception.

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H5: *Attitude towards gamification of luxury brands is positively associated with brand coolness.*

2.7 Collaboration between luxury brands and online games, and Purchase Intention

Kim et al. (2023, p. 2294) found that when luxury fashion brands collaborate with online games, they leverage their high-status brand identity to create a unique consumer value proposition. This proposition enhances the brand's perception among existing and potential customers and influences their purchase decisions, making them more inclined to buy products resulting from these collaborations.

A particularly interesting collaboration between a luxury brand and an online video game is seen in the 3D virtual Gucci Garden on Roblox. In this digital space, different themed areas can be found such as a virtual Gucci store and a museum. In addition to this, Roblox users were able to try on and purchase virtual Gucci garments and accessories (J. Kim & Bae, 2023, p. 3). This collaborative event attracted over 19 million visitors (Guzzetti et al., 2023, p. 206). In this collaboration between Roblox and Gucci, a virtual rendition of Gucci's Dionysus Bag with Bee, specifically designed for the Roblox platform was sold for US$4,115 – which was more expensive than the cost of its real-life counterpart (Jing Daily, 2021). In congruence with previous research and examples, the last hypotheses are stated as:

H6: Attitude towards luxury brand collaborations is positively associated with virtual product purchase intention.

H7: Attitude towards luxury brand collaborations is positively associated with real product purchase intention.

2.8 Sentiment analysis

Sentiment analysis, also known as opinion mining, is the computational identification and categorization of opinions in texts to analyze people's opinions, attitudes, evaluations, emotions, and sentiments concerning things such as brands, events, commercials, products, and services, as well as numerous other aspects that individuals might hold opinions on (Bonta et al., 2019, p. 1; Liu, 2012, p. 7). As a multidisciplinary area of research, sentiment analysis includes techniques from fields such as machine learning, Natural Language Processing, data mining, and computational linguistics – while also including influences from social sciences such as sociology and psychology (Yue et al., 2018, p. 618).

Natural Language Processing (NLP) is a field of research concerned with how computers can understand and work with human language to perform helpful tasks (Chowdhary, 2020, p. 1). This area of research has been around since the 1950s (Yue et al., 2018, p. 618). However, it was not until the mid-2000s that researchers started to seriously focus on analyzing people's opinions and sentiments (Yue et al., 2018, p. 618).

Sentiment analysis methods can be divided into two main approaches: Machine Learning and Lexicon-Based. The first approach, Machine Learning, is a form of sentiment analysis that uses algorithms trained on labeled datasets to determine if the text is positive, negative, or neutral (Birjali et al., 2021, p. 9). While machine learning methods can learn particular patterns in sentiment, they need a large amount of data to work well (Birjali et al., 2021, p. 9).

Lexicon-based approaches use lists of words that are labeled as positive, negative, or neutral. Here, positive words would result in +1, -1 for negative words or 0 for neutral words. The overall sentiment of a text is determined by adding up all these values (Birjali et al., 2021, p. 15). This method works well for analyzing sentences and does not need training data. However, it can cause problems in the labeling of words, as words can have different meanings in different contexts (Liu, 2012, p. 7).

In addition to different approaches, there are also several different levels of sentiment

analysis. Firstly, there is the document level, where the overall sentiment (positive, negative, or neutral) of an entire document is determined (Sun et al., 2017, p. 12). For example, in a product review, the goal is to measure the overall positivity or negativity of the review (Subhashini et al., 2021, p. 6345; Wankhade et al., 2022, p. 5734).

Second is the sentence level, which evaluates individual sentences to determine if each expresses a positive, negative, or neutral opinion (Sun et al., 2017, p. 12). This is highly useful when a document has a wide range and mix of sentiments associated with it, for example in comment sections on social media (Wankhade et al., 2022, p. 5734). Lastly, there is the aspect level, which analyzes specific parts or features of a body of text to determine the sentiment toward each aspect (Sun et al., 2017, p. 12).

The increasing popularity of social media platforms has increased the progress of sentiment analysis tools since these platforms produce large amounts of data on how and what people think and feel, making them a valuable tool for understanding public opinion and resulting in researchers creating more accurate tools to measure this data (Cheng et al., 2017, p. 2296; Wankhade et al., 2022, p. 5732; Yue et al., 2018, p. 618). Nowadays, the internet is an important part of our everyday existence, and a lot of people utilize social media to voice their opinions and discuss different subjects (Khemani & Adgaonkar, 2021, p. 1). Regarding this, Yue et al. (2018, p. 618-619) state the ever-increasing flow of information available on social media platforms makes sentiment analysis an increasingly important form of conducting research. Rambocas and Pacheco (2018, p. 147) add to this argument by stating that a significant benefit of sentiment analysis is its ability to gather and examine online comments instantly. Especially for researchers, this is of great significance as posts and comments made by users on social media provide valuable insights, and conducting a sentiment analysis allows researchers to extract this data, consisting of emotions and opinions, and turn it into measurable data (Rambocas & Pacheco, 2018, p. 147).

Conducting sentiment analysis can also be fruitful from an economic and marketing viewpoint. Firstly, in research on social media discourse by Jansen et al. (2009, p. 2184), it was found one of the major points people voice their opinion about online is products, brands, and companies, which found that approximately 19% of tweets mention an organization or product brand, and 20% of these tweets contain some expression of brand sentiment. Additionally, Subhashini et al. (2021, p. 6344) found that sentiment analysis is valuable for marketers, as it can accurately measure the success of a new product launch through social media. Opinion mining helps determine product popularity and identify new market segments, which can in turn lead to increased profits. In addition to this, a full

understanding of customer sentiment builds brand loyalty and helps business growth through effective expansion strategies into new and undiscovered markets (Subhashini et al., 2021, p. 6344).

3. Method

This method section discusses the justification for the choice of method, the research method employed for data collection, the process of data collection, and descriptive details of the final sample. Following this is the operationalization section, in which each variable, and the instruments through which these variables are measured, are thoroughly explained. After, the tools used for data collection and analysis are presented, as well as the types of analyses conducted. Lastly, the method section finalizes with a discussion on the reliability and validity of the research.

3.1 Justification of Method

To test the hypotheses discussed in the theoretical framework and subsequently address the research question, "*To what extent gamification of luxury affect brand perception and purchase intention for luxury brands?".* To answer this research question, a mixed methods approach was utilized, consisting of a cross-sectional quantitative survey was used to measure the expressed opinion through explicit queries, and exploratory sentiment analysis to measure online voluntary expression. This method was especially appropriate for this study for four main reasons.

Firstly, in quantitative research, the researcher looks for problems to study based on patterns seen in the field or the need to understand why something happens (Creswell, 2012, p. 13). Furthermore, Creswell, 2012 (p. 13) states that when describing a pattern, the researcher aims to find out the general response from people and how these responses differ among different groups. Luxury fashion brands have strategically embraced the gaming industry as a platform to foster deeper connections with tech-savvy audiences (Wanick and Bazaki, 2023), using gamification to stand at the forefront of interactive marketing trends (Salem et al., 2023, p. 2). This research investigates the effects of gamification in the luxury industry, a new interactive trend in the marketing field, and how it can influence brand perception, and brand attitudes and eventually lead to purchase intention among different age groups, justifying a quantitative research approach.

Secondly, quantitative research is used to demonstrate the impact of one variable on another. This method is used to explain the relationship between variables, and to find out if one or more of these things can influence another (Creswell, 2012, p. 13). This additionally supports the use of quantitative methods, as the study seeks to examine the relationships among the previously mentioned variables.

Thirdly, cross-sectional quantitative surveys are especially valuable for outlining the characteristics of a large population, allowing researchers to transform a large sample of individual opinions into general trends across the population through statistical analysis (Babbie, 2016, p. 270). This research aims to understand how the target audience perceives this new trend of gamification strategies by luxury brands, and how it could influence future real-life purchase behavior for digitally proficient, younger generations such as Gen Z and Millennials, but also for tech-savvy individuals from older generations. Therefore, employing cross-sectional survey designs is justified, as they effectively and efficiently gather current data on opinions, attitudes, beliefs, and other forms of consumer behavior by analyzing a representative sample of the target population. (Creswell, 2012, p. 379).

Lastly, conducting a sentiment analysis was deemed appropriate as the sentiment discovered that sentiment analysis is beneficial for marketers because it can effectively gauge the success of products through conduct analysis on social media (Subhashini et al., 2021, p. 6344).

3.2 Sample

In this research, the units of analysis are individuals, primarily focusing on Generation Z and Millennials, since this is these are the target audience luxury brands are trying to reach with their gamification strategy. Individuals from these generations are characterized by their significant online presence (Francis & Hoefel, 2018, p. 8; Munsch, 2021, p. 13), and by analyzing their attitudes, perceptions, and purchase intentions regarding gamified luxury products, the study aims to understand how these digital-native consumers interact with and are influenced by the integration of luxury brands into gaming environments. Older generations were also allowed in the sample for comparative insights across different age groups to evaluate generational differences in brand perception and purchase behaviors within the context of luxury brand gamification.

According to Guadagnoli and Velicer (1988, p. 274), when research design involves many variables and the conditions can be well-defined beforehand, a sample size of 150 is adequate to ensure accurate and meaningful results for a study that includes factor analyses. Furthermore, Maxwell (2000, p. 443) states that a minimum sample size of 150 is advisable according to the article because it ensures a power level of 0.80, reducing the likelihood of Type II errors and ensuring more reliable and generalizable results, especially when dealing with multiple predictors. Therefore, the aim was to reach a minimum sample size of 150

participants that filled out the survey.

Regarding sentiment analysis, the units of analysis were sentences, as this level is especially useful when a document contains a diverse range of sentiments (Wankhade et al., 2022, p. 5734). Since the sentiment analysis in this research is conducted to measure voluntary reactions on Reddit, which come in the form of comments, and are able to consist of a large range of sentiments, the sentence level was deemed appropriate. However, for further explorative purposes, the sentiment of the Reddit threads were also analyzed at document level, in order to

3.2.1 Sampling method

3.2.1.1 Survey

The sampling strategy used in the research was non-probability sampling, combining convenience and snowball sampling. Although non-probability sampling is considered to be less representative than probability sampling, non-probability sampling was chosen for its cost-effectiveness and practicality in reaching the required sample size (Sarstedt et al., 2017, p. 654). Furthermore, (Babbie, 2016, p. 210) states that non-probability sampling carries the risk of introducing selection bias since the sample might not reflect the consensus of the broader population. As a result, this can restrict the extent to which the findings can be generalized Creswell (2012, p. 144) describes convenience sampling as a non-probability technique in which participants are chosen based on their willingness and availability to take part in the study.

