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Luxury Fashion Brands in the Metaverse: the antecedents of Customer Brand Engagement

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Abstract

Purpose: with the ongoing 4.0 Industrial Revolution, the Metaverse is a topic that is receiving increasing attention in the latest years, in particular within the Luxury Fashion Sector. At the same time, due to the development of a customer-centric corporate vision, the concept of Customer Engagement has become vital for the success of brands. Due to this, it appears to be essential to investigate the antecedents that lead consumers to engage with Luxury Fashion Brands in the Metaverse and how companies can exploit them.

Design/methodology & Research type: empirical thesis conducted through both qualitative (interviews) and quantitative (survey) methods. A four-dimension framework was employed to test four hypotheses on the relationship between Consumers' characteristics and needs and Consumer Brand Engagement with Luxury Fashion Brands in the Metaverse. For the qualitative analysis, the sample made of ten people (five Experts and five Non-Experts on the topic) has been interviewed. For the qualitative analysis, 181 responses have been collected through an online survey and then analyzed with SPSS 28 through linear regression analysis.

Findings: Consumers' Emotions, Attitudes, Personality Traits, and their Need for Metaverse Functionalities are antecedents of CBE of Luxury Fashion Brands in the Metaverse. This indicates that consumers are more likely to engage with these types of brands in the Virtual Context as these values increase. Consumers' Attitudes are the most influential one, but also the other three variables present similar values.

Research implications: marketing managers should focus on leveraging Consumers' Emotions from the first moment they come into contact with them as well as put attention to Consumers' Personality Traits and Attitudes, modifying their marketing and communications strategies. Furthermore, they must do in-depth market research about the most important Metaverse Functionalities for Consumers. Above all, they should invest in advanced technologies trying to meet Consumers' preferences and tastes.

Originality/value: this study contributes to the literature on Customer Brand Engagement of Luxury Fashion Brands in the Metaverse. First, it provides a detailed analysis of how exploiting and applying new technologies to Customer Brand Engagement in the Luxury Fashion Industry. Second, it empirically demonstrates what are the main factors that lead consumers to engage with Luxury Fashion Companies in the Virtual World.

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Lucrezia Civitelli

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CHAPTER 1 INTRODUCTION

1.1.The Metaverse

The Metaverse is a completely immersive, three-dimensional digital environment that can be accessed through the Internet and navigated using an avatar (Dionisio et al. 2013). It can be defined as an embodied Internet where users can interact with nearly anything they can think of while actually inside the experience rather than merely viewing it (McKinsey 2022). The Metaverse is regarded as the mobile Internet's successor (Zuckerberg[1] 2021) and it is able to transform the online experiences of today into interconnected, immersive digital worlds, where individuals may engage with one another regardless of where they are physically located.

The term Metaverse is first coined in 1992 by Neal Stephenson, author of the novel Snow Crash, and it originated from the union of "meta" and "universe" (Stephenson 1992). In the book, the Metaverse is described as a virtual environment in which living things interact with intelligent agents in a realistic setting. Users enter the Metaverse through their computer and walk around the reality displayed on the screen by donning three-dimensional glasses. They can personalize their avatars, travel, live in apartments, and take part in several social and practical activities.
Virtual worlds like Second Life and The Palace, which allow users to engage in social interaction and produce their own digital content, first appear in the 1990s. Second Life is an online virtual world where users can create their avatars and communities (Erickson 2007). Even if these early virtual worlds have not been developed for the technological actual standards, they have laid the groundwork for the development of greater virtual environments. Due to the creation of more sophisticated virtual reality technologies in the early 2000s, such as head-mounted displays and motion-tracking sensors, virtual worlds start to develop quickly. For instance, World of Warcraft, an online game published in 2004, has rapidly became one of the most popular virtual worlds of the time. It provides a really well-organized and exciting game experience with a story, characters, and goals to achieve. World of Warcraft has a more organized and linear approach than Second Life, and it focuses less on user-generated content.

[1] Meta's CEO

While the previously mentioned virtual worlds are more oriented towards activities such as gaming or socializing and have clearer game mechanics, the Metaverse is a broader and more ambitious concept that is envisioned as a fully interconnected and immersive virtual world.

Even if the Metaverse exists for a considerable period of time, it has gained significant attention in recent years. Several tech companies and startups, such as Facebook's Horizon Workrooms, Decentraland, and Roblox, are already working on creating their own versions of the Metaverse, while others are still exploring how the concept could be applied to various industries.
According to recent McKinsey research, the number of internet searches for the word Metaverse have risen by 7,200% in 2021 compared to the previous year. Moreover, it has been found that about 60% of consumers are enthusiastic about the idea of moving commonplace activities like dating, working out, and shopping to the Metaverse (McKinsey 2022). According to reports, companies involved in the Metaverse raised more than $10 billion in 2021, more than double what they did in 2020. It is expected that by 2030, the Metaverse might produce up to $5 trillion in value (McKinsey 2022).

As explained later, the Metaverse has been envisioned as a new frontier for many sectors such as social interactions, entertainment, education, work, and commerce.
First of all, the Metaverse plays a crucial role in the creation of social interactions. It can enable people to connect with each other in new and exciting ways, overcoming geographical and cultural barriers. The Metaverse can also provide a platform where communities can express themselves and connect with others who share similar experiences and identities. It has also the potential to completely transform how the next generation is educated across all industries and occupational roles. Furthermore, it merely offers chances to experience things in a way that is not otherwise possible.
As shown below (Table 1), the Metaverse is revolutionizing many sectors (Moro Visconti & Cesaretti 2022):

Healthcare	MR is used in staff training, pre-procedure planning, and interventions.
Military	VR and AR are used to improve defense techniques and improve the military’s training.

Manufacturing industry	The Metaverse help in training processes and products and learn safety precautions through simulations of risky circumstances. Moreover, it allows to get a more efficient plant layout design.
Education	Metaverse allows students to get a better understanding of the topics and break down language barriers. It provides new opportunities for remote learning and collaboration. Virtual classrooms and training sessions are more interactive and engaging.
Social Network	Due to the Metaverse, social networks are transforming into three-dimensional virtual social worlds.
Entertainment	Metaverse creates new forms of immersive and interactive content. Virtual concerts, festivals, and exhibitions.

Table 1. ***Industries in the Metaverse***

Despite the hype and excitement surrounding the Metaverse, there are also concerns and criticisms about its potential impact on society, culture, and the economy. Some argue that the Metaverse could exacerbate social and economic inequalities, while others worry about the ethical implications of creating alternative realities. Privacy and security concerns are also raised, as large amounts of personal data are collected and stored.

1.1.1. Metaverse's Features

The Metaverse is characterized by three main features: co-presence, continuity, and interoperability.

Despite the fact that technology has made people more connected than ever, it may also make them feel alone and isolated. Instead, users might feel a social connection in the Metaverse in a more satisfying and authentic way than they do on the Internet because of the sense of being co-present in a shared area and it could reduce misunderstandings.

Continuity refers to the possibility that people have to navigate through and communicate in interconnected digital spaces. The Metaverse allows 3D immersive experiences and multiple access points to be inclusive.

Interoperability (Leroj 2023) concerns the protocols, tools, and systems that enable users to carry items with them when they enter and exit virtual worlds assuring compatibility and consistency among various Metaverse platforms. The protocols and standards specify how various apps and systems can share information and communicate with one another, enabling frictionless interactions between people and objects.

Persistence, or ongoing presence, is a crucial concept in interoperability. For instance, clothing is a persistent object. If the customer purchase or obtain an item to change his avatars, such as a basketball player's jersey, a new pair of trendy sunglasses, or even a virtual pet, that item will accompany him on all of his online adventures.

1.1.2. The Experience in the Metaverse

In order to guarantee an immersive and unique experience, the Metaverse uses a wide range of technological platforms, including gaming, machine learning, blockchain, 3-D graphics, digital currency, sensors, and (in certain situations) VR-capable headsets. In fact, the Metaverse as a whole is a broader concept that encompasses a wide range of virtual environments and experiences. This allows brands to have new ways to interact with customers.

In order to gain a three-dimensional visualization, the Metaverse uses the so-called “Extended Reality (XR)”, which is constituted by three immersive technologies (Marr 2020): Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (RM).

Virtual Reality (VR) technology replicates a three-dimensional, computer-generated environment that can be explored and interacted with by a user in a way that appears real or tactile. It is only accessible with specific tools, like a VR headset or portable controllers. This innovative technology provides a total sense of immersion and presence in the virtual environment. VR has a wide range of potential applications, and it can be applied in several sectors, from gaming and entertainment to instruction, therapy, and training (Marr, 2020). Imitating real-life circumstances or exploring entirely new and fantastical locations enables users to have singular experiences that are not possible in the real world.

Augmented Reality (AR), which is less immersive than virtual reality, takes place in the real world but adds a digital layer on top. A smartphone or tablet and, in some cases, AR headphones are needed. When the smartphone camera captures an image of the surrounding area, the program first recognizes and tracks objects or features in the user's environment. Then, digital content that appears to be totally integrated into the genuine surroundings is superimposed over the user's perception. There are several potential applications for AR, including those in marketing, gaming, entertainment, education, and industrial design (Tolani, 2023). It can be used to provide customers with more information or context about their surroundings, such as navigation or details about products.

Mixed Reality (MR) is a technology that combines elements of both virtual and augmented reality. Headsets or other devices are employed in order to track users' movements who can move around and interact with digital content in a natural way. Digital objects give the illusion to be physically present and tangible as in real life.

As mentioned above, specific devices, such as specific headsets, glasses, and haptic devices such as gloves or vests can be used by users to interact with others. This allows them to feel completely present in the digital world and gain tactile feedback, living an interacting experience.

In the Metaverse, users are represented by *avatars*, digital representations of themselves. They allow users to interact with each other and navigate virtual environments, and they can be customized to reflect the user's personality, preferences, and identity (Ladd 2023).

These digital representations have different forms and can be humanoid or non-humanoid, looking realistic or stylized. Humanoid avatars look like real people, showing the same physical traits and having realistic facial expressions. They interact in a human way, and they can walk, run or jump. On the other hand, non-humanoid avatars can assume a variety of appearances, such as animals, monsters, robots, and other artificial life forms. They can also move and interact in more peculiar ways to their shape.

Users can modify the physical characteristics of their avatars, including their height, weight, skin tone, and facial features without any limits. This allows them to freely express themselves without any judgments. As in real life, avatars can wear different clothes and accessories, based on their preferences. They can also have unique abilities or powers, such as flying, teleportation, or super strength, depending on the platform.

1.1.3. Value in the Metaverse

In the Metaverse, a digital wallet is needed in order to handle money, pay for and sell things, and keep track of what the user owns.

One way of facilitating payments in the Metaverse is through the use of virtual currencies or tokens. They can be used to buy and sell virtual goods and services and can be exchanged for real-world currencies or other virtual currencies.

An example of virtual currencies is the cryptocurrency. Some platforms and virtual worlds, such as Decentraland and The Sandbox, have their own cryptocurrency that can be used for transactions within their respective ecosystems.

In the Metaverse, Blockchain, a system that secures the storage of digital data and demonstrates ownership, is present. Blockchain data can be transferred but cannot be replicated. A record of the transactions is recorded on the Blockchain when the customer purchases something that employs Blockchain technology, giving the user and the visited places ownership proof.

One type of item the customer might purchase in the Metaverse is an NFT (Non-Fungible Tokens) which is a way to represent and exchange ownership of virtual assets and its records are written to the Blockchain. NFTs are Blockchain-based digital assets that are intended to uniquely, irrevocably, and non-replicable identify a digital object's property through an identification token, or identification code (Kaczynski & Kominers 2021). Thanks to Blockchain technology, NFTs make transactions simpler and more reliable, and allow users to redistribute ownership among themselves. Due to this, the consumers gain more empowerment and become prosumers who play an active role and not more a passive one. Furthermore, they enable creators and developers to monetize their content and services in new and innovative ways. For example, virtual artists can create unique digital art pieces and sell them as NFTs, allowing buyers to own a one-of-a-kind digital asset. NFTs allow brands to improve Customer Brand Engagement.

When Gucci auctions Aria in April 2021, a four-minute video produced by director Floria Sigismondi and creative director Alessandro Michele and inspired by the brand's most recent collection, it makes history as the first major Luxury Fashion Firm to sell an NFT. Since then, several companies have become involved with NFTs, including Dolce & Gabbana, Balmain, Jimmy Choo, and Givenchy.

1.2. Luxury Fashion Brands in the Metaverse

During the twenty-first century, industries of all types, and in particular Luxury Fashion one, have adapted to the cutting-edge atmosphere of the digital world. With the ongoing 4.0 Industrial Revolution, many artists, such as fashion designers, are provided with a space where they can leverage their creative skills in ways that incorporate AI nanotechnology, biotech, and more.

Luxury Fashion Brands have recognized the potential of the Metaverse as a new platform for creativity, innovation, and customer engagement. The Metaverse offers brands the opportunity to create unique and immersive experiences that go beyond the physical limitations of traditional retail spaces.

Luxury Fashion Companies can build virtual worlds that highlight their products and brand history while interacting with customers in novel and interesting ways by utilizing Virtual Reality, Augmented Reality, and other immersive technologies. This chapter examines the opportunities and challenges that Luxury Fashion Brands meet in the Metaverse and how the new digital technologies impact this sector. Furthermore, to better explain how brands can exploit their presence in the Metaverse, some examples are given.

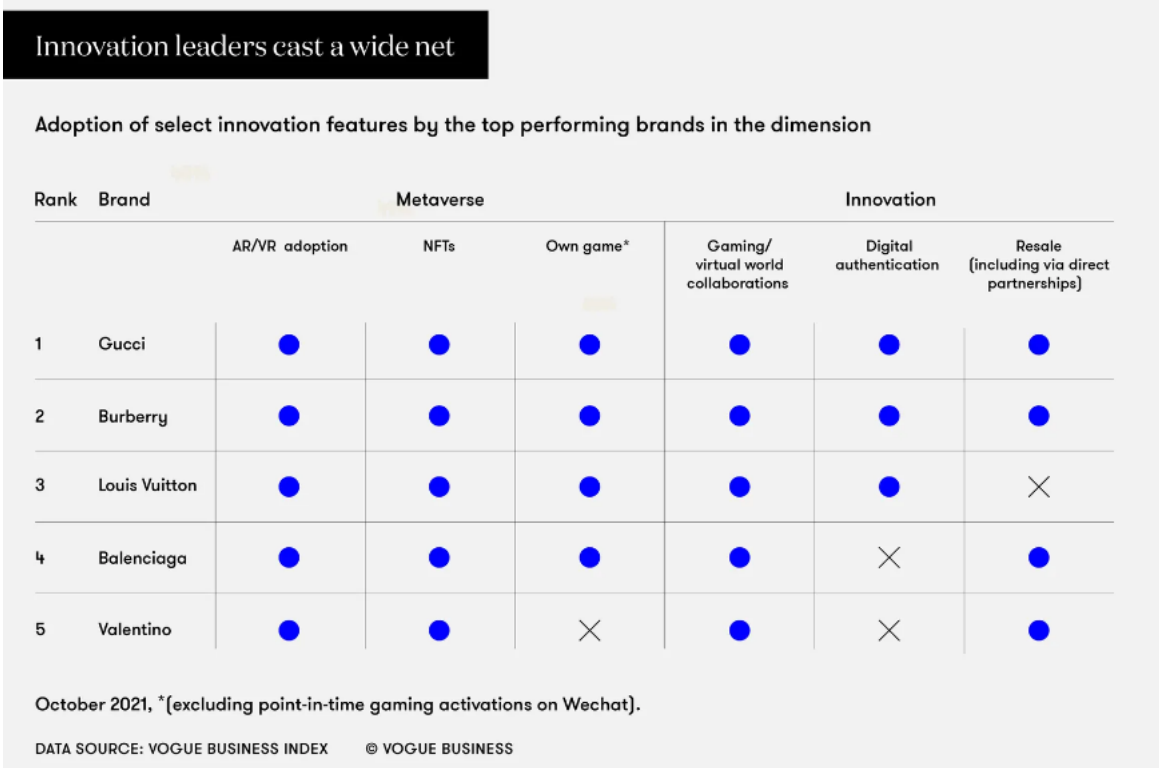
1.2.1. The Growth of Luxury Fashion Brands in the Metaverse

The majority of Luxury Fashion Brands have understood how important it is to be present within the Metaverse to survive within this sector. In fact, the world of NFTs and the world of Luxury share many points in common, such as exclusivity, scarcity, and creativity.

According to L'Atelier, 2.5 billion people are currently engaged in virtual world activity, and according to Nonfungible, trade-in NFTs reached a record high of over USD 17.7 billion in 2021. By 2030, analysts project that the market for Virtual Luxury Items will be worth $50 billion (Girod 2023).

On the Metaverse, some companies prioritize monetization, while others use it to concentrate on customer retention, looking at long-term relationships with the clients instead of quick money.

As shown in the image (Figure 1) (Vogue 2021), many brands are improving their presence in the Metaverse and are trying to be more innovative.



Innovation leaders cast a wide net

Adoption of select innovation features by the top performing brands in the dimension

Rank	Brand	Metaverse			Innovation		
		AR/VR adoption	NFTs	Own game*	Gaming/ virtual world collaborations	Digital authentication	Resale (including via direct partnerships)
1	Gucci	●	●	●	●	●	●
2	Burberry	●	●	●	●	●	●
3	Louis Vuitton	●	●	●	●	●	×
4	Balenciaga	●	●	●	●	×	●
5	Valentino	●	●	×	●	×	●

October 2021, *(excluding point-in-time gaming activations on Wechat).