In the context of this study, convenience sampling was used to recruit participants through various media channels. Firstly, the survey was distributed through public posts and comments on Reddit, an online discussion forum. Here, posts were created on specific gaming subreddits, which are specialized community forums within the larger Reddit platform, that were themed around games that had previously collaborated with luxury brands. Examples of this include Pokémon GO-related subreddits r/PokemonGo and r/TheSilphRoad, due to the game's collaborations with luxury brands Gucci and Fendi; r/LeagueofLegends and r/FinalFantasy, because of their collaborations with Louis Vuitton; and r/FortniteBR, for the collaboration between Fortnite and luxury brands Balenciaga and Moncler, among other subreddits themed around games that have collaborated with luxury brands in the past. In addition to posts and comments on these subreddits, the survey was also distributed through the Discord channels – a platform for text, voice, and video communication within communities – linked to these respective subreddits. To reach the

desired minimum sample size of 150, further recruiting was done through spreading the survey through media channels such as Instagram and WhatsApp. Lastly, to ensure the minimal sample size was met, 25 participants were recruited through Prolific, an online platform for recruiting participants for surveys and research studies, as participants on Prolific were more likely to pass attention checks, provide meaningful answers, follow instructions, and spend adequate time on survey items compared to other platforms (Douglas et al., 2023, p. 10).

The second recruitment technique used in this study was snowball sampling. Snowball sampling is a nonprobability sampling technique where each participant is encouraged to recommend other individuals to participate in the research (Babbie, 2016, p. 208). This was done through the aforementioned subfora on Reddit and the researcher's network, where participants were contacted through personal messaging, requesting them to share the survey with other eligible individuals who could complete it. This second sampling technique was used due to its advantage of allowing the recruitment of a large number of participants for the study (Creswell, 2012, p. 144).

3.2.1.2 Textual data

The exploratory sentiment analysis is used to measure whether the voluntarily online expression differs from explicit queries. Therefore, the previously mentioned subreddits used for survey distribution were also employed for conducting the sentiment analysis. In each of the respective subreddits, the luxury brand with which the brand had previously collaborated was typed into the search bar to locate threads in which these collaborations were discussed. Discussion threads were selected on the criteria of having more than 20 comments. However, threads regarding collaborations between video games and luxury brands often gained a lot of attention in one thread, while other threads received no comment. The data from Reddit was scraped using the "Python Reddit API Wrapper" (PRAW), a Python package that provides easy access to Reddit's API. Using this package, a script was written in that that retrieves all comments from a list of the specified Reddit threads and saves them, along with their thread IDs, into a CSV file.

3.2.2 Description of sample

3.2.2.1 Survey

The final sample ($N = 160$) contained a noticeably larger portion of 106 male participants (68.4%) and a smaller portion of 43 female participants (27.7%). Additionally,

1.9% were either non-binary/third gender or chose not to disclose their gender, and five participants (3.1%) did not answer the question. The participants' ages ranged from 18 to 53 years old, with an average age of 29 years old (N = 154, M = 28.58, SD = 7.11). When categorized into age groups, the largest group is Gen Z with 83 responses (51.9%), followed by Millennials with 64 (40.0%), and a smaller group of Gen-X and Baby Boomers with 7 (4.4%). The majority of respondents (65.1%) had completed higher education, with 43.1% holding a bachelor's degree, 19.4% having a master's degree, and 1 respondent possessing a PhD (.6%). The participants in this sample (N = 155) included responses from people from 40 different countries, with the largest proportions coming from the United States at 30.6%, followed by the United Kingdom at 8.1%, and Canada at 7.5%.

Regarding the gaming frequency of the participants in this sample (N = 160), 31.3% reported playing more than 15 hours per week, 19.4% played 3 to 6 hours, 18.8% played 7 to 10 hours, 16.9% played 11–14 hours, 8.8% played less than 1 hour, and 5.0% played 1 to 2 hours. Lastly, 81.9% reported encountering a luxury brand in a video game, while 18.1% did not.

3.2.2.2 Textual data

A total sample size of N = 3295 comments was retrieved from 17 selected threads. In the final selection of the sample, 17 different threads were selected for data scraping, ranging from the largest thread containing 1,112 comments to the smallest thread with 32 comments.

For the sentiment analysis, the VADER (Valence Aware Dictionary and sEntiment Reasoner) sentiment analyzer from the NLTK (Natural Language Toolkit) library was used, through a Python package. This tool employs lexicon and rule-based techniques and was specifically selected because it is designed for social media contexts. VADER has a large library of internet slang and can interpret the meanings of emojis (Hutto & Gilbert, 2014, p. 222). Another script was executed, which analyzed the sentiment of each comment using the VADER sentiment analyzer from the NLTK library, appends the sentiment scores to each comment, and writes the updated content to a new CSV file. The overall sentiment of a comment is expressed through a compound score – a sum of positive, neutral, and negative words – normalized on a scale 7 point scale, ranging from -1 (Very Negative) to +1 (Very Positive).

3.3 Operationalization

3.3.1 Survey design

To gather the data on participants' perspectives regarding luxury brand integration in video games, a carefully structured questionnaire was developed. The questionnaire was only made available in English, as the survey was predominantly distributed through online communities, such as Reddit, where English is considered the lingua franca. Before starting the survey, participants first encounter an opening statement containing general information about the research, an explanation of what the survey intends to research, and an informed consent statement. The informed consent statement emphasized that participating in the survey was completely anonymous, responses would be kept confidential, and respondents were free to stop the survey whenever they wished. Additionally, it contained the estimated time required to complete the survey and the researchers' contact information for any further questions or concerns about the study. Lastly, participants were asked to check the "I agree" box to confirm their consent to take part in this research. By doing so, they also allowed their answers to be used as data and confirmed that they were at least 18 years old. If they did not agree with the terms provided, they were immediately taken to the end of the survey.

Following the consent statement, another short, but more in-depth, explanation regarding the research topic was provided, in which ways luxury brands adapt their marketing strategies by collaborating with video games and through the incorporation of gaming elements in their marketing strategies. In addition, two images were shown as examples to illustrate this: the collaboration between Pokémon Go and Fendi, and Balenciaga and Fortnite, where in both cases a virtual collection was released alongside a real-life collection.

After the consent statements and study information, the questionnaire began with questions regarding the participants' gaming frequencies, inquiring how many hours participants, on average, spend playing video games per week – with six possible answers ranging from "less than 1 hour" to "15+ hours". Additionally, participants were asked whether they had ever encountered a luxury brand in a video game. The following section of the survey focused on questions related to the research concepts, specifically, attitudes toward luxury brand integration into video games, attitudes towards collaboration products, self-congruity, brand perception, and brand coolness. After the questions regarding the previously named concepts, a directed query attention check took place, where respondents were asked to select "Strongly Agree" to ensure that sufficient attention was paid to the questions. The attention check was incorporated as previous research has shown that attention

checks can improve the quality of the data collected, as they help ensure that participants are paying attention, which is crucial for the accuracy of the study's results (Abbey & Meloy, 2017, p. 64). Following the attention check, one more set of questions was focused on a research concept, namely purchase intention, after which participants arrived at the last section of the survey – the demographic questions.

The decision to put the demographic section at the end of the survey, as previous research has shown that placing demographic questions at the end of the questionnaire prevents early dropouts, and maintains the flow of the survey, making sensitive questions seem less intrusive (Dillman et al., 2014, p. 232; Teclaw et al., 2011, p. 281). The demographic variables used in this research are the following: Age was measured as a continuous variable by asking participants to state their age in an open text field. The categorical variable gender was measured with a multiple-choice question, that included the additional answer categories 'Non-binary', "Prefer to self-describe" and 'Prefer not to say'. Education was recorded as the highest level of education participants obtained by asking a question with eight answer categories. Concluding the demographic section, a question was included regarding the participant's nationality.

3.3.2 Data screening, cleaning, coding, and preparation

3.3.2.1 Survey

A total of 289 responses were collected, and after data cleaning, the dataset comprised $N = 160$ valid responses, entailing that 139 responses were excluded from the study. Qualtrics, an online survey tool, was used to build and distribute the survey through a personalized link to fill out the survey. The data gathered via Qualtrics was analyzed using SPSS, a statistical software for data analysis.

In the process of data cleaning, 12 respondents were excluded from the study because they clicked 'disagree' on the consent form, indicating their refusal to participate in the research. An additional 11 participants were excluded from the study for failing to pass the attention check, and the remaining 106 of the excluded responses were deleted from the sample due to being partial, and therefore, not useable for this research. Only participants who completed the survey through to the demographics section were included in the study.

With a clean dataset, SPSS was employed to perform frequency and description analyses on the demographic questions. Furthermore, multiple items had to be reverse coded in preparation for the analysis. For all scales used in the analysis – *attitude towards luxury*

brand integration in video games, *Collaboration product attitude*, *self-congruity*, *purchase intention*, *brand perception,* and *brand coolness.* – a factor analysis was executed as each scale contained a minimum of three items and the sample size was over 150. Additionally, a reliability test was conducted for each factor. New variables were created by calculating the mean of the items for the previously mentioned variables.

3.3.2.2 Textual data

To ensure the highest accuracy in our sentiment analysis using VADER, specific data preprocessing methods, such as such as lowercasing. lemmatization, stemming and removing stop words, were deliberately omitted as these can have a severe impact on the output, and can potentially decrease the accuracy of VADER's analysis (Emblem, 2022, p. 5). For example, lowercasing was specifically avoided, as one of five heuristics through which VADER determines the sentiment is by analyzing the capitalization in the text. This entails that the capitalization of a sentiment-relevant word in ALL-CAPS among non-capitalized words increases the intensity of the sentiment for VADER sentiment analyses (Hutto & Gilbert, 2014, p. 221). Therefore, performing preprocessing was avoided to maintain the acuracy and effectiveness of VADER's sentiment detection capabilities.

3.4 Measurements, Factor Analysis, and Reliability Testing

This section presents the operationalization of all concepts used in this research. For each concept, the measurement scale will be discussed – followed by the factor analysis and reliability analysis results. Additionally, in cases where the factor analysis results in multi-factor loading, the reliability of the subscales will also be tested. A list of all the items utilized in the research, reliability analyses of the full scales, and general item and scale descriptives are provided in Appendix A.

3.4.1 Attitude towards luxury brand gamification

Attitude Luxury brand integration into video games is a continuous variable that measures participants' attitudes regarding the presence of luxury brand placements in video games. The scale used in this study was created by merging the "attitudes towards paid brand placement in fiction and in film/TV" and the "attitudes towards the use of brands in fiction" from Avramova et al. (2022, p. 847), and adapting the final scale to the context of luxury brand integration in video games. The scale used in this study consisted of three components: Acceptance (α=.86), Evaluation (α=.78), and Perceived Influence (α=.83), which

demonstrated high reliability in the research by Avramova et al. (2022, pp. 846-848). Together, these components, measured respondents' attitudes and perceptions regarding the presence and impact of luxury brand placements in video games. In total, the scale consists of 14 items which are measured on a 5-point Likert scale, ranging from “Strongly disagree” to “Strongly agree”.