DATA SOURCE: VOGUE BUSINESS INDEX © VOGUE BUSINESS

Figure 1. ***Brands in the Metaverse***

Source: Vogue Business Index 2021

It is crucial to highlight the fact that the Metaverse allows Luxury Fashion Brands to get closer to Generation Z[2], which seems to be the one who spends the most in this sector and an average of eight hours per day on screens (BoF & McKinsey 2022).

As highlighted in Bain's research (D'Arpizio & Levato 2022), Gen Y[3] and Gen Z have been solely responsible for the market's rise in 2022. In 2030, Gen Z and Gen Alpha[4] spending is expected to expand at a rate that is around three times faster than that of preceding generations, accounting for a third of the market. In part, this is due to a more impulsive attitude toward

[2] Generation Z refers to those born between 1997 and 2012

[3] Generation Y refers to those born between 1981 and 1996

[4] Generation Alpha refers to those born between 2013 and today

Luxury, with Gen Z consumers beginning to purchase Luxury Goods about three to five years earlier than Gen Y (at age 15 versus age 18 to 20), with Gen Alpha, predicted to act similarly. Gen Z is really close to the fashion world because it allows people to express themselves, which is a key point for this generation. With the advent of Luxury Fashion Brands in the Metaverse, users have the opportunity to *"express themselves in a virtual world with a virtual product, [through] a virtual persona"* (Triefus[5] 2022).

1.2.2. Opportunities for Luxury Fashion Brands in the Metaverse

Luxury Fashion Brands have always been at the forefront of creating unique and memorable experiences for their customers.
In the Metaverse, companies have the opportunity to improve experiential luxury and stimulate several consumers' senses.

Reaching a global audience is one of the key benefits. Virtual worlds are not constrained by geography or time zones like real-world stores are. This implies that brands can communicate with clients at any time of day, wherever in the world. Additionally, the Metaverse enables businesses to test out cutting-edge innovations and original concepts that might not be practical in the real world.

Luxury Fashion Brands can use the Metaverse to showcase their products in innovative ways and provide customers with a distinctive and immersive shopping experience by building virtual spaces that highlight their items. For instance, Virtual Runway Shows can be created in order to show customers to experience the latest collection in a 360-degree environment (McKinsey, 2022). This would give customers a sense of being present at the event, even if they are distant.

Furthermore, Luxury Fashion Firms can also better express their brand story. They may engage with customers more deeply by developing virtual landscapes that highlight their company values, heritage, and culture. For instance, a virtual museum that displays the company's

[5] Gucci chief Marketing officer

heritage and notable creations might be established. Due to this, emotional connection of customers to the brand would be strengthened.

Overall, the Metaverse presents a unique opportunity for Luxury Fashion Brands to create immersive and memorable experiences for their customers. The use of immersive technologies allows companies to interact with consumers in novel and interesting ways while also opening up new revenue streams.

1.2.3 Challenges for Luxury Fashion Brands in the Metaverse

While the Metaverse presents many exciting opportunities, it also poses several challenges that brands must address to succeed in this new platform. Technical complexity, brand integrity, and the need to balance virtual and physical experiences are some of the major difficulties. To create virtual worlds that are both aesthetically pleasing and practical, luxury fashion manufacturers must collaborate with developers and designers.

The difficulty of generating engaging virtual experiences on a technical level is one of the biggest obstacles facing high-end fashion firms. Expertise in fields like 3D modeling, animation, and virtual environment design is necessary to produce a high-quality virtual environment. To ensure that their virtual experiences live up to the high standards that customers have come to expect from Luxury Brands, it is needed to invest in the appropriate personnel and resources.

Maintaining the integrity of their brands in the Metaverse is another difficulty for Luxury Fashion Companies, that have invested decades in developing their reputation and brand image. Luxury Firms would find it challenging to maintain control over the authenticity of their items, for instance, in a virtual environment where anyone can make and sell virtual goods. In order to prevent their brand identity from being lost or damaged, brands need to discover measures to safeguard their intellectual property.

Furthermore, Luxury Fashion Brands need to find the right balance between virtual and physical experiences. The physical retail experience can not entirely be replaced by the Metaverse, despite the fact that it provides new potential for customer involvement and income generation. The consumer journey must be consistent across all touchpoints and this may require significant investment in infrastructure, logistics, and supply chain management.

Finally, brands present in the metaverse must put attention to cybersecurity concerns and the environmental impact of blockchain technology.

In conclusion, while the Metaverse presents exciting opportunities for Luxury Fashion Brands, it also poses several challenges that must be addressed to succeed in this new platform. Brands must invest in the right talent and resources to create immersive virtual experiences, protect their brand integrity, and find the right balance between virtual and physical experiences.

1.2.4. Consequences of the Luxury Fashion Brands' Presence in the Metaverse

The Metaverse can help to change mindsets, provide new links to the market, and provide solutions to some problems, such as the environmental and sustainability concerns facing the Luxury Fashion Sector.
In the era of exclusively digital fashion, this business innovation may involve consumer customization. A design strategy with a well-defined communication and interaction method can be used when the client can readily participate in the creation of the final product. The inclusion of customization can be combined with the production on demand for personalized clothing.

Additionally, a designer can develop digital clothing that is refined, chosen, tailored, adjusted, and moved directly to their digital inspirations for usage in the digital world. Then, this digital asset can be retrieved, revised, readjusted, and refined before being manufactured for the client to wear in the real world.

All of this enables the creation of a process that is solely digital and that may transform into a physical one as and when necessary. As a result, a supply chain that is more effective, sustainable, and flexible can be created.

The Fashion Industry as a whole might shift as a result of the Metaverse.
In fact, over the years, more people could decide to express themselves through luxury digital garments without having the need for the products in their physical. In this way, the Luxury Fashion Sector may only make items that are initially being offered digitally, shifting the mindset from mass production to mass personalization and deleting overstock. This enables resources and time savings, increasing in the productivity, and reduction in the logistics' effects. Furthermore, buyers can have access to the collection in the digital environment, in a digital showroom, and buy that collection without having to travel and save on the logistic footprint.

All of this can have an important impact on the brands' revenues. For instance, limited editions related to NFTs can be created in order to exploit the scarcity theory and make people feel the need of buying virtual items (BoF & McKinsey 2022).

1.3. Customer Brand Engagement of Luxury Fashion Brands in the Metaverse

Over the years, due to the development of a corporate vision that is no longer product-oriented, but increasingly customer-centric, the concept of Customer Engagement has become vital for the success of brands (Piancatelli et al. 2022). Due to the growth of social media and the consolidation of immersive virtual platforms that allow audiences to interact with brands on an increasing level, the idea of engagement has developed, making it increasingly appealing for businesses that base their positioning on co-creating value with their communities.

The new generations, such as Millennials and Gen Z, are digital-savvy and make full use of the functionalities provided by new technologies and digital environments. This allows them to live unique and exclusive experiences and build strong relationships with brands and their community.

As mentioned before, nowadays, the experiences in physical settings like stores have been replaced by experiences given by new technologies, and the consolidation of virtual dimensions, such as the Metaverse. Due to this, new ways to engage customers are emerging and the brands are creating “Metaverse as a Service”: digital stores and digital pop-up stores, which can be both "phygital" and totally virtual, offer creative experiences. Furthermore, a strong relationship with the consumers can be created due to, for instance, the use of gamification strategies. The consumers can receive rewards gifts, access to exclusive worlds, and other benefits for each answer to a digital solicitation.

1.3.1. CBE Tools of Luxury Fashion Brands in the Metaverse

Customer Brand Engagement of Luxury Fashion Brands in the Metaverse can be a unique and exciting opportunity to showcase creativity, innovation, and exclusivity. As explained in the next sections, several tools are used by companies in order to engage customers and develop a stronger relationship with them.

1.3.1.1. Virtual Showrooms

An example of a CBE tool is the creation of Virtual Showrooms that emulate their physical stores. These spaces are highly interactive, allowing customers to explore products in 3D and a variety of contexts.

Virtual Showrooms are particularly useful for Luxury Fashion Brands that want to showcase their collections in a way that is more immersive and engaging than traditional e-commerce websites. By using new digital technologies, brands can create an environment that feels more like a physical store, allowing customers to see and experience products in a more tactile way.

1.3.1.2. Virtual Fashion Shows

Furthermore, also Virtual Fashion Shows, that simulate traditional ones, can be designed exclusively for the Metaverse. This is a unique opportunity for brands to acquire new customers. It can be considered also a social revolution since these types of events are not more accessible only to a select group of industry professionals.

In addition, Virtual Runway Shows can also be highly personalized. Brands can use data to create bespoke experiences for individual customers, tailoring the show to their preferences and interests. This can help to create a deeper level of engagement with customers.

Finally, this tool is highly shareable. Customers can share images and videos from the show on social media, which can help to increase brand awareness and reach a wider audience. This can be particularly effective for Luxury Fashion Brands, which rely heavily on word-of-mouth marketing and social proof.

For instance, during the first Virtual Fashion Week in Decentraland in 2022, some maisons, such as Etro and Dolce&Gabbana, made the decision to use a conventional fashion show format. Other brands, such as Philipp Plein, which spent $1,4 million to purchase a retail space on Decentraland, participated in the Mvfw with a limited-edition mini collection (for a total of six total looks) of virtual clothing and accessories, with prices ranging from €1.500 to €15,000,000 (Casadei 2022). After the fashion runway, the brand engaged its customers organizing a virtual after-party.

1.3.1.3. Co-creation and gamification

Co-creation is another tool used by Luxury Fashion Brands to engage with customers in the Metaverse. It plays a central role in building brand loyalty and involving consumers in the creative process. In fact, they can help brands in co-creating and customizing luxury fashion virtual products, such as clothing, accessories, or even virtual storefronts.
This allows companies to create deeper relationships with their clients, giving them personalized products that meet their tastes and preferences.

Another successful Customer Brand Engagement tool is the use of gamification. According to Vogue Business (2021), 53% of fashion brands are investing in the $300bn gaming sector, experimenting with filters, digital avatars, and virtual stores. Only 17% of luxury consumers worldwide express excitement about brands' gamification efforts, but younger consumers (25%) and Chinese consumers (35%) express much greater enthusiasm. A whopping 48% of Chinese consumers of luxury goods play video games.
The in-game brand partnership involves the collaboration with video game developers to create branded content that appears within a game world. This can include virtual items like clothing, accessories, or even branded in-game experiences.
In-game brand partnerships can be highly effective for Luxury Fashion Brands, as they allow them to tap into the huge and highly engaged audiences of popular video games. This can help to increase brand awareness, drive sales, and create deeper engagement with customers.
As shown in Figure 2 (Vogue 2021), during 2021, several games and NFT projects have been created in order to establish a strong relationship with the customers:

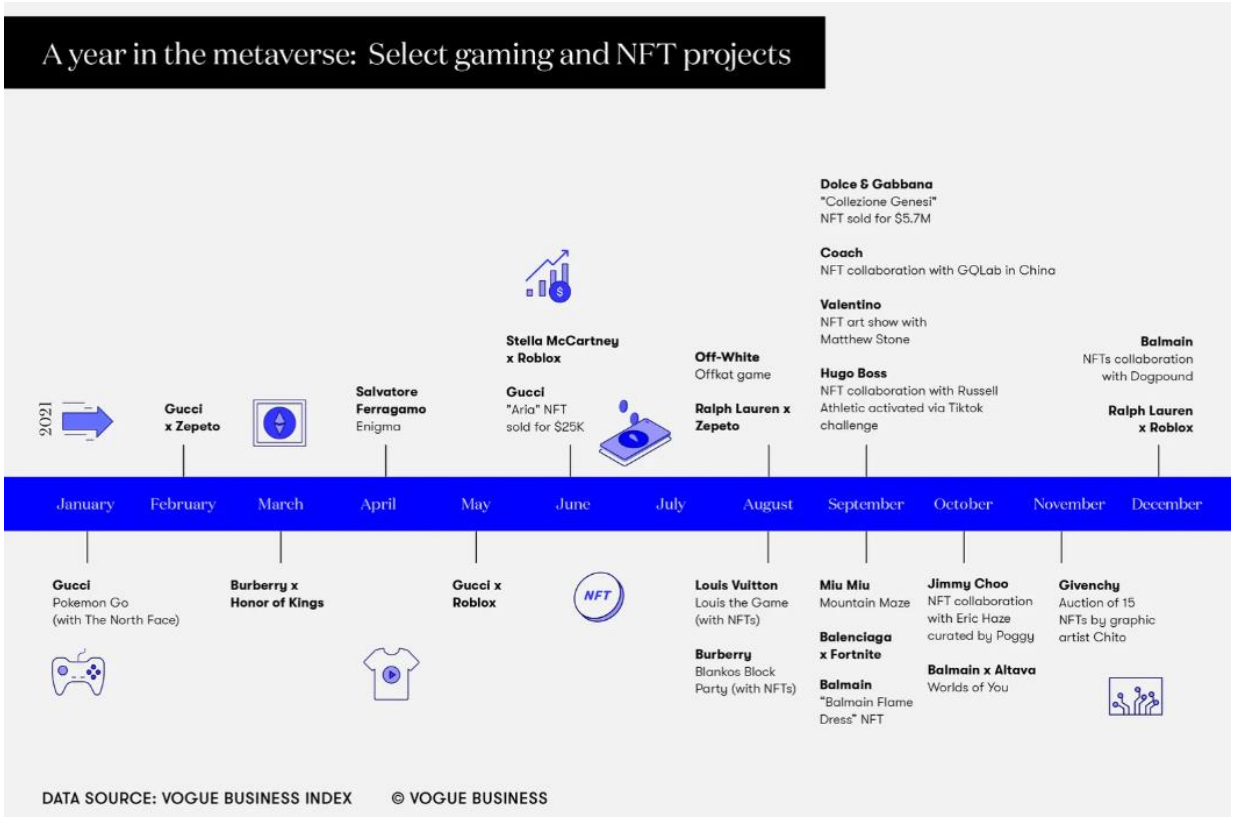


Figure 2. ***Games and NFT projects***

Source: Vogue Business Index 2021

1.3.2. Examples of Luxury Fashion Brands in the Metaverse

1.3.2.1. Gucci

Gucci, the Italian Luxury Fashion Brand, has been at the forefront of the Metaverse trend.
The Gucci Garden Experience is launched by Gucci in 2019 as a virtual exhibition and store within the popular mobile game "Zepeto". The virtual space is designed to resemble a Gucci Garden, with interactive elements such as a virtual fountain, a maze, and a gallery of Gucci-inspired artwork. Users can create their own avatars and explore the virtual space and can also purchase virtual Gucci items such as digital accessories and clothing for their avatars.
The Gucci Garden Experience is a successful example of a Luxury Fashion Brand entering the Metaverse because it creates an immersive and interactive virtual environment that reflects the

brand's aesthetic and values. By partnering with a popular mobile game, Gucci has also been able to reach a younger, tech-savvy audience that may not have been familiar with the brand before. In May 2021, Gucci opens a virtual boutique in Roblox, a popular gaming platform. The boutique features limited-edition digital items, including a virtual Gucci Dionysus Bag, a Gucci Garden hat, and a pair of sneakers. The virtual boutique also includes a gaming experience where players can explore a garden-inspired world and collect virtual items. The collaboration with Roblox has been a success, registering more than 19 million visitors (BoF & McKinsey 2022), with the virtual items selling out within hours of their release.

1.3.2.2 Louis Vuitton

Louis Vuitton, the French Luxury Fashion Brand, has also explored the Metaverse.
Louis Vuitton's collaboration with the popular online game League of Legends in 2019 includes a limited-edition line of virtual clothing and accessories for in-game characters, as well as a virtual event and short film featuring virtual versions of Louis Vuitton's creative director and League of Legends' character Qiyana.
This collaboration has been successful and has helped to establish Louis Vuitton as a leader in this emerging space.
In April 2021, the brand launches a mobile game called Louis: The Game. The game is set in a virtual world that features elements of the Louis Vuitton brand, including the famous LV logo and iconic designs. The game allows users to collect virtual items and build their own virtual fashion space. The game has been sponsored by many influencers who have participated in a significant social media campaign.

1.3.2.3 Balenciaga

Balenciaga, the Spanish Luxury Fashion Brand, has taken a different approach to the Metaverse. In December 2020, the brand launches a virtual reality video game called Afterworld: The Age of Tomorrow. The game is set in a post-apocalyptic world where players must navigate a series of challenges and obstacles to reach the end. The game features virtual versions of Balenciaga

products, including clothing and accessories, are designed to showcase the brand's futuristic aesthetic.

The Balenciaga x Fortnite collaboration has been successful because it has tapped into the growing trend of virtual fashion and the popularity of Fortnite among young audiences. By creating a virtual store within the game, Balenciaga has been able to reach a highly engaged audience of gamers who were interested in purchasing virtual fashion items for their in-game avatars.

1.3.3.4. Burberry

Burberry's virtual experience, launched in 2020, is a virtual store and immersive experience that allows users to explore a digital version of Burberry's latest collections and iconic items. The virtual experience includes interactive elements such as a rain room, a hologram display, and a personalized virtual styling service.

The Burberry Virtual Experience has been successful because it has created a high-quality, immersive virtual environment that accurately reflects the Burberry brand's aesthetic and values. By offering interactive elements, Burberry has also been able to create a unique and engaging virtual experience that kept users coming back.

CHAPTER 2 THEORETICAL FRAMEWORK

2.1. Literature Review

Given the rapid emergence of the importance of the Metaverse and the growing importance of the presence of Luxury Fashion Houses within it to remain competitive in the market, it seems essential to understand the drivers that lead consumers to interact with brands in virtual reality. In this chapter, the existing literature review explores to provide an in-depth study of the concept of Customer Brand Engagement, its dimensions, and its importance for the growth of Luxury Fashion Brands. Furthermore, Online Customer Brand Engagement in the Metaverse is deeply analysed, presenting the antecedents and the consequences of it, and comparing the different theories. In the last section, the Brand Engagement strategies used by Fashion Companies in the Metaverse are explored.

Although the research both on the importance of the presence of Luxury Companies in the Metaverse and on the bond they can establish with a user is constantly increasing, it is evident that there is a lack of studies regarding the antecedents of Customer Brand Engagement of Luxury Fashion Houses in the Metaverse.

2.1.1. Customer Brand Engagement

The Fashion Industry is highly competitive, with numerous brands vying for the attention of consumers. In such a competitive environment, it is essential for Fashion Companies to build strong emotional relationships with their customers. In fact, although Consumer Brand Engagement (CBE) is a recent concept in the marketing literature, it is of considerable importance to highlight how it is increasingly assuming considerable importance within this area of study (Haumann et al. 2015, Pansari and Kumar 2017, Precourt 2016). Even if there is limited empirical research about the engagement processes within Luxury Fashion Brands (Prentice and Loureiro 2018, Tynan et al. 2010), it has been found that, due to the speed of change within this sector, branding of luxury fashion goods is more complex than other sectors (Fionda and Moore 2009).

2.1.1.1. The Concept and Definition of Customer Brand Engagement (CBE)

The term "*SD logic*" refers to the development of the conventional marketing approach, which focuses on generating value through the production of goods and services.
While SD logic considers the services provided as a basic activity for the production and exchange of value, it looks for generating value through the interactions between service providers and customers. Instead of being simply produced by service providers in the conventional marketing strategy, due to this new approach, value is co-created by service providers and customers through interaction and collaboration.
Consumers begin to play an active role and are no longer a passive one. They act as prosumers and "*therefore [they] are not merely recipients, nor co-producers as in the rationalistic sense, but co-creators of their service experience*" (Schembri, 2006).
The SD logic has significant implications for the design and management of services, encouraging businesses to adopt a customer-centric approach and increase interaction and engagement with them.

The SD logic provides a conceptual foundation for the development of the CBE concept. In fact, Customer Brand Engagement is the process of building a strong emotional connection between a brand and its customers. It involves engaging with customers at a deeper level than just selling them products or services. It has crucial importance for companies since it influences brand referrals, sales growth, companies' profitability, and customer co-creation (Bijmolt et al. 2010, Nambisan & Baron 2007, Sawhney et al. 2005).
Analyzing the existing literature, it is evident that the term "Consumer/Customer Engagement" only began to emerge around 2006. CE has been defined differently by various scholars and a consensus has still not been reached (Dijkmans et al. 2015, Verhoef et al. 2010).

Definition of CBE	**Dimensionality**
"It is a higher-order construct, and it comprises four components, namely, vigor, dedication, absorption, and interaction" (Patterson et al. 2006).	Multidimensional: absorption, dedication, vigor/interaction

"It refers to the degree and depth of brand-focused interactions a customer chooses to perform" (Van Doorn et al. 2010).	Unidimensional: behavioural dimension
"It is an overarching construct that captures this non-transactional customer behaviour" (Verhoef et al. 2010).	Unidimensional: behavioural dimension.
"It is an act of co-creation that deepens the customer's emotional, cognitive, and behavioral connection with the brand" (Kumar et al. 2010).	Multidimensional: cognitive, behavioural, and emotional dimensions.
"It is a multidimensional concept subject to a context- and/or stakeholder-specific expression of relevant cognitive, emotional and/or behavioural dimensions" (Hollebeck et al. 2011).	Multidimensional: cognitive, behavioural, and emotional dimensions.
"It is a psychological state that occurs by virtue of interactive, co-creative customer experiences with a focal agent/object, which are cognitive, emotional, and behavioural in nature" (Brodie et al. 2013).	Multidimensional: cognitive, behavioural, and emotional dimensions.
"It is a cognitive, emotional and behavioural process, which occurs when consumers are motivated to build and maintain relationships with brands, and involve themselves in various brand-related activities beyond the point of purchase" (Dwivedi 2015).	Multidimensional: cognitive, behavioural, and emotional dimensions.
"It is a psychological state that occurs when customers interact with a company and feel a sense of connection with the company and its products or services" (Erdogmus et al. 2015).	Multidimensional: cognitive, behavioural, and emotional dimensions.

"It is the customer's behavioral manifestation towards a brand or firm, beyond purchase, resulting from motivational drivers" (Harrigan et al. 2017).	Multidimensional: cognitive and emotional dimensions.
"It is a customer's cognitive, emotional, and behavioral interaction with a firm that facilitates a value-creating customer experience through multiple touchpoints, over time, and across channels, leading to brand loyalty and positive word-of-mouth communication" (Chen et al. 2020).	Multidimensional: cognitive, behavioural and emotional dimensions.

Table 2. *CBE Definitions*

The table (n. 2) above resumes (in chronological order) some of the different definitions and dimensions of Customer Engagement that have been found in the analyzed previous research. Considering that many different definitions have emerged over the years, it is needed analyzing some of them, better understanding the main touchpoints and differences.

As mentioned before, the very initial studies about Customer Engagement are performed at the beginning of the twenty-first century by the scholars Patterson, Yu, De Ruyter (2006**)**.
They state that "*Customer Engagement is a higher-order construct, and it comprises of four components, namely, vigor, dedication, absorption, and interaction* (Patterson et al. 2006).
The level of vigor is exhibited when a customer interacts with service personnel, an organization, a brand, or other customers and it also refers to the readiness to put forth the necessary time and effort in one's job.
Dedication is the customer's sense of belonging as a customer and he is entirely focused, content, and thoroughly engrossed while doing his function. Absorption refers to the moment in which the consumer is described as being entirely focused, content, and thoroughly engrossed while doing his function. Interaction refers to the various interactions between the customer and the brand.

Following this, Van Doorn et al. (2010) state that "*Customer Engagement refers to the degree and depth of brand-focused interactions a customer chooses to perform*". It is also claimed that CBE is "*the behavior [that] goes beyond transactions and may be specifically defined as a customer's behavioral manifestations that have a brand or firm focus, beyond purchase, resulting from motivational drivers*".
This definition has a particular focus on behaviours that go beyond transactions and purchases, such as word-of-mouth (WOM) and reviews. This definition focuses more on the nature of the customer's interactions with the firm and emphasizes the role of the customer's investment and resource allocation in shaping the level and type of engagement.

On the other hand, Kumar et al. (2010), define customer engagement as "*customers' behavioral manifestations toward brands or firms, beyond purchase, resulting from motivational drivers. It is an act of co-creation that deepens the customer's emotional, cognitive, and behavioral connection with the brand, resulting in mutually beneficial value creation for the customer and the firm*".
This definition emphasizes the idea that Customer Engagement goes beyond just making a purchase and involves an ongoing, active relationship between the customer and the brand. It also highlights the importance of understanding the customer's motivations for engaging with the brand and the potential for engagement to create value for both the customer and the firm.

Overall, the two definitions share some similarities, such as the emphasis on the importance of customer interaction with the firm and the idea that engagement involves an ongoing relationship. However, the definitions differ in terms of the specific aspects of dimensions taken into account: in the first one (Van Doorn et al. 2010) only the behavioural dimension is considered, while in the second one (Kumar et al. 2010), the scholar refers to the cognitive, behavioural and emotional dimensions.

Later, Hollebeck et al. (2011), analyzing the previous literature review and starting from five fundamental propositions, develop a general definition of CE that can be applied across multiple situations.
"*Customer engagement (CE) is a motivational state that occurs by virtue of interactive co-creative, customer experiences with a focal agent/object (e.g. a brand) in focal service*

relationships. It occurs under a specific set of context-dependent conditions generating differing CE levels; and exists as a dynamic, iterative process of relational exchange that co-creates value. CE plays a central role in a nomological network governing relational exchange in which other relational concepts are antecedents and/or consequences in iterative CE processes. It is a multidimensional concept subject to a context- and/or stakeholder-specific expression of relevant cognitive, emotional and/or behavioral dimensions".

This definition shares some similarities with the definitions proposed by Kumar et al. (2010) and Van Doorn et al. (2010), but also introduces some new elements.

Hollebeek et al.'s definition of Customer Brand Engagement emphasizes the cognitive, emotional, and behavioral processes that underlie engagement, and highlights the active and participatory role that customers play in co-creating value with the brand.

2.1.1.2. The dimensions of the CBE

As illustrated in the previous section, three consumer engagement dimensions can be identified: cognitive, emotional, and behavioural. The degree to which a customer is prepared to wield these dimensions are respectively immersion, passion, and activation.

The first one, the cognitive dimension (thoughts), is the extent to which the customer is interested, engrossed, focused, vehement, and contemplated with a brand and the interactions with their customers (Hollebeek 2011). This dimension is related to *immersion* which can be defined as the "*customer's level of brand-related concentration in particular brand interactions*" (Hollebeek 2011). Lately, the cognitive dimension is also connected to *cognitive processing* which is the degree to which a customer elaborates on and processes brand-related ideas during a specific consumer/brand interaction.

The emotional dimension (affection) is an emotional subconscious construct connected to a condition of emotional activity known as the inspiration or pride induced by and related to the engagement object. It is related to *passion* which can be defined as "*the degree of a customer's positive brand-related affect in particular brand interactions*" (Hollebeek 2011). Customers who feel a strong emotional connection to a brand are more likely to engage with it and remain loyal to it.

The last one, the behavioural dimension (action), is a state of consumer behaviour related to the object of engagement that is interpreted as the effort and energy put forth for an interaction. Behavioural engagement refers to the customer's actual behaviours toward the brand, such as their willingness to recommend the brand to others, their frequency of purchase, and their level of involvement in the brand's online or offline communities. The level of energy, effort and/or time spent on a brand in particular brand interactions can be defined as *activation*.

2.1.2. Online CBE

Online Customer Brand Engagement refers to the interaction and relationship between a customer and a brand that takes place in the digital space. It is the extent to which customers actively engage with a brand online, such as by sharing brand-related content, participating in brand communities, and providing feedback to the brand. With the increasing use of the internet and social media, many customers are engaging with brands online.

Compared to traditional views of Costumer Brand Engagement, online brand interactions are viewed as consisting of greater cognitive processing, heightened relevance and emotional experiences (Mollen & Wilson 2010), and greater advertising effectiveness (Calder et al. 2009).

2.1.2.1. Antecedents and Consequences

Involvement and interactivity can be considered necessary antecedents for the development of a high level of Online Customer Brand Engagement.

Involvement is defined as the level of interest and relevance attributed to a specific object (brand) based on objectives, values, and perception of the self (Mittal 1995). By understanding the level of consumer involvement, marketers can better tailor their marketing strategies to appeal to consumers and influence their purchasing decisions.

Four different scales for measuring involvement are suggested (Mittal 1995):

a. Personal Involvement Inventory (PII): this scale gauges the degree of personal relevance and importance consumers place on a product, based on their self-reported attitudes and feelings.
b. Product Specific Involvement (PSI): this scale gauges consumers' level of involvement with a specific product based on their knowledge of the product, their familiarity with it, their prior experiences, and the quantity of information they have sought out about it.
c. Message Involvement (MI): based on consumers' interest in and attention to the message, as well as their cognitive processing and appraisal of the message, this scale gauges their level of participation with a specific marketing message.

d. Situational Involvement (SI): using a scale based on the perceived risk, significance, and uncertainty surrounding the choice, this instrument gauges the degree of consumers' involvement in a given purchasing transaction.

Brand involvement can have cognitive, affective, and motivational dimensions, but it is not characterized by behavioural ones (Harrigan et al. 2018).

At the cognitive level, higher brand involvement is likely to result in greater levels of engagement, where perceptions of a brand's interest, relevance, or need would be correlated with how much a user of a social media platform thinks about the brand (Harrigan et al. 2018). Concerning the affective dimension, the time spent by a user enjoying using a social media platform is related to how intriguing, alluring, or engaging they find the brand to be (Harrigan et Al. 2018, Gummerus et al. 2012). According to the activation level of engagement, the degree to which a customer would choose to participate with one social media platform over others depends on how vital or necessary they perceive a brand to be (Pansari & Kumar 2017).

The other antecedent (France et al. 2016, Gligor & Bozkurt 2021), interactivity, refers to the degree of interaction and communication that takes place between users and the content of a website or online platform (Wu, 2006). It takes into account a genuine type of connection between the consumer and the brand rather than a simple relationship.

Two different levels of brand interactivity are identified (France et al. 2016): (i) the brand's technical facilitation of interaction, (ii) a sincere desire for connection. Furthermore, if the brand offers more customized relationships, it will be seen as more interactive (Sawhney et al. 2005). Previous research investigate the relationship between brand interactivity and brand engagement, finding a positive correlation between the two (France et al. 2016).

The consequences of these two dimensions are better experiences, commitment, brand loyalty, and emotional connection.

Brand experience refers to the overall impression that a consumer has of a brand, based on their interactions with the brand across different touchpoints and channels. It "*occurs when a consumer connects with a brand on a sensory, affective, and cognitive level"* (Aaker 1997). A positive brand experience can be the result of high levels of involvement and interactivity, as consumers engage with the brand through various interactive features and experiences, such as

personalized recommendations, user-generated content, or immersive product displays. A positive brand experience can lead to increased customer satisfaction and loyalty.

Commitment is the emotional and cognitive *"attachment an individual has to an organization, and it is characterized by a sense of loyalty, pride, and identification with the organization"* (Meyer & Allen 1991). Higher levels of involvement and interactivity can lead to increase commitment, as consumers engage more deeply with the brand and become more emotionally invested in its values, products, and services.

Brand loyalty "*is the result of the consumer's perception that the brand offers a set of unique and valuable attributes that are not available elsewhere*" (Keller 1993). Higher levels of involvement and interactivity can lead to increased brand loyalty, as consumers become more attached to the brand and its products or services and are more likely to continue to purchase from the brand in the future.

"*Emotions are central to the meaning of consumption, and consumers form emotional bonds with brands through their interactions and experiences with them*" (Park et al. 2010). Higher levels of involvement and interactivity can lead to stronger emotional connections, as consumers engage more deeply with the brand and its values and form a more personal relationship with the brand.

2.1.2.2. Online CBE in the Metaverse

By using virtual technologies, businesses can provide users with a unique and engaging experience that encourages them to interact with the brand in new and exciting ways. As the Metaverse grows in popularity, brands are increasingly exploring opportunities to engage with customers within these virtual environments.

Customer Engagement can be divided into three different types which can be enhanced thanks to the new virtual technologies, depending on the type of relationship referred to (Scholz et al. 2016):

a. User-brand engagement: it refers to interactions between individual users and inanimate objects. Fun, entertaining, and memorable experiences that encourage users to share their experiences with others. It is crucial to create a seamless and intuitive user

experience to maximize user-brand engagement. Several strategies can be used in order to encourage engagement, such as creating compelling content, offering incentives, providing personalized experiences, and incentivizing customer participation. This can help in creating a more dynamic customer experience and create a strong relationship with the brand.

b. User-user engagement: it refers to interactions between individual users. An improvement in brand loyalty can be achieved, by creating online communities where users can connect, share experiences, and collaborate. This could help in better discovering and gathering data about customer preferences.

   All of this is possible only if a supportive and inclusive environment, where users encourage positive interaction, is created.

c. User-bystander engagement: it refers to the impact that an immersive experience using virtual technology can have on those who are not directly involved in the experience, but who are observing it from a distance. The new technologies can be used to create a sense of curiosity and excitement around the brand, capturing the attention of those who are not interacting with them.

   Collaborations with influencers or other brands can help in reaching a wider audience and creating amazing content.

2.1.2.3. Impact of Virtual Worlds on Customer Brand Engagement

Virtual worlds can be effective at enhancing Customer Brand Engagement when they provided a sense of social connection and community among participants. Even if there is a lack of research about how Luxury Fashion Brands can influence CBE in the Metaverse, several theories and models are analysed in order to gain a better understanding of it.

a. Embodied Social Presence Theory

The Social Presence Theory suggests that the degree to which a person feels present in a virtual environment affects their emotional responses and behaviours in that environment.

From this definition, it is generated also the concept of Embodied Social Presence Theory which focuses on the role of avatars as mediators of social interaction in the virtual world (Mennecke

et al. 2010). The occurrence of particular acts of communication and interaction in the setting of embodiment produces a sense of presence that is derived from human cognition and comparable to actual encounters in the real world (Wang et al. 2016).

The Embodied Social Presence is made out of four different stages (Mennecke et al. 2010): (i) Recognition of the other: looking at the other avatar's digital depiction as it interacts with objects in the shared space, (ii) Recognition of Digital Self: the user develops a view of their own avatar as their digital self, (iii) Collaborative Engagement: due to the cognitive dimension, the users interact through the avatars, (iv) Appraisal of the Real Other: formation of some level of evaluation and comprehension of the other as an individual, (v) Reflection on and Appraisal of the Self: an actor develops perceptions of his virtual self while engaging in interactions with the avatar of another actor.

In virtual environments, people use avatars that represent themselves and use bodily movements to communicate with others. These bodily movements, such as gestures, facial expressions, and even the direction of gaze, can convey important social cues and affect how people perceive and interact with each other. Furthermore, the availability and selective temporal persistence of the Metaverse allow individuals to recognize them as a social context where joining activities and interacting with the context, feeling *present* in it. Creating a more immersive and engaging experience, Customer Brand Engagement can be influenced.

b. Flow Theory

According to the Flow Theory, individuals experience their highest level of enjoyment, creativity, and productivity (Moneta & Csikszentmihalyi 1996) when they are in a state of "flow", which is characterized by complete absorption in an activity, a feeling of control and mastery, and a lack of self-awareness or concern about the passage of time (Csikszentmihalyi 1975).