This scale is altered by changing the context from fiction and “in film/TV”, to “in video games”. In several instances, the word "brand" is replaced with "luxury brand" to emphasize that the question specifically pertains to luxury brands. Additionally, three items on the scale had to be reverse-coded, due to being negatively worded items (Appendix A). Examples of items used in the scale are “It is ok for game producers to contact companies to negotiate luxury brand placement deals” and “The presence of brand names is distracting”.

A factor analysis was carried out on the 14 items, employing Principal Component extraction and Direct Oblimin rotation based on Eigenvalues (> 1.00), KMO = .88, $\chi 2$ (N = 160, 91) = 1256,74, $p < .001$. The resultant model explained 67.07% of the variance in attitude towards luxury brand integration into video games. Additionally, the factor analysis revealed a three-factor solution, with the same three components within the scale as found by Avramova et al. (2022, p. 847), namely, Acceptance, Evaluation, and Perceived Influence. However, all items found placed on the Evaluation component, showed higher factor loadings when placed on the first component. As a result, the evaluation factor was added to the acceptance factor, and only two factors were retained: Acceptance ($\alpha = .81$) and Perceived Influence ($\alpha = .90$). Following the factor and reliability analysis, items associated with these two factors were aggregated into new per-factor variables. This process resulted in the creation of two new variables in the dataset. Additionally, a reliability analysis was conducted on the full scale, in which all items of the scale were included, revealing Cronbach’s $\alpha = .85$. As the full scale and subscales have a Cronbach's α that is greater than 0.80, it can be determined that the scale demonstrates strong internal consistency, thereby confirming its reliability. Therefore, full scale was used in the final analysis, as both acceptance and perceived influence are important factors in measuring attitudes towards luxury brand integration into video games.

Table 3.4.1 *Factor and reliability analyses for scales for Attitude towards luxury brand gamification* (*N = 160*)

Item	Acceptance	Perceived influence
I don’t mind if developers use brand names	.82	-
It is ok for game producers to contact companies to negotiate luxury brand placement deals	.79	-
I don’t mind paid luxury brand placement as long as the artistic freedom of the developer is guaranteed	.78	-
Luxury brand placement should be banned.	.77	-
Luxury brand placement is an acceptable form of extra income for game developers	.77	-
Luxury brand placement in games is unethical.	.75	-
The presence of brand names is distracting.	.70	-

The presence of branded products increases realism	.66	-
I prefer to see real than fictitious brands.	.62	-
I find it awkward when developers use a specific brand name (e.g., BMW) instead of the product name (car)	.60	-
I have searched for information on brands I have seen in a video game	-	.67
I have bought brands because I have seen them in a video game	-	.64
I have learned about new brands through video games	-	.64
I pay attention to the brands that in-game characters use	-	.46
R2	.44	.15
Cronbach's α	.81	.90
Eigenvalue	6.18	2.06

3.4.2 Collaboration Product attribute

The continuous variable Collaboration product attributes is used to measure participants' attitudes towards collaborative products, specifically those between online games and luxury brands. The scale used to measure this variable was adopted from Kim et al. (2023, p. 2289), and measured three specific characteristics pertaining to online game collaboration, for which each a high Cronbach's alpha was measured by the developers of the scale: aesthetics (α=.88), originality (α=.84), and symbolism (α=.89). In total, the scale included 11 items, with the aesthetics containing four items, three for the originality component, and four again for symbolism. These items are measured on a 5-point Likert scale (1= strongly disagree, 5= strongly agree).

On the 11 items of the scale, a factor analysis was carried out utilizing Principal Component extraction and Direct Oblimin rotation based on Eigenvalues (> 1.00), KMO = .90, $\chi 2$ (N = 160, 55) = 1401,84, p < .001. The resultant model explained 69.88% of the variance in attitude toward collaboration product attributes.

The factor analysis revealed that the items loaded on two distinct factors, instead of three factors as was initially expected. The analysis identified the following two factors: Aesthetics and Self-Expression and Identity. This result indicates that the items previously associated with the originality and symbolism factors were more closely aligned with the newly defined factors, leading to a redistribution of items. Furthermore, the factor loadings of individual items on the two factors are presented in Table 3.4.2. The two factors can be described as the following:

1) Aesthetics (α = .93) factor included 7 items that measure the aesthetic qualities of collaboration products. More specifically, these items assess perceptions of these products as fresh, new, creative, different, stylish, attractive, and cool.

2) Self-Expression and Identity (α = .77) factor out of 4 items, which measure how collaboration products relate to personal expression and identity. Furthermore, they assess perceptions of these products in helping individuals express themselves, maintain their identity, influence how others judge them and evoke emotions.

After conducting factor and reliability analysis, items linked to these two factors were combined into new per-factor variables. This procedure led to the creation of two new variables in the dataset. The reliability analysis of the full scale, including all components, reveals high reliability (α = .93). Since values higher than 0.7 indicate good reliability and values higher than 0.8 indicate great reliability, this scale is considered highly reliable. Only

one of the subscales is slightly under 0.8, while the rest are significantly higher. Thus, indicating good internal consistency.

Table 3.4.2. *Factor and reliability analyses for scales for Collaboration product attributes* (*N = 160*)

Item	Aesthetics	Self-Expression and Identity
Collaboration products are fresh	.89	-
Collaboration products are new	.91	-
Collaboration products are creative	.82	-
Collaboration products are different	.84	-
Collaboration products help me express myself	-	.62
Collaboration products help keep my identity	-	.68
Collaboration products help others judge me	-	.70
Collaboration products look stylish	.71	-
Collaboration products are attractive	.78	-
Collaboration products seem emotional	-	.47
Collaboration products are cool	.79	-

R2	.59	.11
Cronbach's α	.93	.77
Eigenvalue	6.51	1.18

3.4.3 Self-congruity

Self-congruity is a continuous variable used to measure to what extent people feel that their game avatars or online profiles match up with who they are or who they want to be. To measure this variable, the Self-Congruity (SC) scale from Saxena et al. (2022, p. 1024) was adopted. Through items on the scale, it assesses the extent to which the individuals' in-game avatar represents how the person sees themselves, how they want to be perceived by others, and how similar their personality is to the avatar. The SC scale consists of 4 items, measured on a 5-point Likert scale (1= strongly disagree, 5= strongly agree), and was found to yield a *Cronbach's* α of .90.

A factor analysis was performed on the four items using a Principal Component extraction and Direct Oblimin rotation based on Eigenvalues (> 1.00), KMO = .84, $\chi 2$ (N = 160, 6) = 463.23, $p < .001$. The resulting model accounted for 80.25% of the variance in self-congruity and contained a one-factor solution. The factor loadings of individual items on the single identified factor are shown in Table 3.4.3. Following this, a reliability analysis was conducted on all items of the SC scale (α= .93), demonstrating a high level of reliability.

Table 3.4.3. *Factor and reliability analyses for scales for Self-congruity* (*N = 160*)

Item	Self-congruence
The avatar/virtual identity/profile in a game is consistent with how I would like to see myself.	.92

I would like to be perceived as similar to the avatar/virtual identity/profile in a game.	.91
I am quite similar to the personality of the avatar/virtual identity/profile in a game.	.89
The avatar/virtual identity/profile in a game is consistent with how I see myself.	.87
R2	.80
Cronbach's α	.93
Eigenvalue	3.21

3.4.4 Purchase intention

Purchase intention was measured using a 6-item scale adapted from Saxena et al. (2023, p. 9), and is measured on a 7-point Likert scale. The purchase intention scale consists of two different scales – a virtual purchase intention scale (α= .91) and a real-life purchase intention scale (α= .86). Additionally, this purchase intention scale measures the influence of virtual products on real-world purchase intentions and behaviors. More specifically, it measures how experiences with virtual products in a video game can influence decisions about purchasing similar real-world products and increase the intention to buy real items.

A factor analysis was carried out on the 6 items, employing Principal Component extraction and Direct Oblimin rotation based on Eigenvalues (> 1.00), KMO = .78, $\chi 2$ (N = 157, 15) = 770.88, p < .001. The resultant model explained that 84.80% of the variance in Purchase intention was loaded onto two factors. All factor loadings are presented in Table 3.4.4. The factors can be described as the following:

1) Real-life Purchase Intention factor contains 3 items and measures the impact of virtual product purchases on real-world buying behavior through items on the scale such as

"The experience in a video game would increase my intention to buy the real item". Reliability analysis on the subscale demonstrated that *Cronbach's* α = .93, which indicates a high level of reliability.

2) Virtual Purchase Intention also 3 items and measures the likelihood of the user considering the purchase of virtual items to decorate their avatar. Also, this scale demonstrated high internal consistency, as reliability analysis revealed *Cronbach's* α = .87.

After performing factor and reliability analyses, the items associated with these two factors were merged into new variables for each factor. This process resulted in the creation of two new variables within the dataset. The reliability analysis of the entire scale, encompassing all components, indicates high reliability. (α = .88).

Table 3.4.4 *Factor and reliability analyses for scales for Purchase intention* (*N = 157*)

Item	Real-life Purchase Intention	Virtual Purchase Intention
If the virtual products I have purchased for my avatar are available in the real world:		
The experience in the video game would help me make a purchase decision about real products	.96	-
The experience in a video game would increase my intention to buy the real items	.95	-
If the virtual products I have purchased for my avatar are available in the real world... - I would consider buying real products for myself	.89	-
While playing a video game:		

I am likely to consider purchasing virtual items to decorate my avatar	-	.99
I am likely to consider purchasing virtual items (e.g., clothes accessories) for my avatar	-	.58
I would like to recommend the virtual items I bought for my avatar to my friends	-	.58
R2	.62	.23
Cronbach's α	.93	.87
Eigenvalue	3.73	1.36

3.4.5 Brand Perception

The concept of Brand Perception is a continuous variable measured through the adoption of the brand image scale by Scussel (2019). The scale consists of 5 items and is measured on a 7-point Likert scale, ranging from "Strongly disagree" to "Strongly agree". Items on the scale measure participants' perception of luxury brands that integrate themselves in video games, through questions like: "This brand's ambiance is sophisticated" and "This brand is recognized as a luxury brand."

A factor analysis was carried out on the five items, employing Principal Component extraction and Direct Oblimin rotation based on Eigenvalues (> 1.00), KMO = .80, $\chi 2$ (N = 160, 10) = 446.60, $p < .001$, and revealed a one-factor model explaining 68.50% of the variance. Additionally, a reliability analysis was conducted on the full scale, in which all items of the scale were included, revealing Cronbach's α =.88. Since the full scale and subscales have a Cronbach's α over 0.80, we can say the scale has strong internal consistency, proving it's reliable.

Table 3.4.5 *Factor and reliability analyses for scales for Brand perception* (*N = 160*)

Item	Brand Perception
When luxury brands collaborate with video games in general how do you perceive the luxury brand:	
This brand's ambience is sophisticated.	.79
This brand is recognized as a luxury brand.	.85
This brand's stores are localized in fancy locations.	.86
These brand's products are prestigious to people who use them.	.86
This brand has credibility in the market.	.78
R2	.68
Cronbach's α	.88
Eigenvalue	3.43

3.4.6 Brand coolness

Brand coolness is measured through the adaption of the brand coolness scale by Loureiro et al. (2020, p. 46). Since the original scale includes over 50 items, it was crucial to select only a few subscales to minimize the chance of response burden for the participant. Therefore, it was decided that Original, Authentic, Rebellious, and High Status were the four factors that were going to be used to measure brand coolness, resulting in a scale of 15 items measured on a 7-point Likert scale. The question structure was slightly changed to fit it more

to the context of the study, which was done primarily by adding "When luxury brands collaborate with video games in general, how do you perceive the luxury brand? before the statements such as "Is innovative" or "Is not afraid to break rules". A factor analysis was carried out on the 15 items, employing Principal Component extraction and Direct Oblimin rotation based on Eigenvalues (> 1.00), KMO = .88, $\chi 2$ (N = 160, 91) = 1256,74, p < .001. The resultant model explained 68.19% of the variance in brand coolness and revealed two factors, instead of the four expected factors. All factor loadings are presented in Table 3.4.6. The factors can be described as the following:

1) Authenticity & Sophistication (α = .95) measures how luxury brands are perceived when they collaborate with video games through the lens of authenticity and sophistication. An example of an item in which this becomes clear is "*When luxury brands collaborate with video games in general how do you perceive the luxury brand.* Doesn't try to be something it's not ".

2) Nonconformity (α = .81) of 4 items and measures brand coolness through the lens of non-conformity – by being rebellious or not being afraid to break the rules.

Following the factor and reliability analysis, items associated with these two factors were aggregated into new per-factor variables. This process resulted in the creation of two new variables in the dataset. Additionally, a reliability analysis encompassing the entire scale, which included all items, indicated a Cronbach's α of 0.93. Given that both the full scale and its subscales exhibit a Cronbach's α exceeding 0.80, it can be concluded that the scale possesses strong internal consistency, thus affirming its reliability.

Table 3.4.6 *Factor and reliability analyses for scales for Brand Coolness* (*N = 160*)

Item	Authenticity & Sophistication	Nonconformity
When luxury brands collaborate with video games in general how do you perceive the luxury brand?		
Is innovative	0.68	-

Is original	0.77	-
Does its own thing	0.85	-
Is authentic	0.90	-
Is true to its roots	0.91	-
Doesn't seem artificial	0.87	-
Doesn't try to be something it's not	0.93	-
Is rebellious	-	0.90
Is true to its roots	0.69	-
Is defiant	-	0.91
Is not afraid to break rules	-	0.67
Is nonconformist	-	0.61
Is chic	0.70	-
Is glamorous	0.66	-
Is sophisticated	0.74	-
Is luxurious	0.65	-
R2	.57	.11
Cronbach's α	.95	.81
Eigenvalue	9.18	1.73

3.5 Validity and reliability

3.5.1 Validity

When conducting a test, maintaining validity regarding the interpretation of the results and uses is of primary concern (Rupp & Böhme, 2008, p. 740). Babbie (2016, p. 159) describes validity as the degree to which an empirical measure accurately represents the true meaning of the concept. In this research is validity ensured through various considerations.

Firstly, the measures used in this research have all been adopted from previous studies that were published in peer-reviewed journals. Furthermore, the scales used in this research have already been used and validated, or are adapted from extensively validated scales, which provides a high level of validity of the measures that are employed (Geuens & De Pelsmacker, 2017, p. 10). Furthermore, construct validity is ensured through reliability analyses which showed that from the full scales, all have the minimum value of Cronbach's α =.85, which indicates a high level of internal consistency, which in turn increases the validity (Babbie, 2016, p. 162). Additionally, factor analyses were employed to confirm that the test items collectively and accurately represent the constructs they are intended to measure. Babbie (2016, p. 162) defines content validity as the extent to which a measure encompasses the full spectrum of meanings associated with a concept. In this research, this was ensured by describing the process of operationalization for each concept, explaining the measurement scale, and using multi-component scales that cover multiple angles of a construct.

Lastly, external validity is ensured through the extensive description of the sample and sampling method. Due to the transparency of this process, other researchers can critically determine the representativity of the sample, compared to the target population.

3.5.2 Reliability

Reliability is concerned with whether the conducted research is reliable because it would provide replicable results if the technique were repeatedly applied to the subject (Babbie, 2016, p. 157; Neuman, 2007, p. 212). In this research, reliability was further ensured by reporting in great detail the preparation of the survey, the sampling method, and every process involved. Furthermore, the study extensively and accurately described all the variables used, providing a comprehensive understanding of their operationalization and measurement. This further enhances the reliability by ensuring that the research can be replicated consistently and accurately.

In addition to this, all scales used in this research are adopted or adapted from

previous studies, with scales that are shown to be reliable. However, as reliability is crucial for legitimizing the quality of the results, reliability was ensured by conducting reliability analyses and factor analyses for all continuous variables. The results from the reliability analyses on the scales all indicated a high level of reliability. Furthermore, the factor analysis revealed valuable insights for data analysis regarding underlying dimensions.

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4. Results

4.1 Hypothesis testing

In this study, a series of simple linear regressions were conducted to examine the hypotheses regarding the impact of various factors on purchase intentions and brand perceptions. Firstly, to test hypothesis 1, a simple linear regression was conducted with virtual purchase intention as the dependent variable and self-congruence with in-game characters as the independent variable. The analysis revealed that the model was significant, $F(1, 155) = 19.96$, $p < .001$, $R^2 = .11$. The coefficient for self-congruence with in-game characters was positive and significant ($\beta = .34$, $p < .001$), indicating that higher self-congruence with in-game characters is associated with greater virtual purchase intention. Therefore, Hypothesis 1, which states that self-congruence with in-game characters is positively associated with virtual purchase intention, is accepted.

Additionally, a simple linear regression was performed with real-product purchase intention as the dependent variable and attitude towards luxury brand gamification as the independent variable. The results demonstrated that the model was significant, $F(1, 155) = 55.98$, $p < .001$, $R^2 = .27$. The coefficient for attitude towards luxury brand gamification was positive and significant ($\beta = .52$, $p < .001$), supporting the hypothesis 2, that a positive attitude towards luxury brand gamification enhances real-product purchase intention.

Hypothesis 3 proposed that attitude towards gamification of luxury brands is positively associated with virtual product purchase intention. This hypothesis was tested using a simple linear regression with virtual product purchase intention as the dependent variable and attitude towards luxury brand gamification as the independent variable. The analysis indicated that the model was significant, $F(1, 155) = 23.77$, $p < .001$, $R^2 = .13$. The coefficient for attitude towards luxury brand gamification was positive and significant ($\beta = .37$, $p < .001$), thus supporting Hypothesis 3.

Moreover, Hypothesis 4 stated that attitude towards gamification of luxury brands positively affects brand perception. A simple linear regression analysis was conducted with brand perception as the dependent variable and attitude towards luxury brand gamification as the independent variable. The model was found to be significant, $F(1, 158) = 108.91$, $p < .001$, $R^2 = .41$. The coefficient for attitude towards luxury brand gamification was positive and significant ($\beta = .64$, $p < .001$), providing support for Hypothesis 4.

Furthermore, Hypothesis 5 suggested that attitude towards luxury brand gamification positively affects brand coolness. To test this hypothesis, a simple linear regression was

performed with brand coolness as the dependent variable and attitude towards luxury brand gamification as the independent variable. The results showed that the model was significant, $F(1, 158) = 149.20$, $p < .001$, $R^2 = .49$. The coefficient for attitude towards luxury brand gamification was positive and significant ($\beta = .68$, $p < .001$), thereby accepting Hypothesis 5.

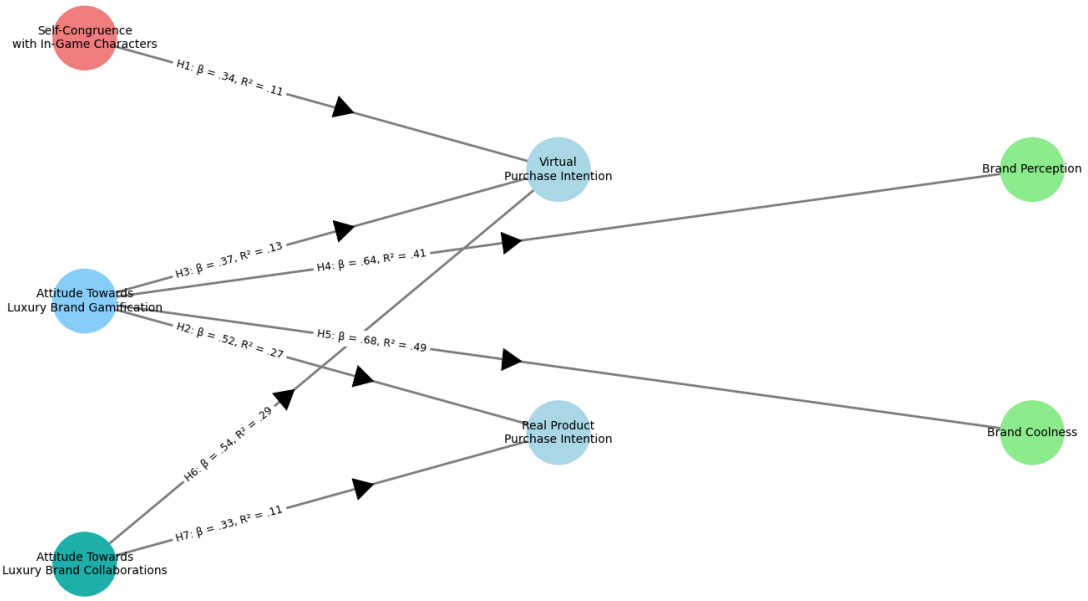
In addition, Hypothesis 6 stated that attitude towards luxury brand collaborations is positively associated with virtual product purchase intention. This hypothesis was examined using a simple linear regression with virtual product purchase intention as the dependent variable and attitude towards luxury brand collaborations as the independent variable. The analysis revealed that the model was significant, $F(1, 155) = 62.77$, $p < .001$, $R^2 = .29$. The coefficient for attitude towards luxury brand collaborations was positive and significant ($\beta = .54$, $p < .001$), thus supporting Hypothesis 6.