As highlighted by Csikszentmihalyi, it is of crucial importance that tasks are not so difficult and match an individual's skills and abilities. Only in this way, gamers feel challenged and rewarded. They enter in a state of flow, better engaging with the brands and performing at their highest level. Due to the features of the Metaverse and the use of avatars and holograms, the users have the possibility to feel completely immersed in the experience (Dwivedi et al. 2022). If the tasks are too difficult, users can become frustrated and anxious; if the task is too easy, they may become bored and disengaged.

Due to the features of the Metaverse and the use of avatars and holograms, the users have the possibility to feel completely immersed in the experience (Dwivedi et al. 2022).

c. Uses & Gratification Theory

The Uses & Gratification proposes that people use media for different reasons, such as information seeking, entertainment, or social interaction (Herzog 2000, McQuail 2000). Overall, the Uses and Gratifications Theory emphasizes the importance of understanding the needs and wants of consumers in order to create media content that will satisfy those needs (Blumler & Katz 1974).

In the Metaverse, individuals may have a wide range of motivations for their media consumption (Gallego et al. 2016, Gan & Li 2018, Mäntymäki 2014). For example, they may use the Metaverse for entertainment purposes, such as gaming, virtual socializing, or experiencing new forms of immersive media. They may also use it for information seeking, such as accessing news or educational content, or for personal identity reasons, such as exploring different aspects of their digital persona or avatar. The Metaverse may also provide opportunities for escapism, as individuals can enter into new digital environments and engage with alternate realities that offer a break from their everyday lives. Additionally, it may offer socialization opportunities, as individuals can interact with other users in the digital space and create communities based on shared interests and hobbies.

As the digital world continues to evolve, the motivations and uses for media consumption will continue to expand and diversify. By understanding the various needs and desires that drive Metaverse use, developers and creators can better design and tailor their immersive experiences to meet the needs of their users. For example, if users are primarily motivated by social gratifications, a brand might create activities or events in the virtual world that encourage social interaction among users. If users are motivated by entertainment gratifications, a brand might create fun and engaging activities that allow users to relax and have fun.

2.1.3. Online CBE in the Luxury Fashion Industry

Luxury Fashion Brands are those which extend beyond usefulness, focusing on the status and image of an individual (Nueno and Quelch 1998) and their products are characterized by some key points such as exclusivity, premium prices, image, and status that make them more desirable for reasons other than function (Jackson 2004).

As mentioned before, the level of competition has increased in the luxury fashion industry, partially due to the newly emerged technology. For these reasons, it is crucial that a great variety of strategies is used in order to interact with the target market. Fashion marketers operating in the industry are figuring out how to adapt to the new business climate while having to deal with a lot of difficulties and obstacles related to modern technology and information.

Fashion marketers must engage with their audiences, both offline and online, to survive in today's fiercely competitive environment (Moreno-Munoz et al., 2016). In the following sections, some of the most used luxury fashion strategies to engage customers, such as gamification and co-creation, are analyzed.

2.1.3.1. Gamification

In the last two years, Luxury Brands have heavily invested in digital initiatives such as gamification (Oliveira et al., cited in Jain et al. 2022). Due to this phenomenon, companies can create customized and unique experiences for their customers (Husain et al., cited in Jain et. al. 2022).

The existing literature shows a positive correlation between gamification and brand engagement (Berger et al. 2017, Harwood & Garry 2015, Robson et al. 2016). Particularly, while Berger et al. (2017) have found that highly interactive and optimally challenging gamified interactions improve the emotional and cognitive dimensions of brand engagement, Harwood & Garry (2015) and Robeson et al. (2016) take into account all three dimensions (cognitive, emotional, behavioural).

Gamification refers to a design strategy that seeks to replicate enjoyable experiences similar to those seen in games in order to influence the user’s cognitive and behavioural processes

(Huotari & Hamari 2017, Hamari 2019) increasing his activity and retention (Deterding et al. 2011).

Three main categories of game mechanics and game-design-related gameplay motivations are typically distinguished: immersion, achievement, and social-related (Hamari & Tunnanen 2014, Koivisto & Hamari 2019, Yee et al. 2012).

Immersion, which can be positively associated with Emotional Brand Engagement, refers to the desire to become fully absorbed in a task or activity due to the use of some tools such as avatars. Gamification can enhance immersion by providing users with a sense of presence, control, and flow, which can increase their enjoyment and motivation to continue participating. According to the Flow Theory explained in the previous section, during the game, the user loses track of time and becomes fully immersed in the experience, spending more time in the Metaverse. By providing challenges and rewards, Luxury Fashion Brands can incentivize customers to engage with the brand and explore the virtual environment.

Achievement, which is associated with Cognitive Brand Engagement, refers to the desire to accomplish goals, receive recognition, and attain a sense of mastery. Gamification can promote achievement by providing users with clear objectives, feedback, and rewards that signal progress and accomplishment.

Social refers to the desire to connect with others, build relationships, and participate in social activities. Social gamification can leverage social networks, collaboration, and competition to enhance engagement and motivation, as well as foster a sense of community and belonging.

2.1.3.2. Co-creation

As mentioned before, due to the new experiences allowed by the new technologies, customers have the opportunity to collaborate and co-create with brands, assuming the role of prosumers (Prahaland & Ramaswamy 2004, Payne et al. 2009, Vargo & Lusch, 2004), and living innovative experience (Higgins & Scholer 2009, Lee et al. 2015).

Co-creation can be defined as "*the active, creative and social process, based on collaboration between producers and users, that is initiated by the firm to generate value for customers*" (Prahalad 2004). In order to involve customers in this process, gamified platforms are created by Luxury Brands.

Three stages can be identified in the co-creation in the metaverse (Zhang et al. 2021):

a. Co-creation community building: the first stage involves building a co-creation community in the Metaverse. This can be done by creating virtual spaces where users can interact and collaborate, hosting virtual events, and providing tools and resources for co-creation.
b. Co-design and development: the second stage involves co-designing and developing virtual content in the Metaverse. This can involve collaborative brainstorming sessions, virtual prototyping and testing, and refining the content based on user feedback.
c. Co-distribution and usage: the final stage involves co-distributing and using virtual content in the Metaverse, such as making virtual content available to other users, integrating it into virtual experiences, and incorporating user feedback to improve the content over time.

One of the primary benefits of co-creation is that it can empower users to be active participants in the creation of digital content rather than passive consumers. For example, users can collaborate on the creation of virtual environments, 3D models, or avatars, and thus contribute to a more diverse and inclusive metaverse.

Furthermore, co-creation in the Metaverse can also help companies and organizations in understanding their customers' needs and preferences better.

By involving customers in co-creation and open innovation activities, companies can gain valuable insights and feedback, and customers can feel more invested in and loyal to the product (Prahalad 2004). Overall, "*co-creation is a key factor that drives consumers to engage with luxury fashion brands*" (Nyadzayo & Rossi, 2019) since it can foster a sense of community, creativity, and ownership among users. It can lead to more engaging and personalized experiences that better reflect the needs and desires of the diverse user base of the metaverse.

2.2. Knowledge Gap

Although research in the fields of both Customer Brand Engagement and the Metaverse is increasing, only a few researchers have already investigated the reasons that lead people to engage with Luxury Fashion Brands in the digital world. Given the recent emergence of the Metaverse and the use of digital tools to increase Customer Brand Engagement, there is not an extensive nor comprehensive volume of research on this topic. Due to this, it appears to be essential to investigate the antecedents of this phenomenon and how companies can exploit them.

First of all, the majority of the studies investigates the meaning of CBE giving multiple definitions and dimensions (Brodie et al. 2013, Chen et al. 2020, Dwivedi 2015, Erdogmus & Tatar 2015, Harrigan et al. 2017, Hollebeck et al. 2011, Kumar et al. 2010, Patterson et al. 2006, Van Doorn et al. 2010, Verhoef et al. 2010). Over the years, some research has focused on comparing the traditional views of Customer Brand Engagement and Online Brand Interactions (Calder et al. 2009, Mollen & Wilson 2010, Scholz et al. 2016), and relatively few studies investigates CBE importance in the Luxury Fashion Industry (Jain et al. 2022, Moreno-Munoz et al., 2016).

Secondly, according to extensive literature analysis, a few authors have developed theories and models that allow one to better understand the impact of virtual worlds on Brand Engagement, such as the Embodied Social Presence Theory (Mennecke et al. 2010, Wang et al. 2016), the Flow Theory (Csikszentmihalyi 1975, Dwivedi et al. 2022, Moneta & Csikszentmihalyi 1996) and the Uses & Gratification Theory (Blumler & Katz 1974, Gallego et al. 2016, Gan & Li 2018, Herzog 2000, Mäntymäki 2014, McQuail 2000), but none of them have specifically focused on the Luxury Fashion Industry.

Lastly, some scholars have studied the antecedents (France et al. 2016, Gligor & Bozkurt 2021, Gummerus et al. 2012, Harrigan et al. 2018, Mittal 1995, Pansari & Kumar 2017, Wu 2006) and the consequences (Aaker 1007, Keller 1993, Meyer & Allen 1991, Park et al. 2010) of Online and Offline Customer Brand Engagement tools used by Luxury Fashion Houses such as gamification (Berger et al. 2017, Deterding et al. 2011, Hamari & Tunnanen 2014, Hamari

2019, Harwood & Garry 2015, Huotari & Hamari 2017, Koivisto & Hamari 2019, Robson et al. 2016, Koivisto & Hamari 2019) and co-creation (Higgins & Scholer 2009, Lee et al. 2015, Nyadzayo & Rossi 2019, Prahaland & Ramaswamy 2004, Payne et al. 2009, Vargo & Lusch 2004, Zhang et al. 2021).
Despite that, none of the studies analyzes the antecedents of CBE of Luxury Fashion Brands in the Metaverse. Given the increasing importance of this new digital world and the CBE in the Fashion Sector, it is worth analyzing the phenomenon of Customer Brand Engagement as a source of competitive advantage in order to survive in the actual competitive environment.

In the end, the scholars have focused more on the importance of Customer Brand Engagement and the tools to improve it, but they have not explored the factors that lead consumers to engage with Luxury Fashion Brands in the Metaverse. Indeed, the understanding of Brand Engagement tools and their application in the Fashion World and the Metaverse represent an important first step to involve consumers and develop stronger relationships with the brands. However, an effective Customer Brand Engagement, in particular with the birth of new technologies, can be reached only through the analysis of its antecedents. Being no research on this particular area, it is necessary to fill this gap with further research to advance and extend the already acquired knowledge regarding CBE within the Luxury Fashion Sector in the Metaverse.

2.2.1. Research Question & Hypotheses

Considering the above knowledge gap in the literature, there is a need to further investigate which are the antecedents of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse. Indeed, the study focuses on whether and how some characteristics of virtual worlds (such as 3D) and of the users (such as attitudes, emotions and personal traits) influence the effectiveness of Customer Brand Engagement tools in the Metaverse.
Therefore, the research question of the current study is:

RQ: What are the antecedents that lead consumers to engage with Luxury Fashion Brands in the Metaverse?

2.2.1.1. Independent variables

In this research, the independent variables concern Users' Characteristics and Metaverse Functionalities.
Four variables are identified and tested, in order to investigate if they act as antecedents of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse.

The first variable included in the research model is the User's Attitudes toward Luxury Fashion Brands and towards the Metaverse. In marketing, attitudes refer to the general positive or negative feelings, beliefs, and opinions that people have towards a product, service, or technology that they use (Ajzen 2005, Fazio 1990, Eagly & Chaiken 1993, Petty & Cacioppo 1981). Attitudes can be influenced by various factors such as personal experiences, cultural and social norms, and media exposure but also the perceived usefulness and ease of use of the product, and the overall satisfaction with the user experience (Davis 1989, Hassenzahl & Tractinsky 2006, Venkatesh & Bala 2008).
Attitudes can be (i) explicit, meaning that they are consciously held and can be easily articulated, or (ii) implicit, meaning that they are unconsciously held and may not be easily expressed. Attitudes can also be stable or can change over time. They play an important role in shaping people's behavior and decision-making processes.
Indeed, it can be assumed that:

Hypothesis 1 (H1). Attitudes are an antecedent of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse.

Another important variable to include in the research model concern the Emotions given by Luxury Fashion Brands in the Metaverse.
In marketing, emotions can be defined as the feelings and psychological states that are evoked in customers or potential customers by a product, service, brand, or advertising message (Pham & Lee 2019). Emotions can play a powerful role in shaping consumer behavior, brand engagement, and decision-making, influencing whether a customer chooses to buy a product or not (Holbrook and O'Shaughnessy 1984, Bagozzi et al. 1998, Huang 2001).

Marketers often try to tap into emotions such as happiness, excitement, love, trust, and belonging in order to create a positive association between their brand and the customer. They may also try to evoke negative emotions such as fear or anxiety in order to motivate customers to take action, such as buying a product to solve a problem or alleviate their concerns.

In this research, emotions refer to consumers' emotional responses to Luxury Fashion Brands in the Metaverse which are likely to be influenced by a variety of factors, including the perceived exclusivity and status associated with luxury goods (Fionda & Moore 2009), the creativity and innovation of virtual fashion designs, and the immersive and interactive nature of the Metaverse itself.

One potential emotion that may be evoked in the Metaverse is a sense of excitement and novelty that lead consumers to engage with brands. By offering unique and innovative virtual fashion designs, brands may be able to tap into the desire for new experiences and creative expression.

Another potential emotion that Luxury Fashion Brands may evoke in the Metaverse is a sense of exclusivity and prestige. By positioning themselves as high-end and exclusive, brands may be able to appeal to the desire for status and social recognition that is often associated with luxury goods. In order to feel unique and part of an elite community, consumers could feel the need to engage with the brand and show themselves as the first to take part in the new technology tools of the sector.

At the same time, however, Luxury Fashion Brands need to be careful not to come across as too elitist or out of touch with the broader community of Metaverse users. By demonstrating a willingness to engage with and contribute to the virtual world in meaningful ways, brands may be able to foster a sense of community and shared experience that could enhance their reputation and appeal in the metaverse. In this way, consumers could feel appreciated and understood by others.

Therefore, it is assumed that:

Hypothesis 2 (H2). Emotions are an antecedent of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse.

In order to find out which are the antecedents of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse, it is crucial to include as an independent variable the User's Personality Traits. They are enduring patterns of thoughts, feelings, and behaviors that are

relatively stable over time and across different situations. Personality traits are the characteristics that define an individual's unique personality and distinguish them from others. They can be classified into various categories such as the Big Five traits: openness, conscientiousness, extraversion, agreeableness, and neuroticism (Soto 2018).

Openness includes traits such as imagination, creativity, and willingness to try new things. This may be particularly relevant in the digital context, where users are engaging with new and innovative forms of online communities and virtual experiences.

Another relevant personality trait may be extraversion, which includes traits such as assertiveness and sociability. Users of Luxury Fashion Brands in the Metaverse may be drawn to the social aspects of these brands and the opportunities for socializing and networking within these communities.

These individual differences in personality may influence CBE of Luxury Fashion Brands in the Metaverse. For instance, extroverted individuals may be more likely to engage with brands in social environments, while individuals high in openness to experience may be more likely to try new brands or explore new metaverse environments.

Therefore, it can be assumed that:

Hypothesis 3 (H3). Personality traits are an antecedent of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse.

The last independent variable that is worth including in the research model concerns the Need for Metaverse Functionalities and, indeed, the specific characteristics of the Metaverse environment that may influence engagement with Luxury Fashion Brands.

For example, 3D environments may provide a more immersive experience for consumers, and user interactivity may facilitate engagement. Brand presence, such as the level of exposure or visibility in the metaverse, may also be an important factor.

The high level of accessibility of the Metaverse indicates the ease of access to Luxury Fashion Brands which may influence Engagement. For example, brands that have a prominent presence in the digital context or are easily accessible may be more likely to attract users. Furthermore, in order to obtain a high level of CBE, it is needed that the metaverse is not slow or frequently experiences technical difficulties.

Also, the integration with other platforms, which refers to the ability to seamlessly integrate with other platforms, such as social media or e-commerce sites, may increase engagement with Luxury Fashion Brands. For example, a Luxury Fashion Brand that allows users to purchase virtual items through an integrated e-commerce platform may be more likely to attract users.
Thus, it is assumed that:

Hypothesis 4 (H4). Need for Metaverse's Functionalities is an antecedent of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse.

2.2.1.2. Dependent Variable

The dependent variable of this research study is Customer Brand Engagement (CBE) of Luxury Fashion Brands in the Metaverse, which can be defined as the cognitive, emotional, and behavioral interaction between the customer and a brand (Chen e al. 2020). The present study investigates the impact of the four identified variables on the dependent variable Customer Brand Engagement of Luxury Fashion Brands in the Metaverse, in order to find out which are the antecedents that bring customers to engage with brands in the virtual world.
In particular, this research is meant to investigate if User's Characteristics (H1, H3), Emotions (H2), and Need for Metaverse Functionalities (H4) can be considered antecedents of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse (H1) and what level of influence they have.

2.2.1.3. Control Variables

To better investigate the Engagement phenomenon within the Luxury Fashion Sector in the Metaverse, it is useful to include control variables in the research model. In particular, three socio-demographic variables (age, gender, and education) are considered since they could influence the outcomes. Furthermore, also the level of knowledge about the Metaverse and the interaction with Luxury Fashion Brands are taken into consideration since they can influence the perceptions and the results.