Finally, Hypothesis 7 predicted that attitude towards luxury brand collaborations is positively associated with real product purchase intention. A simple linear regression was conducted with real product purchase intention as the dependent variable and attitude towards luxury brand collaborations as the independent variable. The model was found to be significant, $F(1, 155) = 19.35$, $p < .001$, $R^2 = .11$. The coefficient for attitude towards luxury brand collaborations was positive and significant ($\beta = .33$, $p < .001$), providing acceptance for Hypothesis 7.

In Figure 4.1, a conceptual model is portrayed that summarizes this study's hypothesis testing results and illustrates how attitudes toward luxury brand gamification, collaborations, and self-congruence with in-game characters influence purchase intentions and brand perceptions, with statistical values such as beta coefficients (β) and R^2 values indicating the strength and significance of these relationships.

Additionally, a table that includes a detailed summary of the hypotheses tested in the study – listing the independent and dependent variables, F-statistics, p-values, β coefficients and R^2 values – can be found in Appendix C.

Figure 4.1 *Conceptual Framework with Effect Sizes*

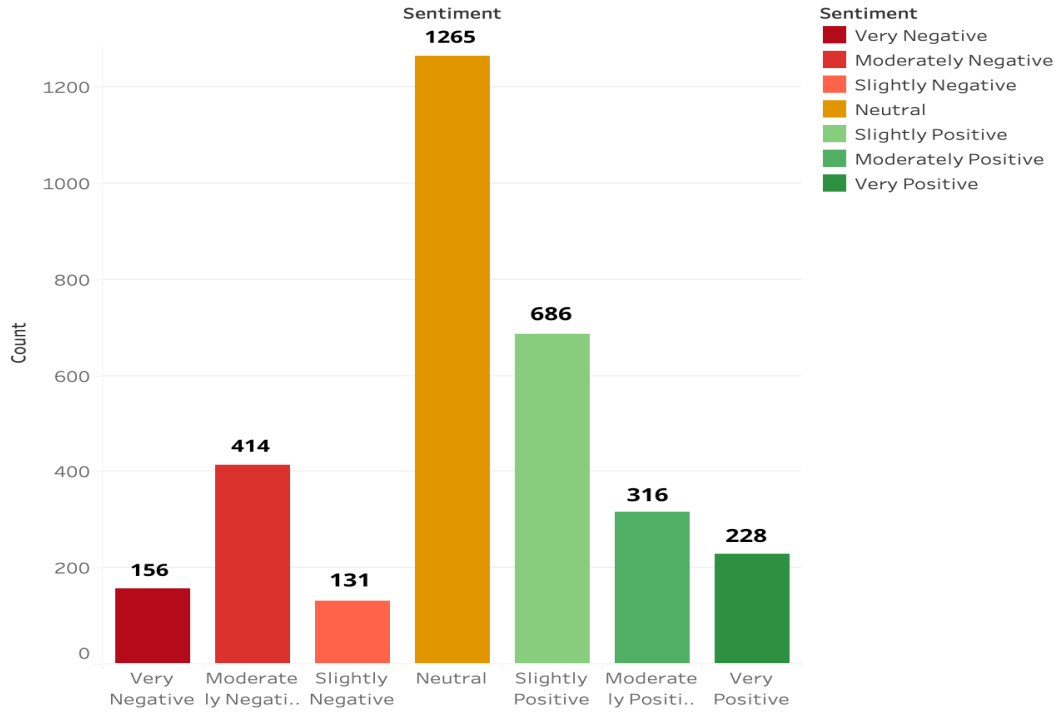


4.2 Exploratory Sentiment analysis

4.2.1 Sentence level

The sentiment analysis of Reddit comments on a sentence level reveals for each comment which sentiment is expressed, in threads on collaborations between luxury brands and video games (See Figure 4.2.1).

Figure 4.2.1 *Distribution of Sentiment Categories in Sentiment Analysis at Sentence level*



The analysis revealed that the most frequent sentiment category was neutral, with a total count of 1265 Reddit comments. This indicates that a significant part of the comments in threads on gamification attempts of luxury brands conveyed neither positive nor negative emotions.

After neutral, the second most frequent comment sentiment was ‘Slightly Positive’, with 686 comments falling into this category, that there is a suggesting a tendency towards mildly positive expressions. Regarding the rest of the positive sentiment points – ‘Moderately Positive’ sentiments were present in 316 comments, while the ‘Very Positive’ category contained 228 comments, revealing that while the highly positive sentiments were present , these were less frequent than slightly and moderately positive sentiments.

Regarding the negative sentiment expressions, a total of 414 comments were classified as ‘Moderately Negative’ – making this the third largest sentiment category – indicating that a substantial amount of Moderately Negative sentiment is found in the dataset. From the rest of the negative sentiment points – 156 comments contained ‘Very Negative’ sentiments, reflecting a lower occurrence of extremely negative sentiments. Lastly, 131 Reddit comments expressed a ‘Slightly Negative’ sentiment – was the least frequent among the negative sentiment categories.

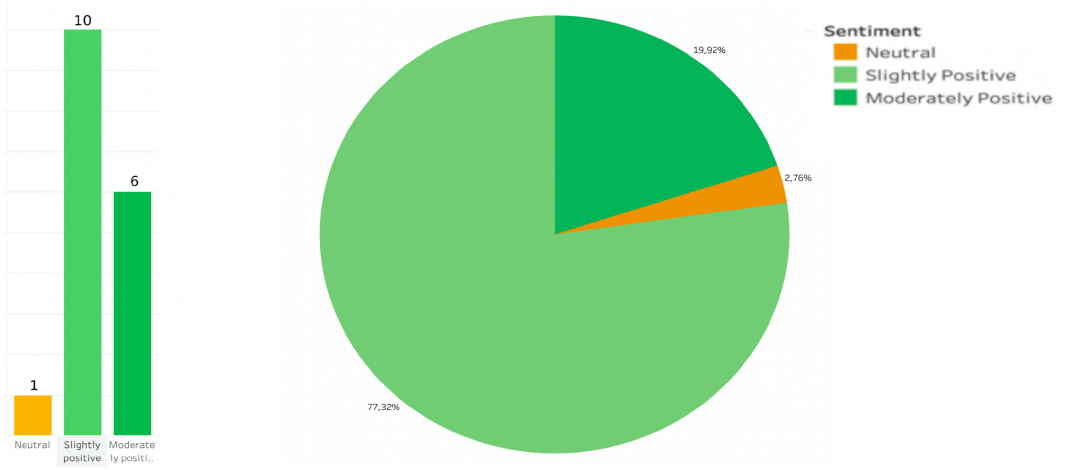
The sentiment distribution shown in the chart indicates that the overall sentiment is fairly balanced but leans towards the neutral to slightly positive range.

4.2.2 Document level

In Figure 4.2.2, the sentiment expression of Reddit comments in threads about collaborations between luxury brands and video games is portrayed at a document level – looking at the overall sentiment of the threads included in the analysis. The most frequent sentiment type was 'Slightly Positive,' with 10 threads showing an overall slightly positive sentiment when considering the entire discussion within each thread. In addition to this, 6 threads expressed an overall sentiment of 'Moderately Positive,' revealing that a significant portion of the discussions had a moderately positive tone. When looking at the overall sentiment of the threads, none of the threads showed any type of negative sentiment – meaning there were no threads classified as very, moderately or even slightly negative. However, the analysis revealed that only 1 thread was classified as neutral, indicating that most threads conveyed some level of sentiment, which in this case is positive.

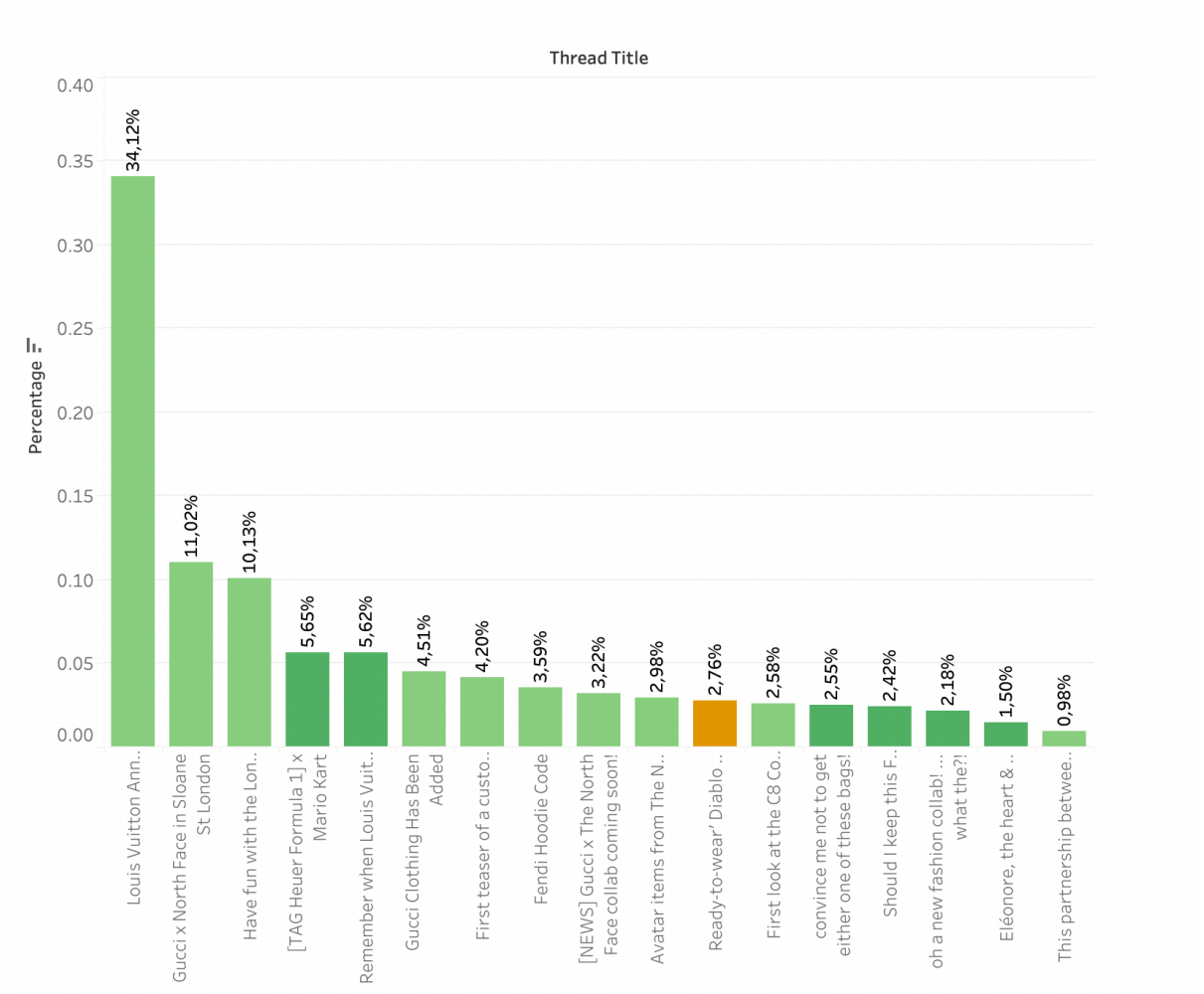
The pie chart in Figure 4.2.2.1 further illustrates the proportion of each sentiment category. When accounting for the weight of each thread – meaning the amount of comments that appear in a thread compared to the total amount of comments in the data set – the pie chart shows that the majority of threads leaned towards a positive sentiment. From the weighted sentiment, taking into account the number of comments per thread, 77.32% was slightly positive. An additional 19.92% expressed a moderately positive sentiment. Lastly, the one neutral thread, when accounted for the weight of the thread, results in a 2.76% neutral score.