2.2.2. Research Framework

Given the research question, the present study employs a four-dimension framework.
While the past literature investigates the antecedents of Online Customer Brand Engagement (France et al. 2016, Gligor & Bozkurt 2021), there is no research about the factors that lead consumers to engage with Luxury Fashion Brands in the Metaverse. This gap is used to develop the four mentioned hypotheses, with the aim of investigating the existence of the relationship between the four independent variables X and the dependent variable Y (Customer Brand Engagement of Luxury Fashion Brands in the Metaverse) (Figure 3).

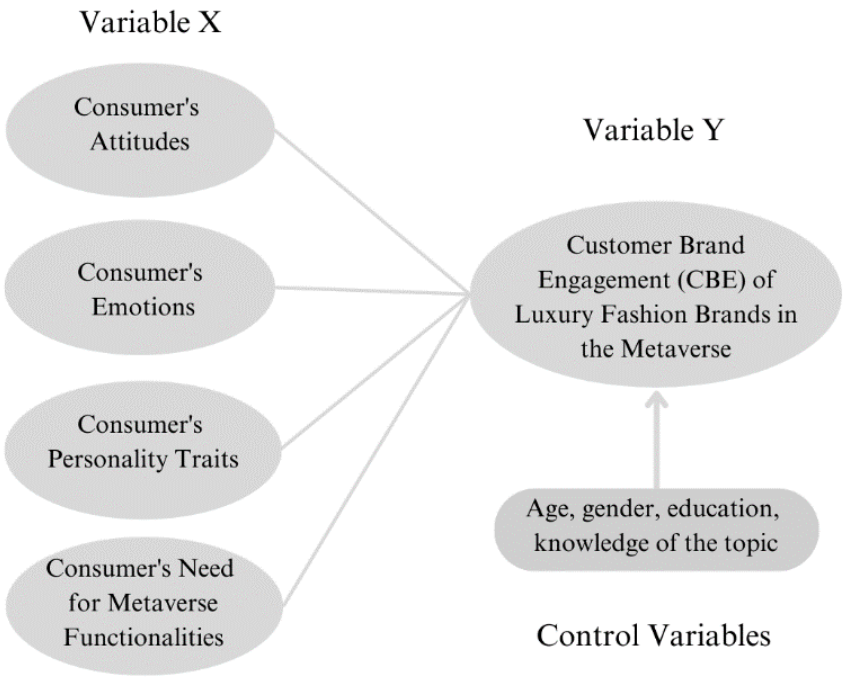


Figure 3. ***Research Framework***

CHAPTER 3 METHODOLOGY, ANALYSIS & FINDINGS

As shown in the previous chapter, it has become clear how much it is important for Luxury Fashion Brands to be present in the Metaverse and to create Customer Brand Engagement in an effective way in order to remain competitive in the sector.

This market research on the antecedents of CBE is conducted in order to get an understanding of the main reasons that lead customers to engage with Luxury Fashion Brands in the Metaverse, arriving at conclusions that contribute to the field of marketing.

In order to obtain reliable and complete outcomes, the study of the hypotheses is carried out through the use of both qualitative and quantitative research. In fact, these two types of research allow the researchers to better investigate a topic about which very little study has been conducted.

Following, due to the careful analysis of the outputs, relevant conclusions emerge, making it possible to confute the presented hypotheses and accurately answer the proposed research question.

3.1. Qualitative analysis

The qualitative analysis is subjective, and it allows the researcher to investigate the perception of the consumers. In particular, it has been decided to interview two different groups of people: a group with deep knowledge of the topic (the Experts) and another one not very knowledgeable about the subject (the Non-Experts). The main objective of this method is to examine consumers' experiences, motivations, and perceptions in detail and to identify the main themes that emerge from the data collection.

3.1.1. Sample

During the first part of the qualitative research, a sample of 10 people, 5 experts, and 5 non-experts on the topic, are interviewed.

The interviews are conducted in English on the Teams platform between the 10th and 23rd of April. Each interview lasts between 30 and 60 minutes, depending on the development of the dialogue between the moderator and the participant.
The respondents, five females, and five males, are aged between 20 and 60 and live in Europe. The composition of the group has been accurately decided in order to analyze the opinions of people of different sexes and ages. The participants of each same group lead a similar lifestyle and present the same educational level.
During all the interviews, the moderator tries to create as much as possible an atmosphere where the interviewees can freely express their thoughts, trying not to create bias in the formulation of questions. This allows them to formulate their opinion in the most reliable way possible.

3.1.2. Data Collection

To not create bias related to the different structures of the questions' syntax, the same questions are posed to both groups.
For the Non-Experts Group, only one round of interviews is carried out. Instead, for the Experts Panel, several sets of interviews are conducted.
In particular, for the latter, the Delphi Model, which is a regulated and anonymous iterative forecasting and decision-making process based on the gathering of expert opinions on a specific issue, is used. This method entails asking a group of carefully chosen experts to respond to a series of questions on a particular subject. Answers are gathered anonymously, processed, and contrasted to provide experts' consensus and disagreement. The participants are then asked to go at the responses of the other experts and offer a second response while taking into account the views of the other participants. Up until a high degree of expert agreement is obtained, this iteration procedure is done several times.

As shown below, the interviews are divided into five main sections: (i) Knowledge of the Metaverse and Luxury Fashion Brands, (ii) Attitudes, Emotions and Personality Traits of Consumers, (iii) Consumer's Need for Metaverse Functionalities, (iv) Identification of the variable that most influence Customer Brand Engagement in the Metaverse, (v) Customer Brand Engagement Tools of Luxury Fashion Brands in the Metaverse.

The number of questions prepared before the interview is thirteen (Appendix 1), but this number can increase based on discoveries along the course of the interviews:

Part 1: Knowledge of the Metaverse and Luxury Fashion Brands

1. Have you ever heard of the Metaverse?
2. Have you ever interacted with Luxury Fashion Brands in the Metaverse?
3. What do you know about Luxury Fashion Brands in the Metaverse?

Part 2: Attitudes, Emotions, and Personality Traits of Consumers

4. Do you think the experience of interacting with a Luxury Fashion Brand in the Metaverse is similar to or different than interacting with the brand in other environments?
5. In your opinion, what are the motivations that drive consumers to interact with Luxury Fashion Brands in the Metaverse?
6. Do you believe that Attitudes are an antecedent of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse?
7. Do you believe that Emotions are an antecedent of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse?
8. Do you believe that Personality Traits are an antecedent of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse?

Part 3: Consumers' Need for Metaverse Functionalities

9. What functionalities of the Metaverse do you think are important for consumers interacting with Luxury Fashion Brands?

Part 4: Identify the variable that more influences Customer Brand Engagement in the Metaverse

10. In your opinion, which of the following variables has a greater impact on Customer Brand Engagement of Luxury Fashion Brands in the Metaverse: Consumer's Attitudes, Emotions, Personality Traits, Consumer's Need for Metaverse Functionalities?
11. Could you describe why you think this variable is the most influential?

Part 5: Customer Brand Engagement Tools of Luxury Fashion Brands in the Metaverse

12. What Customer Brand Engagement tools or techniques do you think are most effective for engaging consumers with Luxury Fashion Brands in the Metaverse, in relation to the variable you identified as the most influential?

13. Could you describe the effectiveness of these Customer Brand Engagement techniques in the Metaverse?

3.1.3. Analysis & Findings

By interviewing the two groups, significant results (Table 3) emerge. A detailed description of the interviews for the individual groups can be found in the following sections (3.1.3.1. and 3.1.3.2.).

	NON-EXPERTS	EXPERTS
Know What Metaverse Is & Interaction	Yes / No.	Yes / Yes.
Different or similar experience	Three participants consider the experiences very different; the others note multiple similarities.	Different.
Main reasons to interact	• Need for novelties and new experiences • Interest in technology and the latest trends • Loyalty to the brands • Lower effort	• Try new experiences • Social Acceptance • Be free of expressing themselves • Better service and a greater level of customization
If Attitudes influence CBE	Yes. If a user has a positive attitude toward technology, he will be more likely to adopt it.	Yes. Understanding Consumers' Attitudes is essential for creating effective brand strategies.
If Emotions influence CBE	Yes.	Yes.

	Emotions are the starting point for the creation of loyalty.	Emotions can be more impactful as they can amplify the sensory and immersive nature of the virtual environment. They are activated depending on the experience.
If Personality Traits influence CBE	Yes. Users who are more open, outgoing and risk-takers approach luxury fashion in the metaverse more easily.	A consensus has not been reached.
If Metaverse Functionalities influence CBE	Yes. 3D and ease of use of the metaverse have been identified as the most important features of the same.	Yes. Augmented and extended realities have been identified as the most important features of the same.
Which variables have a greater impact on CBE	• Emotions (for two respondents) • Personality traits (for three respondents)	• Emotions
Most effective engagement tools	• Customization • Gamification • Creation of a community • Virtual try-on	• Customization • Gamification

Table 3. ***Qualitative Analysis - Findings***

3.1.3.1. Non-Experts Group

First of all, the Non-Experts' Group is interviewed and as expected, it turns out that all participants have heard about the Metaverse but have never interacted with Luxury Fashion Brands within this context. This allows the researcher an understanding of the opinions and the subjective point of view of those who, like most of the population, have not yet created a relationship with virtual realities. Despite this, each of them proves to have some knowledge, although not in-depth, about the presence of Luxury Fashion Brands in the Metaverse is able to make examples of brands that are successful in this context, such as Burberry.

Concerning how much the experience of interacting with a Luxury Fashion Brand in the Metaverse is different than interacting with the Brand in other environments, it may be noted that the sample presents conflicting opinions.
While the three participants consider the experiences very different, the others note multiple similarities.
The major differences that can be found concern a different tangible element and a not concrete perception of goods. In addition, it is found that the main goal of a consumer present on the Metaverse is not to buy a product but to try a new experience.
Some similarities, such as the fact that the consumer may feel present in the virtual store as in the physical one, also are emerged during the interviews.

Participants express similar reasons concerning why consumers interact with Luxury Fashion Brands in the Metaverse. In particular, it emerges the consumers' need to go in search of novelties and the curiosity to try new experiences, never seen before. Participants also mention the importance of the interest in technology and the latest trends in the Luxury Fashion Industry. Also, the loyalty of the customer to their favorite brands is crucial since they are ready to try whatever the brand suggests.
Only one participant mentiones the fact that a benefit of interacting with these brands in the Metaverse is the fact that they allow you to buy from home without the effort of going to a store, living a unique experience that gives emotions.

All people in the sample agree that all independent variables (Attitudes, Emotions, Personality Traits, and the Consumer's Need for Metaverse Functionalities) influence Customer Brand Engagement.
In particular, they recognize that the attitude towards a brand does not change between the physical and the virtual world, which is why people remain loyal to a brand and are willing to interact even in the metaverse. Moreover, if consumers have a positive attitude towards technology, they will be more likely to adopt it.

Regarding emotions, respondents highlight the relevance of emotions, which are defined as the starting point for the creation of loyalty, as a precursor of Customer Brand Engagement. One interviewee highlightes the fact that emotions can also affect the perception of the brand itself and therefore it is essential that companies raise them in the right way. During the process, it is crucial that brands, while proving innovative and technological, maintain a strong brand identity and history, trying to acquire new customers but also maintaining the old segment.
Also, regarding personality traits, the responses recorded are found to be quite similar. It is highlighted how people who are more open, outgoing and risk-takers approach luxury fashion in the Metaverse more easily. One participant stresses the fact that the degree of openness towards new experiences is connected to the desire to adapt to new environments and shop differently.
In addition, the 3D and ease of use of the Metaverse are identified as the most important features of the same.

In the end, it is asked the participants to indicate which of the four independent variables has a greater impact on the Customer Brand Engagement of Luxury Fashion Brands in the Metaverse. Three respondents indicate Consumers' Personality Traits since in their opinion, only people with specific Personality Traits will be likely to approach Metaverse and interact with Luxury Fashion Brands. They believe that at the beginning of innovation, the willingness of the consumers to engage with and so their Personality Traits are crucial. Some users are more comfortable with technology than others and this difference will play a big role when it comes to adapting to this new reality and interacting with it.
The other two respondents indicate Emotions as the most important antecedents of Customer Brand Engagement since they are related to memory and therefore the consumers always

associate them with the brand and recall them. Once the customers feel positive emotions in the Metaverse during the engagement with the Luxury Fashion Brand, they will be likely to try again the experience and discover the new tools created by the Brand.

Based on the variable identified as the most effective, it can be said that four Customer Brand Engagement Tools have been identified by the Non-Expert Group.
The first one concerns customization since creating products and or service experiences that are close to individual preferences can for sure make the customers more engaged. Also creating a community where users can meet people with similar personality traits could be effective. Moreover, from the interview, it emerges that also gamification and virtual try-on are important tools since they guarantee that customers have fun and feel a sense of gratification.

3.1.3.2. Experts Group

The panel of Experts, which has been selected through personal acquaintances and LinkedIn contacts, is interviewed extensively. All of them not only have a deep understanding of the Metaverse but have also interacted with Luxury Fashion Brands in this context. This allows the researcher to analyze in depth the opinion of those who work in this sector.
As previously mentioned, the Delphi Method is used. In the case under examination, only two rounds are deemed necessary, as the degree of consensus among the interviewees has found to be quite high already in the first round. After the second round, there is considerable consensus around all the issues raised, except for whether or not personality traits are an antecedent of the CBE.

Referring in general to the presence of this type of brand in the digital world, all the interviewees underline how much important it is to interact directly with customers and create unique experiences that are able to create stories and engage with customers.
Furthermore, all the Experts underline how the experience of interacting with brands in the Metaverse is different from doing it in other environments. It has been highlighted how the use of avatars allows the user to be himself, feeling free to express himself and creating online communities, where all people have the same power. Furthermore, it is also mentioned that

thanks to the use of these new technologies, there are no more geographical limits and people can participate in events, such as fashion shows, that have always been restricted to a small and selected circle of people.

Regarding the motivations that lead consumers to interact, multiple reasons are named. One Expert considers social acceptance as one reason, as the Metaverse is currently a growing trend that can bring benefits in the real world as well. Several Experts mention, as in the previous questions, the opportunity to try new experiences, meet people and the convenience of being able to do this in any physical location.
Moreover, the panel mentions the fact that customers have the possibility to be completely themselves, sharing their values with the brands, through their avatars. They can be who they want to be, independently from reality.
Furthermore, the possibility of having better service, and a greater level of customization has been central to the dialogue.

During the first round, all the Experts agree in confirming that Consumers' Attitudes are an antecedent of the CBE. It is stated that the Luxury Fashion Industry has always been a field that is unresponsive to changes, with a reluctant attitude toward anything that can be seen as a tool used by the masses and that can cause the loss of uniqueness of certain products/services. In the virtual context, Consumers' Attitudes towards a brand, its products, and its values can impact their level of engagement with the brand. Therefore, understanding Consumers' Attitudes towards Luxury Fashion Brands is essential for creating effective brand strategies that can enhance Customer Engagement in the Metaverse. Convincing people that the use of Metaverse, as well as other technologies, would not go to the detriment of the quality of the products/services offered by a luxury brand, nor its image, is a challenge that they have to face.

There is also a high degree of acceptance that Emotions are an antecedent of Customer Brand Engagement and that they play a crucial role in consumer behavior and decision-making. In the Metaverse, where consumers engage with brands through virtual experiences, emotions can be amplified and even more impactful as they can amplify the sensory and immersive nature of the virtual environment. Therefore, understanding and effectively tapping into consumers' emotions can be a key factor in driving CBE and loyalty in the Metaverse.

The panel of Experts agrees that different Emotions are activated depending on the experience. For instance, if the users participate in a challenge, they can feel to be successful. When they participate in a community, they feel part of it.

Regarding the fact that Personality Traits influence interaction with Luxury Fashion Brands, a consensus is not found in the second round. In fact, during the first one, two experts state that consumers can have some personality traits in real life but then have others that they aspire to through their avatar, becoming whom they would like to be. The other state that Personality Traits are an antecedent of CBE. In fact, if users are more open-minded or have a strong desire to try new things, they want to experiment more with this new technology.

Furthermore, during the first round, many features of the metaverse that are important to the consumer are named, such as NFTs, soul-bound tokens, the degree of customization, and the ability to connect with other avatars.
During the second round, it is concluded that Augmented and Extended Reality are the most important features as they allow the consumer to feel immersed and present in the Metaverse, experiencing unique moments.

Already in the first round, a consensus is found regarding the variable which, in the opinion of the Experts, most influences Customer Brand Engagement: Emotions. This opinion is justified by the fact that emotions are pivotal for consumer choice and that they are the greatest lever on which a brand can act to create lasting connections and bonds with its customers, making them loyal to the brand.

Based on the variable identified as the most effective, it can be said that during the first round, three Brand Engagement tools are identified by the Expert Group. Two Experts name the personalization of services and products and the creation of exclusivity as the most effective tools for creating Brand Engagement. Instead, the other three Experts considered gamification and the consequent role of rewards to be very important.
During the second round, all the experts, after learning what others thought was important, come to the conclusion that all gamification and personalization can be equally effective.

3.2. Quantitative Analysis

Subsequently, in order to acquire objective and reliable data, a quantitative analysis is completed.
Given the lack of studies around this topic and therefore the impossibility of collecting secondary data using datasets, company reports, and business articles, only primary data collection is possible.
A survey is submitted to a different and larger sample from the one interviewed for the qualitative analysis. To understand how much the independent variables impact the dependent one, the respondents are asked to indicate the level of influence of the independent variables on the dependent one.

3.2.1. Sample & Data Collection

The sample of this research consists, as in the qualitative analysis, of people who are over 18 years old. The great range of age allows the researcher to get a better understanding of a sample of people of different generations and, consequently, who have a different approach to the new technologies and the Luxury Fashion Industry.
The survey is submitted to female, male and non-binary people and with several levels of education.

The sample is asked to answer several questions through an online questionnaire created with Qualtrics. This web-based survey software allows researchers to create, launch, and evaluate surveys providing a wide variety of features.
The choice of submitting an online survey is based on several reasons. First of all, it allows the researcher to reach a consistent number of people geographically dispersed, guaranteeing cost-saving and efficiency. Furthermore, it can be submitted in a short period of time, obtaining the answer from many respondents in the same historical period. This is really important given the high speed with which the technological and luxury world evolves and changes.
After a careful check with the Advanced Marketing Management Professor about the structure of the survey and its precision, it is spread out through several online channels such as

Instagram, LinkedIn and WhatsApp. Since, contrary to the qualitative part, the respondents have not the support of the researcher, the questions are outlined in a very clear and logical way.

The survey is structured with 10 closed questions and 1 rank-questions, with a total of 11 questions (Appendix 2). The number of questions and the absence of open questions allows the respondents to not lose concentration during the questionnaire, answer accurately and complete the survey. The completion of the entire questionnaire takes about two minutes, and the respondents can observe the progress percentage of the questionnaire through a bar positioned at the top of the page.

After clicking the link, the participants are shown an informed consent form where they are informed of the study's objectives, assured that the questionnaire is entirely anonymous, and informed that the information are treated in accordance with privacy laws.

Next, the survey presents the first three questions regard general questions about the socio-demographic characteristics of the respondents such as age, gender and their level of education. Then, the questions regard the main topic of the research, and the respondents are asked to indicate if they have ever heard of the Metaverse and if they have ever interacted with Luxury Fashion Brands in this virtual context.

Following, the participants are asked to indicate their level of agreement from 1 (strongly disagree) to 7 (strongly agree) with the following statement:

1. Consumer's Attitudes influence Customer Brand Engagement of Luxury Fashion Brands in the Metaverse.

   (Attitudes refer to the general positive or negative feelings, beliefs, and opinions that people have towards a product, service, or technology that they use)
2. Consumer's Emotions influence Customer Brand Engagement of Luxury Fashion Brands in the Metaverse.

   (Emotions can be defined as the feelings and psychological states that are evoked in customers or potential customers by a product, service, brand)
3. Consumer's Personality Traits influence Customer Brand Engagement of Luxury Fashion Brands in the Metaverse.

(Personality traits are the characteristics that define an individual's unique personality and distinguish them from others. They can be classified into five categories: openness, conscientiousness, extraversion, agreeableness, and neuroticism)

4. Consumer's Need for Metaverse's functionalities influences Customer Brand Engagement of Luxury Fashion Brands in the Metaverse.
   (Example of Metaverse's functionalities are: 3D, accessibility, integration with other platforms)
5. I would like to engage with Luxury Fashion Brands in the Metaverse.

In the end, the respondents are asked to rank from 1 (the most influential) to 4 (the less influential), based on their influence on Customer Brand Engagement, the independent variables (Consumer's Attitudes, Consumer's Emotions, Consumer's Personality Traits, Consumer's Need for Metaverse's Functionalities).

The data collection process started on the 25th of April 2022 and continued for 10 days, until a great number of responses have been achieved.

3.2.2. Analysis & Findings

In order to analyse the collected 181 survey responses, SPSS (Statistical Package for the Social Sciences) software is utilized (Appendix 3). This software is chosen instead of others due to its relative ease of use and the transparency of the results provided. Additionally, it generates helpful reports and allows the researcher to study descriptive and inferential statistics, better examining the data and looking into the relationships between the relevant variables.

First of all, the results are transferred from Qualtrics to Microsoft Excel with the aim of gathering a clearer visual representation and deleting the non-necessary data such as the IP address and the location of the respondents. Moreover, looking at the 181 answers, only 177 are taken into account since 4 answers have not been completed.

Subsequently, the information is uploaded onto SPSS with the aim of getting a general view of the variables of the study. The software distinguishes three types of variables: nominal, ordinal and scale.

Variables are considered nominal when their values represent categories with no ranking; ordinal when there is an intrinsic ranking, and scale or continuous when the data indicate both the order and the distance between values11 (IBM.com).
In the survey data, gender is a nominal variable while age is a scale one. Education is considered an ordinal variable as well as brand community engagement (BCE) and the independent variables since they have been evaluated through a seven-point Likert scale.

Through the use of this software, a linear regression analysis is performed in order to test the four hypotheses of the conceptual model. The results are interpreted in logistic terms and the findings of the study are discussed accordingly.
Finally, the theoretical and managerial implications are presented as well as the limitations of the study and the suggestions for further research.

Since each variable investigated in the experimental study (the four independent variables X and the dependent one Y) are all made up of a single item, it is not possible to carry out a validity check by applying the factor analysis, and a reliability check by applying the reliability test. In fact, for the former, it is needed submitting at least three questions for each independent variable. Regarding the latter, it is as well required a minimum number of questions for each independent variable. For instance, Cronbach's Alpha Method requires at least two questions. In the researcher's opinion, increasing the number of questions would have been superfluous and would not have brought any additional results. Furthermore, it would probably have caused respondent fatigue and therefore a consequent inaccuracy and superficiality in the answers given by the respondents to the questions.

3.2.2.1. Descriptive Analysis

This section describes the sociodemographic characteristics of the sample of respondents, and their level of confidence with the Metaverse and the Luxury Fashion Brands in this context.

Regarding the socio-demographic data, 55,4% of respondents are represented by Generation Z (18-25 years old). This is probably due to the fact that the survey has been spread out through social media such as Instagram and the fact that this generation is the most interested in new technologies.
The percentage of Gen Y and Gen X is almost the same, about 18%. It could be explained due to the fact that according to Statista research (Statista 2023), around 75,5% of LinkedIn users are between the ages of 25 and 54 years old.

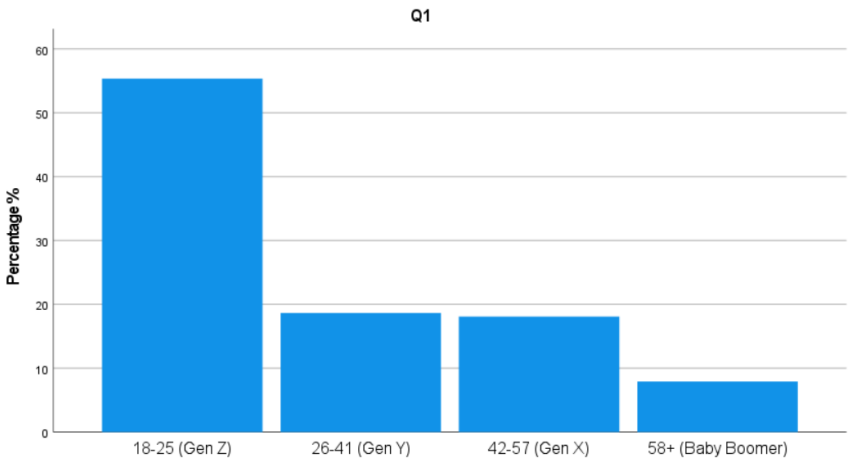


Figure 4. ***Survey Results – Demographic Characteristics***

The sample is represented by a great balance between women (53,1%) and men (44,6%). In fact, as shown by the pie chart (Figure 5), 53,1% of them are women and 44,6% are men. Three people are non-binary, and one has preferred to not define himself, for a total amount of 2,3% of the respondents.

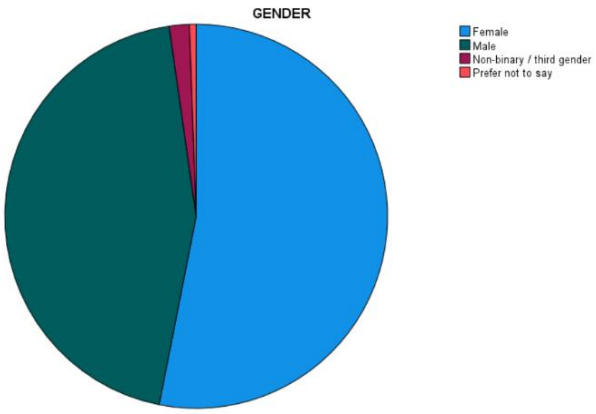


Figure 5. ***Survey Results - Demographic Characteristics***

As far as the achieved education is concerned, respondents present a similar level. In fact, 75,7% of them graduated from university (38,4% have obtained a Bachelor's Degree, 33,3% have a Master's one, and 4% have completed a Ph.D.). Only around one-quarter of respondents have stopped their studies after Middle School or High School, representing respectively 1,1% and 23,2% of the total number.

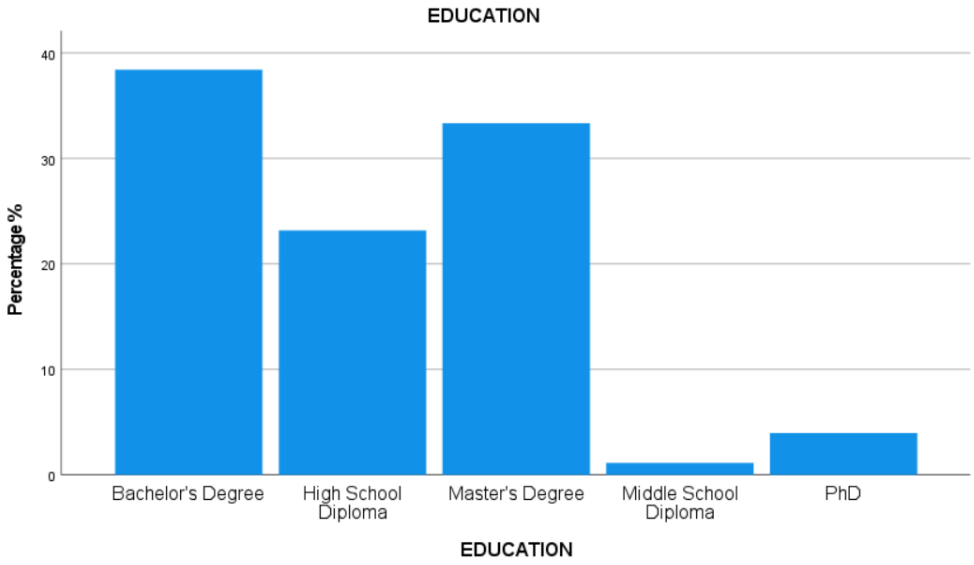


Figure 6. ***Survey Results - Demographic Characteristics***

After looking at the socio-demographic characteristic of the chosen sample, data about their knowledge of the Metaverse and their level of interaction with Luxury Fashion Brands in this context have been analysed.

As shown in the figure below, the majority of respondents (83,6%) claim to know what Metaverse is (Figure 7) but only 15,3% have interacted with Luxury Fashion Brands in this context (Figure 8).

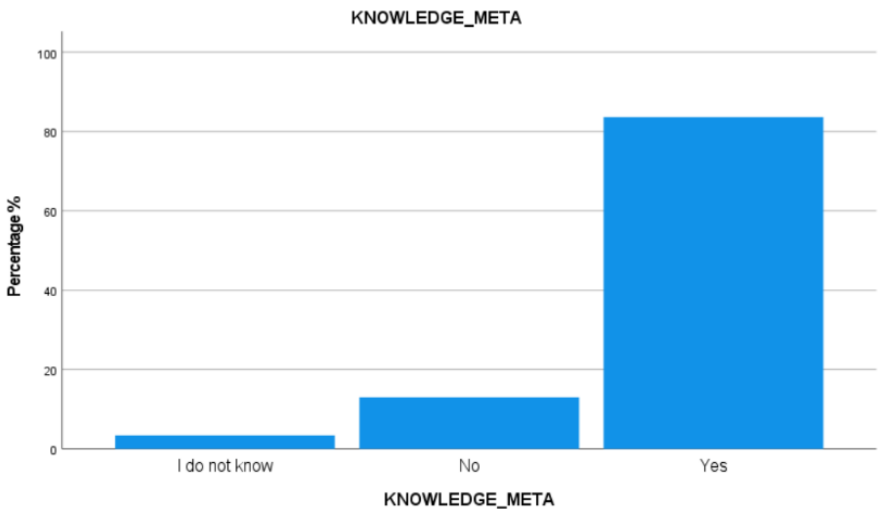


Figure 7. ***Survey Results – Knowledge of the Metaverse***

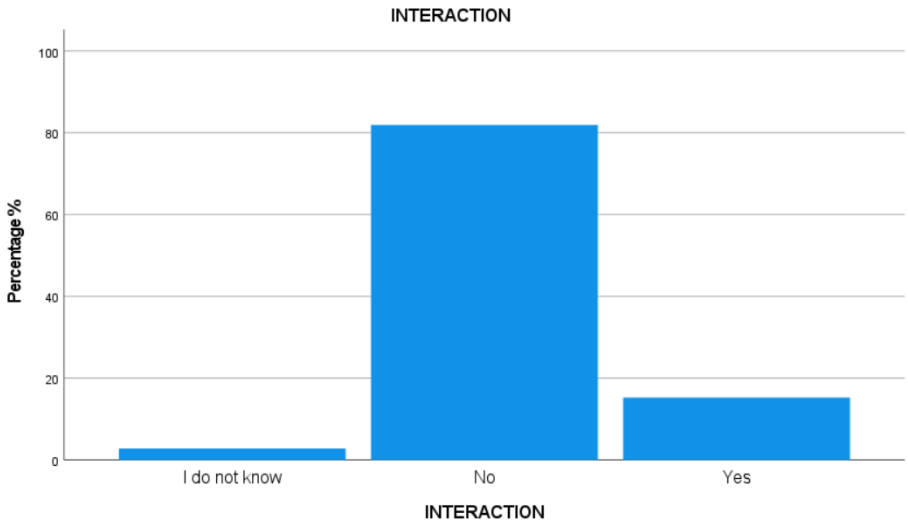


Figure 8. ***Survey Results – Interaction***

In the end, due to the last question of the survey, it is possible to draw up a ranking (Figure 9) of which variable most influence Customer Brand Engagement with Luxury Fashion Brands in the Metaverse.

The dependent variable that most respondents (about 50%) indicate as the one that most influences the dependent variable Y, is the one related to consumers' attitudes since it has a mode of 88 out of 177.

Emotions are indicated as the second (around 22%) most influential variable. Following, the Consumers' Need for Metaverse Functionalities (15%) and the Consumers' Personality Traits (12%) can be found.

Statistics

Ranking

N	Valid	177
	Missing	0
Mode		Attitudes

Figure 9

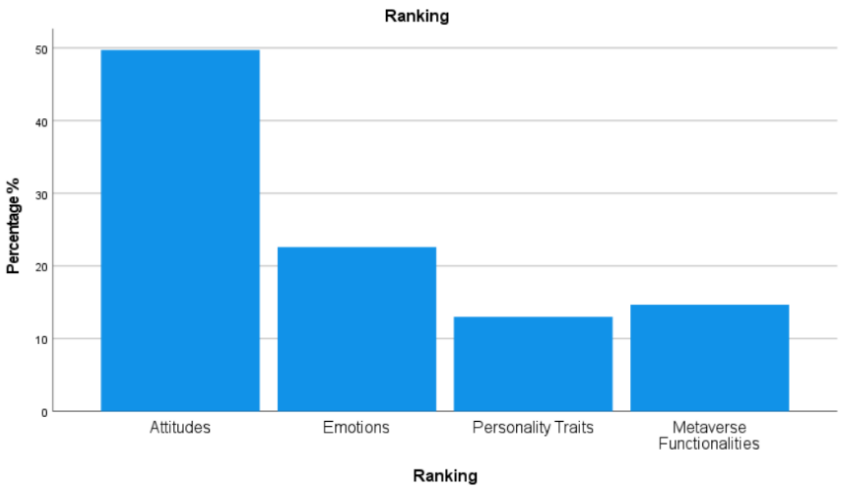


Figure 10. ***Survey Results – Ranking of the Antecedents***

3.2.2.2. Multiple linear regression analysis

In order to analyze the collected data, a multiple linear regression analysis is performed.
This type of analysis is chosen since the study is made out of four independent variables X (Attitudes, Emotions, Personality Traits, Consumer's Need for Metaverse Functionalities), and one dependent variable Y (Customer Brand Engagement of Luxury Fashion Brands in the Metaverse).

In the summary model, it is crucial taking into account the Adjusted R-squared (Figure 11).
The R-squared is the ratio of the total variance and the explained variance. Its value can range from 0 to 1, and it indicates that a great proportion of the variance in the dependent variable is explained by the regression model. A higher value indicates a better situation, but it can become bigger with the increase in the number of independent variables. Anyway, it could not mean an improvement in the level of the performance model.
Due to this, the Adjusted R-squared can be considered a corrected goodness-of-fit (model accuracy) measure for linear models (IBM 2023). It represents the percentage of variance in the dependent variable Y that is caused by the variance of the four independent variables X and it is always less than or equal to the R-squared. It is calculated by subtracting the division of the residual mean square error by the total mean square error from 1.
If the R-squared Adjusted is equal to 1, the model predicts values in the target field exactly. In reality, the values are lower than 1 and they can become negative if the R-squared is small.
As it can be observed from the table below, the adjusted R-squared is equal to 0.558 which indicates a quite good result. This output means that 55.8% of the Customer Brand Engagement variance is explained by the four independent variables.

Model Summary

Model	R	R-squared	R-squared adjusted	Standard Error
1	,754[a]	,568	,558	,848

Figure 11. ***Model Summary***

Subsequently, an Analysis of Variance (ANOVA) is performed in order to find the overall significance of the regression. The results of the ANOVA (Figure 12) are obtained through the F test.