Figure 4.2.2.1 *Distribution of Sentiment Categories in Sentiment Analysis at Document/Thread Level*



The data summarized in Figure 4.2.2.1 is further dissected in Figure 4.2.2.2. Here, each Reddit thread is ordered from largest discussion to smallest discussion. As can be seen in the figure, the thread with largest comment section is "*Louis Vuitton Announces League of Legends Partnership"* with 1112 individual comments, accounting for 34.12% of the total comments in the data set, is categorized as slightly positive (See Appendix B for a detailed overview of all sentiment analysis findings information). Furthermore, out of the ten largest threads from the data set, containing 85.04% of all discourse, 8 threads are slightly positive and 2 threads are very positive. In conclusion, 16 out of 17 threads – or 97.24% of the weighted threads – indicate a generally positive reception towards the topic of collaborations between luxury brands and video games at the thread level.

Figure 4.2.2.2 *Percentage Distribution of Sentiment Across Different Thread Titles*



5. Discussion

In this research, the investigated phenomenon was the impact of gamification strategies by luxury brands, with a focus on how brand integration in video games affects brand perception and purchase intentions among Millennials and Generation Z. The data was collected through a mixed-methods approach, where a quantitative survey was conducted to gain insights and answer the research question. In addition to this, an exploratory sentiment analysis was conducted to measure online voluntary expression regarding collaborations between luxury brands and video games, and how these expression compare to expressed opinion through explicit queries from the survey. The analysis of the survey data and the sentiment analysis revealed multiple interesting findings.

5.1 Discussion of survey results

Starting with the findings of the hypotheses testing, all hypotheses were significant and accepted, however not all effects were as strong. First, hypothesis 1 predicted that predicted self-congruence with in-game characters is positively associated with virtual purchase intention. This was confirmed by the data demonstrated a small, but significant positive effect of self-congruity with in-game avatars on virtual purchase intention. This entails that participants who felt a strong alignment between their real and virtual identities showed a higher likelihood of purchasing virtual luxury items. Therefore, this research aligns with previous literature on self-congruity theory, that suggested that when individuals perceive their in-game avatars as extensions of themselves, they are more likely to make virtual purchases, and do so more frequently (Davis & Lang, 2013, p. 60). Ko and Park (2020, p. 614) found that individuals spend money on in-game items to enhance their virtual image and better reflect their real-life aspirations. Additionally, Virtual luxury products are often more affordable and accessible than their physical counterparts, offering consumers a luxury experience at a lower cost (Park and Kim, 2023, p. 2). Therefore, consumers are motivated to purchase in-game luxury items as a means of self-expression and status enhancement as mentioned by Guzzetti et al. (2023, p. 206). The affordability and accessibility of virtual luxury goods compared to real-life luxury items contribute significantly to their appeal, as it allows players to experience luxury without the high costs associated with physical products.

Furthermore, the results of the second and third hypotheses testing provided insight in the relationship between individuals' attitudes toward luxury brand gamification and their

subsequent intentions to purchase both virtual and real luxury products. The analysis results revealed a small positive effect of the independent variable attitude towards gamification of luxury brands on both virtual and real product purchase intention. Both hypotheses are grounded in the Theory of Planned Behavior proposed by Ajzen (1991, p. 181), which suggests that an individual's attitude towards a behavior influences their intention to engage in that behavior, such as a purchase, by shaping their motivation and perceived ease of performing the action – to which the results align. Furthermore, do the findings align with prior research indicating that consumers use products to express their identity (Jain et al., 2015, pp. 164-165), particularly in virtual settings where customization and personalization are prevalent. These findings indicate that the attitude of the consumer towards gamification of luxury brands has a significant influence on the intention to purchase virtual, as well as to real-world luxury products. From these findings it can be concluded that consumers who feel positive towards luxury brand integration in gaming are more likely to translate this appreciation into actual purchasing behavior. Overall, these results show how gamification can be a powerful marketing strategy for luxury brands, as they show that gamification is effective at boosting consumer engagement and in turn increases the can increase sales for both the virtual and physical product market.

The fourth and fifth hypotheses proposed that the consumer's attitude towards the gamification of luxury brands is positively associated with brand perception and brand coolness. The findings revealed a medium positive effect of independent variable Attitude towards gamification of luxury brands on dependent variable brand perception, and a medium to large positive effect on the dependent variable brand coolness. The results demonstrate that positive attitudes towards luxury brands' gamification efforts significantly enhance brand perception and coolness, and in turn suggest that gamification can be an effective strategy for making luxury brands be perceived more positively and cool. Furthermore, do these findings underscore gamification's value in building a strong brand image and appealing to younger, trend-conscious consumers.

These results are consistent with the findings of Romaniuk and Sharp (2003, p. 218) and confirm that gamification can that enhance brand perception. Furthermore, do the results align with the findings of Truong et al. (2021, p. 108) and Salem et al. (2023, p. 13), by showing that gamification can be an effective way to enhance brand coolness by making the brand appear more trendy and desirable. The positive effects of gamification on brand perception are consistent with Barajas-Portas (2015, p. 7-8) and Sangroya et al. (2021, p. 14), who highlight the role of gaming interactions in shaping brand perception through emotional

connections. Guzzetti et al. (2023, p. 207) noted that luxury brand gamification might have a negative effect by potentially triggering adverse emotions towards luxury fashion brands, which can lead to brand hate in cases where the execution of gamification results in poor product performance or when there is a disconnect between the values and identity of gamers and those of the luxury brands. The difference in the results of this research and those found by Guzzetti et al. (2023, p. 207) could be potentially attributed to the participants in this research having not previously encountered cases of luxury brand integration in gaming, where gamification is poorly executed or fails to align with the values and identity of gamers. This lack of prior negative experiences might lead to a more favorable perception of gamification, influencing their responses and attitudes positively.

The last two hypotheses predicted that the attitude towards luxury brand collaborations is positively associated with virtual and real product purchase intention. The results showed that the independent variable, attitude towards luxury brand collaborations, had a small to medium positive effect on the dependent variable, virtual purchase intention – and a small effect on the dependent variable, real product purchase intention. This indicates that the positive attitudes of a consumer toward luxury brand collaborations in gaming environments moderately increases their intention to purchase virtual luxury products and to a lesser extent, real luxury products. Furthermore, this suggests that participating in gaming collaborations can be a way for luxury brands to influence consumer behavior and significantly boost purchase intentions, particularly concerning the virtual luxury product market. Compared to previous research, the results align with those made by Kim et al. (2023, p. 2294) who found that luxury brand collaborations in online games create a unique consumer value proposition that has a positive influence on consumers' purchase decisions. Moreover, the results also align with actual causes such as the success of the virtual Gucci Garden on Roblox (Kim & Bae, 2023, p. 3; Guzzetti et al., 2023, p. 206).

5.2 Discussion of sentiment analysis results

Regarding the sentiment analysis part of results, the analysis revealed that while a significant portion of the Reddit comments on luxury brand collaborations with video games expressed neutral emotions, there is a clear tendency toward positive sentiment. This was particularly clear at the document level analysis, where most threads conveyed a slightly to moderately positive tone. These results suggest that overall, these collaborations are received favorably by the community. While at the sentence level the positive sentiments are more numerous, and the sentiment analysis indicates a predominantly positive reception of luxury

brand collaborations with video games, the negative comments also make up a significant portion. The significant portion of negative comments could potentially be attributed to the phenomenon described by Guzzetti et al. (2023, p. 207), where comments scraped from the subreddit of a game involved luxury game integration into video games, where the commenters experienced negative emotions due to factors such as a disconnect between the values and identity of gamers on the platform Reddit or the gamification attempt of that specific game having poor product performance. Overall, the sentiment analysis revealed a clear tendency towards positive sentiment at the document level, while the sentence-level analysis showed a more divided but still positive-leaning sentiment. This suggests that while the overall tone in larger discussions are positive, individual opinions are more varied, reflecting a mixed reception of luxury brand collaborations in online gaming environments.

5.3 Conclusion and implications

Now to answer to research question: "*To what extent does brand integration in video games affect brand perception and purchase intention for luxury brands?*" The findings indicate that brand integration in video games has a significant positive impact on the perception of the luxury brand**.** Though still revealing a significant positive effect, the effect on actual intent to purchase luxury goods – virtual and real-world – is smaller. Therefore, it can be stated that brand integration in video games can play a significant role in enhancing luxury brand perception, brand coolness, and virtual and real-world purchase intentions. These integrations present valuable opportunities for luxury brands to connect with consumers through innovative digital experiences.

From a managerial perspective, this study underscores the importance of incorporating gamification into marketing strategies to enhance consumer engagement and foster positive brand perceptions. In accordance with the results of this research, luxury marketers should further utilize luxury brand integration into their strategies to create campaigns that resonate with continuously growing generation of luxury consumers Millennials and Gen Z, as for these generations this will positively influence the perception and coolness of the brand, which are increasingly important to this generation of consumers. Furthermore, has this research shown that incorporating gamification in luxury marketing has a significant positive impact on the virtual and real product purchase intention of luxury goods. This should further encourage luxury marketers as this entails that gamification could, when executed properly, increase sales simultaneously with the brands perception and coolness. Executing the gamification attempt properly is of great importance as Guzzetti et al.

(2023, p. 207) noted for maintaining a positive brand perception, which also came to the forefront in sentiment analysis. The presence of neutral and negative sentiments in the exploratory sentiment analysis further underline the need for brands to address potential concerns and criticisms in their gamification strategies, ensuring a balanced and positive consumer perception. By understanding these potential dangers, marketers can refine their approaches to optimize brand appeal and effectively engage with their target consumer segment.