To conduct the test, the two hypotheses written below are defined:

- H0 (null hypothesis): all regression coefficients equal to 0. Specifically, the independent variables do not have any influence on Customer Brand Engagement (dependent variable) of Luxury Fashion Brands in the Metaverse.
- H1: not all regression coefficients are equal to 0. Specifically, at least one independent variable influences Customer Brand Engagement (dependent variable) of Luxury Fashion Brands in the Metaverse.

In order to assess the significance of the Coefficients Table, a F-test is used considering a reference value of 0,05 (α).

As can be seen, the significance (sign.) presents a p-value lower than 0.001. This result is statistically significant since p-value = 0,001 < α = 0.05.

Therefore, the null hypothesis (H0) for which all independent variables do not have any influence on the dependent one can be rejected. Therefore, the alternative hypothesis (H1) can be accepted.

ANOVA[a]

Model		Sum of squares	gl	Quadratic Mean	F	Sign.
1	Regression	161,854	4	40,464	56,253	<,001[b]
	Residual	123,004	171	,719		
	Total	284,858	175			

a. Dependent: BRAND_ENG

b. Independent: (costante), FUNCTIONALITIES, ATTITUDES, PERSONALITY_TRAITS, EMOTIONS

Figure 12. ***Analysis of Variance***

Considering the previous outcomes, the Table of Coefficients (Figure 13) can be analysed to investigate the single effects of the single independent variable on the dependent one.

Looking at the single significance value, it can be observed that the significances of Consumer's Attitudes and Consumer's Need for Metaverse Functionalities are lower than 0.001 which is

smaller than α/2 (0,025). This indicates that the two independent variables have a statistically significant effect on the dependent one.

The significances of Consumer's Emotions and Consumer's personality traits, which are respectively 0,004 and 0,010, have smaller values than α/2 (0,025). Also, in this case, it can be claimed that the independent variables have a statistically significant effect on the dependent one.

In order to assess the significance of the Coefficients Table, a T-test has been used considering a reference value of 0,025 (α/2).

Coefficients[a]

Model		Unstandardized coefficients		Standardized coefficients			Statistics of collinearity	
		B	Standard Error	Beta	t	Sign.	Tollerance	VIF
1	(Costant)	,732	,299		2,447	,015		
	ATTITUDES	,292	,068	,324	4,320	<,001	,447	2,235
	EMOTIONS	,187	,064	,217	2,932	,004	,462	2,166
	PERSONALITY_TRAITS	,159	,061	,168	2,598	,010	,601	1,665
	FUNCTIONALITIES	,207	,055	,225	3,794	<,001	,715	1,399

a. Dependent: BRAND_ENG

Figure 13. ***Coefficients Table – Significance Value***

As further proof that the p-value is significant, the VIF (variance inflation factor) is checked. This value must never exceed the Index Value equal to 10, otherwise, a multicollinearity problem is present. This phenomenon can happen when variables are redundant, which means that they are highly correlated with each other, leading to not statically significant regression coefficients.

As shown below (Figure 14), all the variables present a low VIF value.

Furthermore, besides considering the significance of each effect of all the independent variables on the dependent one, it has been checked both the magnitude and the sign by observing the first column related to the unstandardized coefficients beta.

As Consumers' Attitudes and Consumers' Need for Metaverse Functionalities increase by one unit, the dependent variable Y (CBE of Luxury Fashion Brands in the Metaverse) respectively increase by 0,292 and 0,207 times. As well, if Consumers' Emotions and Personality Traits increase by one unit, the dependent variable Y respectively increases by 0,187 and 0,159 times.

Looking at the standardized coefficients, it can be observed that the Consumer's Attitudes show the highest value (0,324), followed by the Need for Metaverse Functionalities (0,225), Consumers' Emotions (0,217), and Personality Traits (0,168). This indicates that, as emerged from the last question of the survey, the Consumers' Attitudes most influence the dependent variable Y.

Coefficients[a]

Model		Unstandardized coefficients		Standardized coefficients	t	Sign.	Statistics of collinearity	
		B	Standard Error	Beta			Tollerance	VIF
1	(Costant)	,732	,299		2,447	,015		
	ATTITUDES	,292	,068	,324	4,320	<,001	,447	2,235
	EMOTIONS	,187	,064	,217	2,932	,004	,462	2,166
	PERSONALITY_TRAITS	,159	,061	,168	2,598	,010	,601	1,665
	FUNCTIONALITIES	,207	,055	,225	3,794	<,001	,715	1,399

a. Dependent: BRAND_ENG

Figure 14. ***Coefficients Table – VIF***

3.3. Theoretical Contributions & Managerial Implications

Given little research on the Luxury Fashion Brands in the Metaverse and, in particular about the antecedents of engagement with them, this research means to further investigate which are the main drivers of Customer Brand Engagement (CBE) of Luxury Fashion Brands in this context. Specifically, this research tries to understand if the perception of Consumers' Emotions, Attitudes, Personality Traits, and Consumers' Need for Metaverse Functionalities play a relevant role in leading consumers to engage with Luxury Fashion Brands in the Metaverse. This research demonstrated that all of them influence the level of engagement and, in particular, the Consumers' Attitudes and Emotions are the most influential ones.
The findings of this study may have important managerial implications since Luxury Fashion Brands can actively change their strategies in order to better engage customers and remain competitive within this sector.

Overall, marketing managers should focus on improving the experience, making them more engaging and authentic.
First of all, brands must leverage the Consumers' Emotions from the first moment they come into contact with them. It is important and crucial that only positive emotions are aroused so that the consumer can develop a good perception of the brand.
In order to do this, they need to invest in advanced technologies such as Virtual and Augmented Reality and machine learning, developing new tools. Moreover, they should hire highly specialized personnel in these areas who are able to manage possible technological issues. For instance, expertise in Virtual Reality development and programming is required to create virtual stores. Also, people with experience in the marketing area, and in particular who are social media experts and community managers, could manage the brand's presence in the metaverse and engage customers in meaningful ways.

It is crucial that Luxury Fashion Brands take into account the importance of Personality Traits since they lead to significant managerial implications.
In order to gather and evaluate data on consumers' personal characteristics, brands may first need to make investments in cutting-edge artificial intelligence and machine learning

technology. To better understand the data being gathered and derive useful conclusions from it, it could be necessary to hire data science and analytics experts.
Second, to reflect the unique characteristics of their clients in the metaverse, Luxury Fashion Companies need to modify their marketing and communications strategies. For instance, they could develop tailored content for consumers based on their interests and character qualities. The use of chatbots or virtual assistants that may respond to client questions in a more individualized way is another method that brands may be attempting to communicate with consumers in a more genuine and personalized way.
Third, companies may need to make an effort to give their customers a specialized and individualized buying experience in the metaverse. Customers could experience purchasing goods in the metaverse as if it were a real shopping experience by having personalized avatars made for them that represent their personality qualities, for instance.

Considering that also Consumers' Need for Metaverse Functionalities has been discovered to be a primary driver for engagement with Luxury Fashion Firms in the Metaverse, brands should first do in-depth market research. Online surveys, virtual focus groups, or data analysis of consumer behavior in the Metaverse could all be used for this study.
Also for this antecedent, it is important to invest in virtual or augmented reality technologies to provide a more immersive shopping experience if customers demand more interaction with the products.
Thirdly, while continually keeping an eye on market trends and technology advancements, companies should endeavor to adapt to new features appearing in the Metaverse. In order to do this, brands may need to be more adaptable and have a faster rate of market shift adaptation.
In the end, businesses ought to give customers thorough information about the goods and services available in the metaverse so that customers can make well-informed choices. This might necessitate more openness from brands and more emphasis on expressing brand values.

3.4. Limitations and suggestions for future research

Even though the study is accurate and presents reliable data, it presents several limitations which leave room for further and additional research avenues.

Firstly, the study regards Customer Brand Engagement only with Luxury Fashion Brands. Future research could investigate if the research question and the four hypotheses change between the Luxury Fashion Sector and the Fast Fashion one.

Subsequently, it is important to analyze the three limitations regarding the sample examined.
The first one is related to the age of the sample since it can impact the way people think, behave, and react to certain situations, which can affect the outcomes of the study's findings. For instance, older adults may not be as familiar with the technology used in the Metaverse, while younger generations may be more likely to embrace it. In contrast, older generations may have a different perspective on privacy concerns in the Metaverse, which younger generations may not consider.
It may be interesting to repeat the experiment, focusing only on people belonging to the younger generations such as Gen Z and Gen Y. By doing so, it could be examined if age has an impact on the outcome of the study and companies could develop new strategies for actual and future customers.
The second limitation is related to gender that play a crucial role in how people interact with Luxury Fashion Brands. For example, women may have different perceptions and attitudes towards these companies than men due to societal expectations, cultural norms, and personal experiences.
Focusing the study solely on women could provide valuable insights into how and why they engage with Luxury Fashion Brands in the Metaverse. By doing so, the study can help identify any gender-based barriers to engaging with companies in this context and provide recommendations for creating a more inclusive and engaging virtual space.
The degree to which a person engages with brands can be greatly influenced by socio-demographic factors like income and occupation. Higher earners could, for instance, have more money available to spend on high-end clothing in the virtual world. People who work in the fashion business may also be more knowledgeable about and interested in Luxury Fashion

Brands in the metaverse. Including variables such as income and occupation could provide valuable insights into the relationship between socio-economic status and engagement.
For instance, the study may look at whether people with higher incomes are more inclined than people with lower incomes to interact. Alternately, the study may look at whether people who work in the Fashion Sector are more likely than those in other professions to interact with Luxury Companies in the Metaverse.
In this way, the study could identify potential barriers based on socio-economic status and provide recommendations for creating a more inclusive virtual space.

Moreover, due to the fact that there is limited research on this topic, as previously explained, it has been considered superfluous to create a multi-item survey.
Despite that, in the future, due to more in-depth studies and knowledge about the topic, researchers could consider using multiple items to measure the construct of interest. This could lead to conducting a factor analysis (validity and reliability tests).

Finally, another limitation regards the methods used.
For the study in object, the traditional qualitative and quantitative methods have been considered the most suitable. The former is efficient but time-consuming, while the latter is more superficial but time-saving. In both cases, the cost is low, and no particular devices is needed.
In future, different research methods, such as the ones used in Neuromarketing, could be used. For instance, eye tracking, GRS (Galvanic Skin Response), and EGG (electroencephalogram). These techniques can provide insights into the subconscious and emotional responses of consumers to different stimuli.

CONCLUSION

This study explores the antecedent of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse and shows the opportunities to better engage the customers and create more authentic and unique experiences.

Chapter 1 introduces the study with a general overview of the Customer Brand Engagement of Luxury Fashion Brands in the Metaverse.
In fact, in this historical period, during which it can be observed the rapid ongoing of the 4.0 Industrial Revolution, it is essential for companies to innovate themselves and follow the latest new technologies in order to remain competitive in the market. According to McKinsey research, it is expected that by 2030, the Metaverse might produce up to $5 trillion in value (McKinsey 2022). Looking at the luxury industry, it is expected that the market for virtual luxury items will be worth $50 million by 2030 (Girod 2023).
Through the analysis of this emerging new technology, it can be noticed that Luxury Fashion Brands can have many opportunities but, at the same time, they must put attention to several challenges that they must address to succeed in this new platform. Moreover, brands must be customer-centric in order to succeed. In the Metaverse, it can be reached thanks to some tools such as the creation of virtual showrooms, virtual fashion shows, co-creation, and gamification. Indeed, due to the growth of the Metaverse and the increasing number of companies present in this context, new ways are being sought to engage consumers.
Therefore, Chapter 2 provides a theoretical literature review on the phenomenon of Customer Brand Engagement (CBE) and its impact on Virtual Worlds. Then, the knowledge gap is highlighted by showing that only a few researchers have yet investigated the antecedents of Customer Brand Engagement in the Metaverse, and specifically none of them have focused on Luxury Fashion Industry. Given this gap, the study presents its research question aimed at investigating what are the antecedents that lead consumers to engage with Luxury Fashion Brands in the Metaverse. To answer this question, four hypotheses on the relationship between Consumer's Attitudes, Consumer's Emotions, Consumer's Personality Traits, Consumer's Need for Metaverse Functionalities and CBE of Luxury Fashion Brands in the Metaverse are presented.

Chapter 3 describes the methodology of the study, which has been conducted through a qualitative and quantitative research design. In order to create a logical structure for the study, it was preferred to combine both the methodology and the results and analysis in Chapter 3.
Regarding the qualitative methodology, two different groups of people (five Non-Experts and five Experts on the topic) are interviewed. The results show some differences between the Non-Experts and Experts groups. All the sample interviewed claim to know what the Metaverse is, but only the Experts have interacted with Luxury Fashion Brands in this context. While all the Experts consider the experience of interacting with brands in the Metaverse different from doing it in other environments, only three Non-Experts out of five shares this opinion. Regarding the main reasons that lead consumers to engage, the need of trying new experiences has been mentioned by the groups. The entire sample claim that all the independent variables (Consumer's Attitudes, Emotions and Personality Traits, Consumer's Need for Metaverse Functionalities) are antecedents of Customer Brands Engagement of Luxury Fashion Brands in the Metaverse. In particular, both groups have mentioned Emotions as the variable that has a greater impact on CBE, since they are considered key drivers. Furthermore, customization and gamification are identified as the most effective engagement tools.
Then, an online survey is filled out by a sample of different ages, gender and level of education. The 181 survey responses are analyzed with the IBM SPSS software, but only 177 of them are completed. The descriptive analysis shows that most respondents know what Metaverse is, but they have never interacted with Luxury Fashion Brands in this context. Moreover, it emerges that the majority of them indicated Consumers' Attitudes as the one that most influence Customer Brand Engagement. Emotions are found to be the second most influential variable, followed by the Consumer's Need for Metaverse Functionalities and the Consumer's Personality Traits.
Then, logistic ordinal regression is performed to test the hypotheses of the research framework, trying to understand if they are antecedents of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse. Overall, the results confirm the hypotheses that had been developed.

Given the lack of research on the antecedents of Customer Brand Engagement with Luxury Fashion Brands in the Metaverse, this study provides empirical evidence on which factors can have a significant influence. Above all, it demonstrates that attitudes and emotions play a fundamental role in leading consumers to engage with Luxury Fashion Brands in the Metaverse.

At the same time, companies must also put attention to Consumer's Need for Metaverse Functionalities and Consumer's Personality Traits.

Even though the study is accurate and presents reliable data, it presents several limitations, such as those related to the sample and methodology used, which leave room for further and additional research avenues.

The findings of this study may have important managerial implications since Luxury Fashion Brands can actively change their strategies in order to better engage customers and remain competitive within this sector.

APPENDIX

Appendix 1. Questions of the Interviews

1. Have you ever heard of the Metaverse?
2. Have you ever interacted with Luxury Fashion Brands in the Metaverse?
3. What do you know about Luxury Fashion Brands in the Metaverse?
4. Do you think the experience of interacting with a Luxury Fashion Brand in the Metaverse is similar to or different than interacting with the brand in other environments?
5. In your opinion, what are the motivations that drive consumers to interact with Luxury Fashion Brands in the Metaverse?
6. Do you believe that Attitudes are an antecedent of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse?
7. Do you believe that Emotions are an antecedent of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse?
8. Do you believe that Personality Traits are an antecedent of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse?
9. What functionalities of the Metaverse do you think are important for consumers interacting with Luxury Fashion Brands?
10. In your opinion, which of the following variables has a greater impact on Customer Brand Engagement of Luxury Fashion Brands in the Metaverse: Consumer's Attitudes, Emotions, Personality Traits, Consumer's Need for Metaverse Functionalities?
11. Could you describe why you think this variable is the most influential?
12. What Customer Brand Engagement tools or techniques do you think are most effective for engaging consumers with Luxury Fashion Brands in the Metaverse, in relation to the variable you identified as the most influential?
13. Could you describe the effectiveness of these Customer Brand Engagement techniques in the Metaverse?

Appendix 2. Survey design created with Qualtrics

Thesis project in Management (specialization in Fashion, Luxury and Made in Italy), Luiss Guido Carli University.
This survey aims to study the antecedents that lead consumers to interact with Fashion Luxury Brands in the Metaverse and it lasts about 2 minutes.
The questionnaire is entirely anonymous, and the information will be treated in accordance with privacy laws.

- Agree
- Disagree

Q1 How old are you?

- 18 – 25 (Gen Z)
- 26-41 (Gen Y)
- 42-56 (Gen X)
- 58+ (Baby Boomer)

Q2 What is your gender?

- Male
- Female
- Non–binary / third gender
- Prefer not to say

Q3 What is the highest level of education you have achieved?

- Middle School Diploma
- High School Diploma
- Bachelor's Degree
- Master's Degree
- PhD

Q4 Have you ever heard of the Metaverse?

- Yes
- No
- I do not know

Q5 Have you ever interacted with Luxury Fashion Brands in the Metaverse?

- Yes
- No
- I do not know

Q6 PLEASE INDICATE HOW MUCH YOU AGREE WITH THE FOLLOWING STATEMENT

Consumer's attitudes influence the engagement with Luxury Fashion Brands in the Metaverse. (Attitudes refer to the general positive or negative feelings, beliefs, and opinions that people have towards a product, service, or technology that they use)

- 1 – Strongly Disagree
- 2 – Disagree
- 3 – Somewhat disagree
- 4 – Neither agree nor disagree
- 5 – Somewhat agree
- 6 – Agree
- 7 – Strongly Agree

Q7 PLEASE INDICATE HOW MUCH YOU AGREE WITH THE FOLLOWING STATEMENT

Consumer's emotions influence the engagement with Luxury Fashion Brands in the Metaverse. (Emotions can be defined as the feelings and psychological states that are evoked in customers or potential customers by a product, service, brand)

- 1 – Strongly Disagree
- 2 – Disagree
- 3 – Somewhat disagree
- 4 – Neither agree nor disagree

- 5 – Somewhat agree
- 6 – Agree
- 7 – Strongly Agree

Q8 PLEASE INDICATE HOW MUCH YOU AGREE WITH THE FOLLOWING STATEMENT

Consumer's personality traits influence the engagement with Luxury Fashion Brands in the Metaverse.