Concerning the theoretical implications, this research contributes to the academic fields of luxury marketing, consumer behavior, and brand management studies. This is done by extending upon multiple theories – namely Theory of Planned Behavior, self-congruence theory, consumer perception theories and brand collaboration theory. First, this research further builds extends the Theory of Planned Behavior (TPB) by demonstrating its applicability to virtual environments, specifically those pertaining to gaming. By integrating luxury brands into gaming environments, the research highlights how digital platforms facilitate identity expression and social positioning, aligning with existing consumer psychology theories. Second, this research is of importance for the self-congruence, as it supports the idea that self-congruity theory plays an important role in understanding how digital experiences influence consumer behavior by reinforcing personal identity and brand alignment. Third, this research also advances the understanding of brand perception and coolness by illustrating that these are not just inherent qualities of brands, but are also shaped by consumer impressions and digital interactions. At last, this study highlights how brand collaboration theory helps for a better understanding of the influence of partnership between luxury brands and video games on consumer behavior. Overall, this study enriches the existing theoretical frameworks by incorporating the dynamics of digital consumer engagement and expanding the understanding of how virtual interactions influence both consumer attitudes and behaviors.

6. Limitations and future research

The first limitation of this study is the use of a combination of snowball and convenience sampling, rather than a random sampling strategy. These sampling methods are typically not recommended for quantitative research, mainly because they don't produce representative samples, which can in turn harm the generalizability of the study.
Another limitation of this study is the gaming habits of the participants. The sample shows that 31.3% of participants reported playing more than 15 hours per week, with varying proportions for other gaming durations (19.4% playing 3 to 6 hours, 18.8% playing 7 to 10 hours, and 16.9% playing 11 to 14 hours). Since a large portion of the survey respondents was recruited through gaming-related subreddits, the results of this research may primarily reflect the opinions of active gamers. As a result, these findings might not accurately represent the gaming habits of the broader Gen Z and Millennial population, potentially affecting the generalizability of the study's conclusions. Furthermore, the sample was also skewed in terms of gender, with a significantly higher proportion of males (68.4%) compared to females (27.7%). The last limitation regarding the sample is the size of the sample, which consisted out of 160 valid participants. While this number is valid for reaching statistically sufficient results, it limits the ability to generalize findings to a larger population, which was in part due to the high level of participant dropout, due to which 129 partial respondents had to be deleted. This could possibly be attributed to the length of the survey, and the fact that participants finding the survey on Reddit felt no obligation to finish the survey, as this was also an opening statement.

An additional limitation of this study is the fact that the survey inquires participants on their attitudes towards luxury brand integration in video games. However, gamification attempts between games can vary, some are better executed and perceived than others. Additionally, at the beginning of the survey, examples of the phenomenon were shown using the real world and virtual collections of Pokémon Go and luxury brand Fendi, as well as the collections of Balenciaga and Fortnite. This might have led participants to engage with preconceived notions about luxury brand gamification, potentially influencing their opinions on the practice.

There are also several limitations regarding the data collection process for the sentiment analysis. First, only 17 threads were scraped for data, which can be problematic due to several reasons that affect the quality, reliability, and generalizability of the findings. This limited amount was reached due to the fact that only this many large discussion were

found pertaining to collaborations between video games and luxury brands. Additionally, the use of the VADER, a rule-based tool, to perform the sentiment analysis could be a limitation of the study. Using machine-learning sentiment analysis tools could lead to more accurate readings. However, VADER is a sentiment analysis tool based on predefined rules, which eliminates the need for training data, allowing for quick and straightforward implementation.

The first recommendation for future research is to deploy experimental design instead of a survey. Firstly, this could establish cause-and-effect relationship between luxury brand integration, consumer perceptions, and purchase intention – instead of the correlations found by surveys. Secondly, it allows the researcher more control by providing a stimuli, which help participant can result more accurate respondents, instead of inquiring on what the participant attitudes towards luxury brand integration in video games is in general. By enabling manipulation of the independent variable to, future researchers can examine its effects under different conditions. For example, researchers can test different levels of gamification or types of games to see how these variations impact brand perception.

Another recommendation for future research is to conduct a survey with a random sample, among millennials and Gen Z. Non-probability sampling in this research could have potentially hurt the generalizability of the findings. Therefore, using random sampling would ensure the study's results are unbiased, representative, and generalizable to the broader population, enhancing the credibility and applicability of the findings.

The third proposal for future research involves investigating the specific conditions or contexts in which gamification could lead to brand aversion or negative consumer perceptions. While this study found overall positive impacts of gamification on luxury brands, the sentiment analysis revealed a dismissible quantity of negative comments. As Guzzetti et al. (2023, p. 207) noted, this could have grave effects on the perception of a luxury brand, and it should thus be further studied on what exactly could cause this. This could involve qualitative studies focusing on consumer interviews or focus groups to explore deeper psychological responses.

The last recommendations for future research are regarding sentiment analysis. Future research should conduct a sentiment analysis on other platforms besides Reddit, such as X (formerly known as Twitter) or Instagram. This could be done under the posts created by the luxury brands themselves to measure how their actual audience reacts to collaborations with video games. Additionally, it is important for future studies to analyze a larger data set, since this would increase the generalizability of the findings.

Summing up, this research provides a nuanced understanding of the influence of

gamification on luxury brand perception and purchase intentions among Millennials and Generation Z. As luxury brands continue to integrate digital strategies into their marketing efforts, particularly in gaming and the metaverse, the findings underscore the importance of aligning these efforts with the values and behaviors of tech-savvy consumers. By delving deeper into previously mentioned recommendations for future research, researchers can contribute to a more comprehensive understanding of the increasingly digital world of luxury marketing. Insights from these studies will not only aid academic discourse but also guide luxury brand managers in crafting innovative and effective marketing strategies in an increasingly digital world

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Appendix A

List of items

Factor/Item	Mean	Standard Deviation
On a 5-point scale:		
Attitude towards Luxury brand integration into video games (α=.85)	2.96	0.74
It is ok for game producers to contact companies to negotiate luxury brand placement deals	3.64	1.20
I don't mind paid luxury brand placement, as long as the artistic freedom of the developer is guaranteed	3.38	1.36
Luxury brand placement in games is unethical. (R)	3.51	1.23
luxury brand placement is an acceptable form of extra income for game developers	3.79	1.27
Luxury brand placement should be banned. (R)	2.60	1.26
I prefer to see real than fictitious brands.	2.84	1.25
The presence of branded products increases realism	3.54	1.40
I don't mind if developers use brand names in video games	2.83	1.24
I find it awkward when developers use a specific brand name (e.g. BMW) instead of the product name (car)	3.15	1.27
The presence of brand names is distracting. (R)	2.42	1.31
I have learned about new brands through video games	2.52	1.23
I have searched for information on brands I have seen in a video game	2.19	1.43

I have bought brands because I have seen them in a video game	1.71	1.16
On a 7-point scale:		
Purchase Intention (α=.88)	3.43	1.54
I am likely to consider purchasing virtual items to decorate my avatar	3.80	2.00
I am likely to consider purchasing virtual items (e.g. clothes, accessories) for my avatar	3.80	2.10
I would like to recommend the virtual items I bought for my avatar to my friends	2.83	1.80
The experience in a video game would increase my intention to buy the real items	3.40	1.95
I would consider buying real products for myself	3.56	1.97
The experience in the video game would help me make a purchase decision about real products	3.17	1.98
On a 7-point scale:		
Brand Coolness (α=.93)	3.24	1.32
When luxury brands collaborate with video games in general, how do you perceive the luxury brand:		
Is innovative	3.60	1.90
Is original	3.40	1.78
Does its own thing	3.63	1.75
Is authentic	3.24	1.76
Is true to its roots	3.08	1.59

Doesn't seem artificial	2.88	1.62
Doesn't try to be something it's not	3.27	1.68
Is rebellious	3.12	2.72
Is true to its roots	3.21	2.35
Is defiant	3.29	2.95
Is not afraid to break rules	3.92	3.86
Is nonconformist	3.69	3.42
Is chic	3.21	1.78
Is Glamorous	3.22	1.77
Is sophisticated	3.06	1.78
Is luxurious	3.34	1.91
On a 5-point scale:		
Brand Perception (α=.88)	3.90	1.42
When luxury brands collaborate with video games in general, how do you perceive the luxury brand:		
This brand's ambience is sophisticated.	3.29	1.63
This brand is recognized as a luxury brand.	4.01	1.70
This brand's stores are localized in fancy locations.	3.99	1.71
These brand's products are prestigious to people who use them.	4.12	1.82
This brand has credibility in the market.	4.10	1.78
On a 5-point scale:		

Self-congruity (α=.92)	2.75	1.17
The avatar/virtual identity/profile in a game is consistent with how I see myself.	2.69	1.29
I am quite similar to the personality of the avatar/virtual identity/profile in a game.	2.72	1.28
The avatar/virtual identity/profile in a game is consistent with how I would like to see myself.	2.86	1.32
I would like to be perceived as similar to the avatar/virtual identity/profile in a game.	2.74	1.33
On a 5-point scale:		
Collaboration product attributes (α=.93)	2.59	.95
P*lease indicate to what extent you agree with each statement regarding collaborative products between luxury brands and video games:*		
Collaboration products are fresh	2.81	1.23
Collaboration products are new	2.69	1.23
Collaboration products are creative	2.78	1.26
Collaboration products are different	2.89	1.24
Collaboration products help me express myself	2.22	1.35
Collaboration products help keep my identity	2.02	1.19
Collaboration products help others judge me	2.56	1.32.
Collaboration products look stylish	2.88	1.25
Collaboration products are attractive	2.69	1.26

Appendix B

Sentiment Analysis of Reddit Threads on Luxury Brand and Video Game Collaborations

Thread Title	Compound Score	Sentiment	Comments (*N* = 3259)	Percentage of total
Fendi Hoodie Code	0.14	Slightly positive	117	3.59%
Louis Vuitton Announces League of Legends Partnership	0.10	Slightly positive	1112	34.12%
This partnership between The Sims and Moschino is going too far ... 🙃	0.13	Slightly positive	32	0.98%
Remember when Louis Vuitton and Prada both used Lightning as a model/spokesperson? Whether or not you hate XIII this was a cool moment in gaming history.	0.24	Moderately positive	183	5.62%
[NEWS] Gucci x The North Face collab coming soon!	0.14	Slightly positive	105	3.22%
Gucci Clothing Has Been Added	0.07	Slightly positive	147	4.51%
Gucci x North Face in Sloane St London	0.08	Slightly positive	359	11.02%

Avatar items from The North Face x Gucci Collection are coming to Pokémon GO!	0.02	Neutral	97	2.98%
[TAG Heuer Formula 1] x Mario Kart	0.20	Moderately positive	184	5.65%
Should I keep this Fendi x Pokemon baguette? Thoughts?	0.40	Moderately positive	79	2.42%
convince me not to get either one of these bags!	0.27	Moderately positive	83	2.55%
Have fun with the Longchamp x Pokemon collaboration, arriving soon in stores and in Pokemon GO!	0.15	Slightly positive	330	10.13%
oh a new fashion collab! ... what the?!	0.22	Moderately positive	71	2.18%
First look at the C8 Corvette (and announcement of Guizio and Versace and Champion as fashion brands to come into the game)	0.19	Slightly positive	84	2.58%

First teaser of a customised Lotus Emira (and some clothing brand named Balmain)	0.10	Slightly positive	137	4.20%
Eléonore, the heart & soul of Senegal's street racing scene alongside her custom Balmain Lotus Emira (full picture)	0.41	Moderately positive	49	1.50%
Ready-to-wear' Diablo 4 clothes at Milan Fashion Week seem unwearable, have nothing to do with Diablo 4	0.04	Neutral	90	2.76%

Appendix C

Summary of Hypotheses and Regression Results

Hypothesis	**IV**	**DV**	***F*-Statistic**	***p*-Value**	***β* , *R²***
H1	Self-Congruence with In-Game Characters	Virtual Purchase Intention	$F(1, 155) = 19.96$	$< .001$	$\beta = .34$, $R^2 = .11$
H2	Attitude Towards Luxury Brand Gamification	Real Product Purchase Intention	$F(1, 155) = 55.98$	$< .001$	$\beta = .52$, $R^2 = .27$
H3	Attitude Towards Luxury Brand Gamification	Virtual Product Purchase Intention	$F(1, 155) = 23.77$	$< .001$	$\beta = .37$, $R^2 = .13$
H4	Attitude Towards Luxury Brand Gamification	Brand Perception	$F(1, 158) = 108.91$	$< .001$	$\beta = .64$, $R^2 = .41$
H5	Attitude Towards Luxury Brand Gamification	Brand Coolness	$F(1, 158) = 149.20$	$< .001$	$\beta = .68$, $R^2 = .49$
H6	Attitude Towards Luxury Brand Collaborations	Virtual Product Purchase Intention	$F(1, 155) = 62.77$	$< .001$	$\beta = .54$, $R^2 = .29$
H7	Attitude Towards Luxury Brand Collaborations	Real Product Purchase Intention	$F(1, 155) = 19.35$	$< .001$	$\beta = .33$, $R^2 = .11$

Appendix D

Thesis questionnaire

Consent form

Dear respondent,

Thank you for participating in this research. The purpose of this survey is to examine how the integration of luxury brands into video games affects consumer perceptions and purchase intentions,.

This survey is completely anonymous, your responses will be kept confidential, and no third parties will have access to them. It's also important to note you are free to end the survey whenever you wish.

Completing this survey will take approximately 7 minutes
For further questions or concerns about the study, please contact 546519RH@eur.nl.

Please select the "I agree" box below if you

- Consent to participating in this research
- Allow your answers as to be used as data
- Confirm to be 18 years or older

- ◯ I agree
- ◯ I disagree

Block 5

Younger people are spending more time in online virtual worlds. Seeing this trend, luxury brands are now using elements of gaming to attract customers. For example, companies are embedding their products into games, allowing players to customize their game characters with branded items.

They're also selling digital versions of real-world goods, such as clothing for avatars, and even unique digital items called non-fungible tokens, often tied to a real-life collection.

Two examples illustrate this: Fendi and Pokémon Go, as well as Balenciaga and Fortnite, collaborated to create digital in-game clothing lines within the video game Fortnite before launching corresponding physical clothing lines.

Please continue to the next page

Gaming Freq

Have you ever encountered a luxury brand in a video game? (e.g in Minecraft, Fortnite, Pokemon Go, and Gran Turismo)

- ◯ Yes
- ◯ No

On average, how many hours do you spend playing video games per week?

- ◯ Less than 1 hour
- ◯ 1-2 hours
- ◯ 3-6 hours
- ◯ 7-10 hours
- ◯ 11-14 hours
- ◯ 15+ hours

OPTION 2: Attitude towards luxury brand in video game

The following statements are about the attitudes towards luxury brand placements in video games, please indicate to what extend you agree with the following statements:

In video games...

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
It is ok for game producers to contact companies to negotiate luxury brand placement deals	○	○	○	○	○
I don't mind paid luxury brand placement, as long as the artistic freedom of the developer is guaranteed	○	○	○	○	○
Luxury brand placement in games is unethical.	○	○	○	○	○
luxury brand placement is an acceptable form of extra income for game developers	○	○	○	○	○
Luxury brand placement should be banned.	○	○	○	○	○

When playing a video game

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I prefer to see real than fictitious brands.	○	○	○	○	○
The presence of branded products increases realism	○	○	○	○	○
I don't mind if developers use brand names	○	○	○	○	○
I find it awkward when developers use a specific brand name (e.g. BMW) instead of the product name (car)	○	○	○	○	○
The presence of brand names is distracting.	○	○	○	○	○

To what extent do you agree with the following statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I pay attention to the brands that in-game characters use	○	○	○	○	○
I have learned about new brands through video games	○	○	○	○	○
I have searched for information on brands I have seen in a video game	○	○	○	○	○
I have bought brands because I have seen them in a video game	○	○	○	○	○

Seeing luxury brands incorporated into video games is..." Please indicate how much you agree with this statements

Bad	○	○	○	○	○	○	○	Good
Uninteresting	○	○	○	○	○	○	○	Interesting

Dislike	○	○	○	○	○	○	○	Like
Uncreative	○	○	○	○	○	○	○	Creative
Uninformative	○	○	○	○	○	○	○	Informative
Wrong	○	○	○	○	○	○	○	Right

COLLAB PRODUCT ATTRIBUTE

For the questions below, please consider your general impression of collaborative products between luxury brands and video games.

Please indicate to what extent you agree with each statement regarding collaborative products between luxury brands and video games:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Collaboration products are fresh	○	○	○	○	○
Collaboration products are new	○	○	○	○	○
Collaboration products are creative	○	○	○	○	○
Collaboration products are different	○	○	○	○	○

Please indicate to what extent you agree with each statement regarding collaborative products between luxury brands and video games:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Collaboration products help me express myself	○	○	○	○	○
Collaboration products help keep my identity	○	○	○	○	○
Collaboration products help others judge me	○	○	○	○	○

Please indicate to what extent you agree with each statement regarding collaborative products between luxury brands and video games:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Collaboration products look stylish	○	○	○	○	○
Collaboration products are attractive	○	○	○	○	○
Collaboration products seem emotional	○	○	○	○	○
Collaboration products are cool	○	○	○	○	○

Self-Congruity

Below are statements about how closely your video game avatar reflects your own personality and characteristics. Please indicate how much you agree with each statement.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
The avatar/virtual identity/profile in a game is consistent with how I see myself.	○	○	○	○	○

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I am quite similar to the personality of the avatar/virtual identity/profile in a game.	○	○	○	○	○
The avatar/virtual identity/profile in a game is consistent with how I would like to see myself.	○	○	○	○	○
I would like to be perceived as similar to the avatar/virtual identity/profile in a game.	○	○	○	○	○

Brand Perception and Brand Coolness

Please indicate the extent to which you agree with the following statements about a luxury brand collaborating with video games.

When luxury brands collaborate with video games in general, how do you perceive the luxury brand?

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
This brand's ambience is sophisticated.	○	○	○	○	○	○	○
This brand is recognized as a luxury brand.	○	○	○	○	○	○	○
This brand's stores are localized in fancy locations.	○	○	○	○	○	○	○
These brand's products are prestigious to people who use them.	○	○	○	○	○	○	○
This brand has credibility in the market.	○	○	○	○	○	○	○

When luxury brands collaborate with video games in general, how do you perceive the luxury brand?

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Is innovative	○	○	○	○	○	○	○
Is original	○	○	○	○	○	○	○
Does its own thing	○	○	○	○	○	○	○

When luxury brands collaborate with video games in general, how do you perceive the luxury brand?

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Is authentic	○	○	○	○	○	○	○
Is true to its roots	○	○	○	○	○	○	○
Doesn't seem artificial	○	○	○	○	○	○	○
Doesn't try to be something it's not	○	○	○	○	○	○	○

When luxury brands collaborate with video games in general, how do you perceive the luxury brand?

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Is rebellious	○	○	○	○	○	○	○

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Is true to its roots	○	○	○	○	○	○	○
Is defiant	○	○	○	○	○	○	○
Is not afraid to break rules	○	○	○	○	○	○	○
Is nonconformist	○	○	○	○	○	○	○

When luxury brands collaborate with video games in general, how do you perceive the luxury brand?

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Is chic	○	○	○	○	○	○	○
Is Glamorous	○	○	○	○	○	○	○
Is sophisticated	○	○	○	○	○	○	○
Is luxurious	○	○	○	○	○	○	○

When luxury brands collaborate with video games in general, how do you perceive the luxury brand?

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Is liked by most people	○	○	○	○	○
Is in style	○	○	○	○	○
Is popular	○	○	○	○	○
Is widely accepted	○	○	○	○	○

When luxury brands collaborate with video games in general, how do you perceive the luxury brand?

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Is a cultural symbol	○	○	○	○	○
Is iconic	○	○	○	○	○

Attention check

Please select "Strongly agree" to show that you are paying attention to this question

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

Purchase intention

The following statements are about the intent to purchase in-game content and , please indicate to what extend you agree with the following statements:

While playing a video game...

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I am likely to consider purchasing virtual items to decorate my avatar	○	○	○	○	○	○	○
I am likely to consider purchasing virtual items (e.g. clothes, accessories) for my avatar	○	○	○	○	○	○	○
I would like to recommend the virtual items I bought for my avatar to my friends	○	○	○	○	○	○	○

If the virtual products I have purchased for my avatar are available in the real world...

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
The experience in a video game would increase my intention to buy the real items	○	○	○	○	○	○	○
I would consider buying real products for myself	○	○	○	○	○	○	○
The experience in the video game would help me make a purchase decision about real products	○	○	○	○	○	○	○

Demographics

What is your nationality?

What is your age?

How do you describe yourself?

- ○ Male
- ○ Female
- ○ Non-binary / third gender
- ○ Prefer to self-describe
- ○ Prefer not to say

What is the highest level of education you have completed?

- ○ Primary school
- ○ Secondary school
- ○ Secondary vocational school (MBO)
- ○ Higher professional education (HBO)
- ○ University bachelor degree (WO)
- ○ University masters degree

- ◯ PhD
- ◯ Other