(Personality traits are the characteristics that define an individual's unique personality and distinguish them from others. They can be classified into five categories: openness, conscientiousness, extraversion, agreeableness, and neuroticism)

- 1 – Strongly Disagree
- 2 – Disagree
- 3 – Somewhat disagree
- 4 – Neither agree nor disagree
- 5 – Somewhat agree
- 6 – Agree
- 7 – Strongly Agree

Q9 PLEASE INDICATE HOW MUCH YOU AGREE WITH THE FOLLOWING STATEMENT

Consumer's need for Metaverse's functionalities influences the engagement with Luxury Fashion Brands in the Metaverse.

(Example of Metaverse's functionalities are: 3D, accessibility, integration with other platforms)

- 1 – Strongly Disagree
- 2 – Disagree
- 3 – Somewhat disagree
- 4 – Neither agree nor disagree
- 5 – Somewhat agree
- 6 – Agree
- 7 – Strongly Agree

Q10 PLEASE INDICATE HOW MUCH YOU AGREE WITH THE FOLLOWING STATEMENT

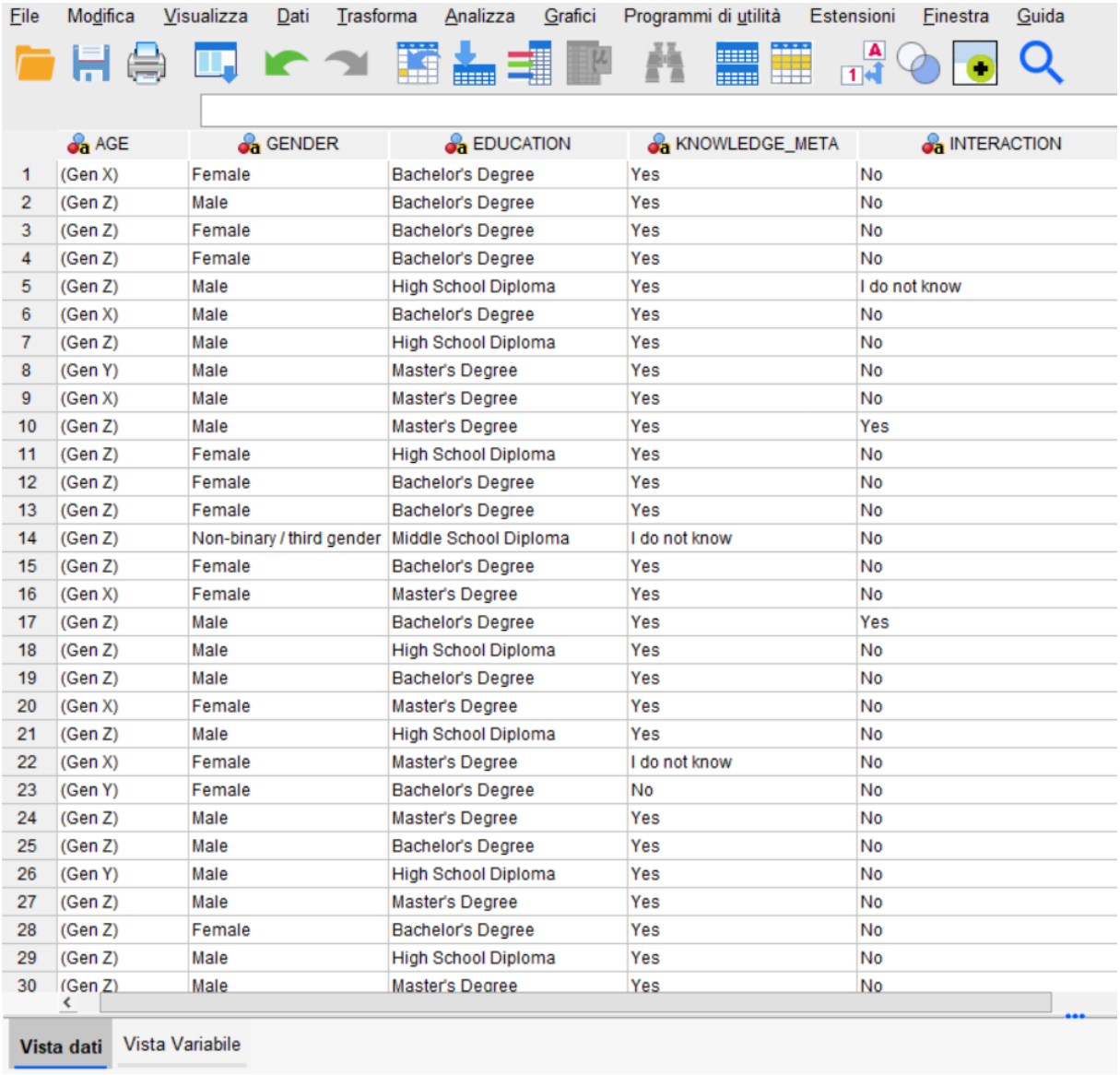
I would like to engage with Luxury Fashion Brands in the Metaverse

- 1 – Strongly Disagree
- 2 – Disagree
- 3 – Somewhat disagree
- 4 – Neither agree nor disagree
- 5 – Somewhat agree
- 6 – Agree
- 7 – Strongly Agree

Q11 Please rank from 1 (the most influential) to 4 (the less influential), based on their influence on customer brand engagement, the following variables:

- Consumer's Attitudes
- Consumer's Emotions
- Consumer's Personality Traits
- Consumer's Need for Metaverse Functionalities

Appendix 3. SPSS - Collected data from survey



	AGE	GENDER	EDUCATION	KNOWLEDGE_META	INTERACTION
1	(Gen X)	Female	Bachelor's Degree	Yes	No
2	(Gen Z)	Male	Bachelor's Degree	Yes	No
3	(Gen Z)	Female	Bachelor's Degree	Yes	No
4	(Gen Z)	Female	Bachelor's Degree	Yes	No
5	(Gen Z)	Male	High School Diploma	Yes	I do not know
6	(Gen X)	Male	Bachelor's Degree	Yes	No
7	(Gen Z)	Male	High School Diploma	Yes	No
8	(Gen Y)	Male	Master's Degree	Yes	No
9	(Gen X)	Male	Master's Degree	Yes	No
10	(Gen Z)	Male	Master's Degree	Yes	Yes
11	(Gen Z)	Female	High School Diploma	Yes	No
12	(Gen Z)	Female	Bachelor's Degree	Yes	No
13	(Gen Z)	Female	Bachelor's Degree	Yes	No
14	(Gen Z)	Non-binary / third gender	Middle School Diploma	I do not know	No
15	(Gen Z)	Female	Bachelor's Degree	Yes	No
16	(Gen X)	Female	Master's Degree	Yes	No
17	(Gen Z)	Male	Bachelor's Degree	Yes	Yes
18	(Gen Z)	Male	High School Diploma	Yes	No
19	(Gen Z)	Male	Bachelor's Degree	Yes	No
20	(Gen X)	Female	Master's Degree	Yes	No
21	(Gen Z)	Male	High School Diploma	Yes	No
22	(Gen X)	Female	Master's Degree	I do not know	No
23	(Gen Y)	Female	Bachelor's Degree	No	No
24	(Gen Z)	Male	Master's Degree	Yes	No
25	(Gen Z)	Male	Bachelor's Degree	Yes	No
26	(Gen Y)	Male	High School Diploma	Yes	No
27	(Gen Z)	Male	Master's Degree	Yes	No
28	(Gen Z)	Female	Bachelor's Degree	Yes	No
29	(Gen Z)	Male	High School Diploma	Yes	No
30	(Gen Z)	Male	Master's Degree	Yes	No

Outputs for the Descriptive Analysis

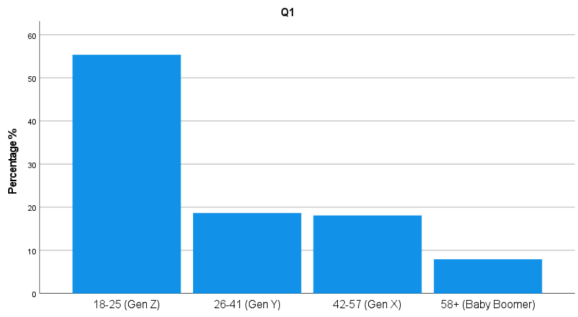
File Modifica Visualizza Dati Trasforma Analizza Grafici Programmi di utilità Estensioni Finestra Guida

	ATTITUDES	EMOTIONS	PERSONALITY_TRAITS	FUNCTIONALITIES	BRAND_ENG	Q11_1	Q11_2	Q11_3	Q11_4	Ranking
1	7	6	6	5	6	1	4	2	3	1,00
2	5	5	5	5	5	1	2	3	4	1,00
3	5	6	5	4	5	1	3	2	4	1,00
4	5	5	6	5	5	1	4	2	3	1,00
5	6	3	4	4	4	1	2	3	4	1,00
6	4	6	4	5	4	1	2	3	4	1,00
7	2	3	6	3	3	3	4	2	1	4,00
8	6	7	4	6	6	2	1	4	3	2,00
9	6	6	6	6	6	3	1	2	4	2,00
10	7	7	7	6	7	3	1	2	4	2,00
11	4	6	6	6	7	3	2	4	1	4,00
12	5	4	4	5	3	1	3	2	4	1,00
13	1	1	3	2	3	1	2	3	4	1,00
14	1	1	1	1	3	2	1	3	4	2,00
15	5	5	6	6	5	1	4	2	3	1,00
16	6	6	3	6	5	2	1	3	4	2,00
17	5	6	6	6	6	3	1	2	4	2,00
18	4	4	5	6	5	1	3	2	4	1,00
19	6	5	6	7	6	3	4	1	2	3,00
20	6	6	6	5	6	2	1	3	4	2,00
21	4	2	6	4	4	3	4	1	2	3,00
22	4	4	3	3	4	1	2	3	4	1,00
23	5	5	6	7	6	1	2	3	4	1,00
24	6	5	6	4	5	1	3	2	4	1,00
25	7	7	7	7	7	1	4	2	3	1,00
26	5	4	4	4	4	1	2	3	4	1,00
27	5	6	6	5	6	1	3	2	4	1,00
28	2	4	2	5	3	1	3	4	2	1,00
29	6	4	6	6	3	1	4	2	3	1,00

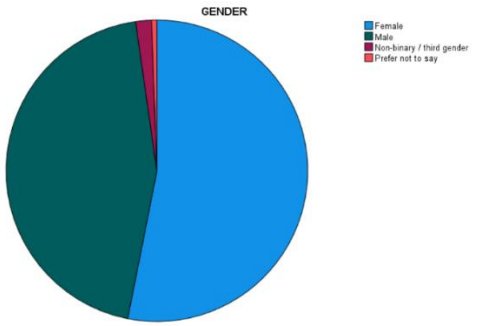
Vista dati Vista Variabile

Outputs for Multiple Linear Regression and Ranking

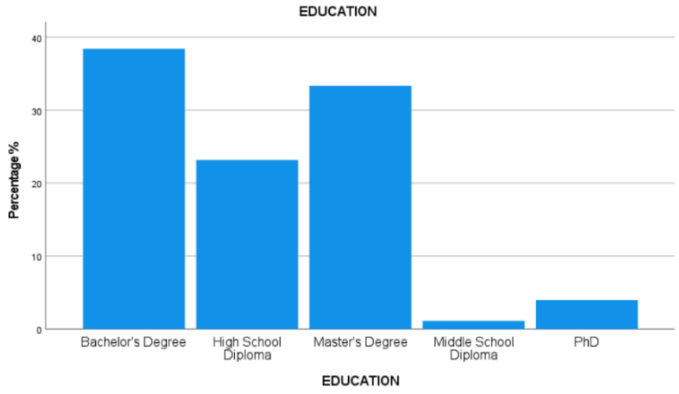
Appendix 4. Survey results – Age



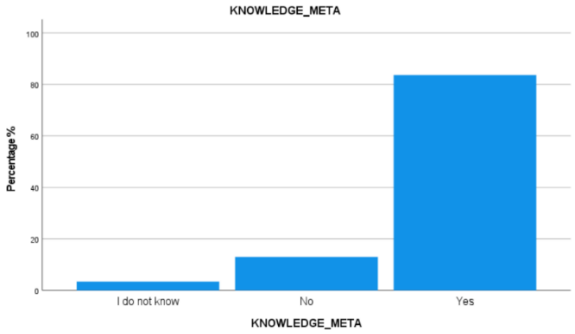
Appendix 5. Survey results – Gender



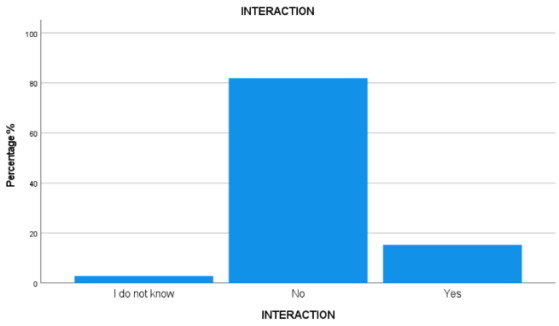
Appendix 6. Survey results – Level of Education



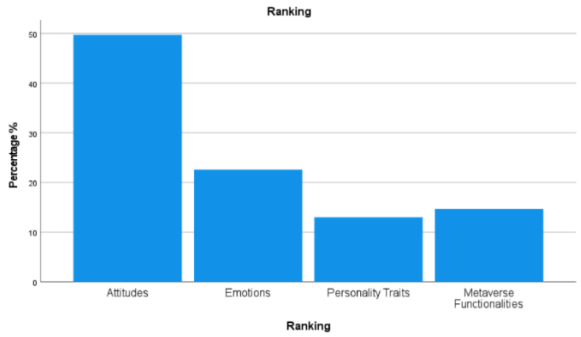
Appendix 7. Survey results – Knowledge of the Metaverse



Appendix 8. Survey results – Interaction



Appendix 9. Survey results – Ranking of the Antecedents



Appendix 10. Survey results – Model Summary

Model Summary

Model	R	R-squared	R-squared adjusted	Standard Error
1	,754[a]	,568	,558	,848

Appendix 11. Survey results – Analysis of Variance

ANOVA[a]

Model		Sum of squares	gl	Quadratic Mean	F	Sign.
1	Regression	161,854	4	40,464	56,253	<,001[b]
	Residual	123,004	171	,719		
	Total	284,858	175			

a. Dependent: BRAND_ENG

b. Independent: (costante), FUNCTIONALITIES, ATTITUDES, PERSONALITY_TRAITS, EMOTIONS

Appendix 12. Survey results – Coefficients (Significance Values and VIF)

Coefficients[a]

Model		Unstandardized coefficients		Standardized coefficients	t	Sign.	Statistics of collinearity	
		B	Standard Error	Beta			Tollerance	VIF
1	(Costant)	,732	,299		2,447	,015		
	ATTITUDES	,292	,068	,324	4,320	<,001	,447	2,235
	EMOTIONS	,187	,064	,217	2,932	,004	,462	2,166
	PERSONALITY_TRAITS	,159	,061	,168	2,598	,010	,601	1,665
	FUNCTIONALITIES	,207	,055	,225	3,794	<,001	,715	1,399

a. Dependent: BRAND_ENG

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SUMMARY

1. INTRODUCTION

Over the years, due to the development of a corporate vision that is no longer product-oriented, but increasingly customer-centric, the concept of Customer Engagement has become vital for the success of brands (Piancatelli et al. 2022). Due to the growth of social media and the consolidation of immersive virtual platforms that allow audiences to interact with brands on an increasing level, the idea of engagement has developed, making it increasingly appealing for businesses that base their positioning on co-creating value with their communities.
The new generations, such as Millennials and Gen Z, are digital-savvy and make full use of the functionalities provided by new technologies and digital environments. This allows them to live unique and exclusive experiences and build strong relationships with brands.
With the ongoing 4.0 Industrial Revolution, the experiences in physical settings like stores have been replaced by experiences given by new technologies, such as Virtual Reality (VR), Augmented Reality (AR), and the consolidation of virtual dimensions, such as the Metaverse.

The Metaverse is a completely immersive, three-dimensional digital environment that can be accessed through the Internet and navigated using an avatar (Dionisio et al. 2013). It can be defined as an embodied Internet where users can interact with nearly anything they can think of while actually inside the experience rather than merely viewing it (McKinsey 2022). The Metaverse is regarded as the mobile Internet's successor (Zuckerberg 2021) and it is able to transform the online experiences of today into interconnected, immersive digital worlds, where individuals may engage with one another regardless of where they are physically located.
In the digital world, the users are represented by *avatars*, digital representations of themselves. They allow users to interact with each other and navigate virtual environments, and they can be customized to reflect the user's personality, preferences, and identity (Ladd 2023). They are allowed to freely express themselves.
Several tech companies and startups, such as Facebook's Horizon Workrooms, Decentraland, and Roblox, are already working on creating their own versions of the Metaverse, while others are exploring how the concept could be applied to various industries. More and more companies are investing in it since according to reports, they have raised more than $10 billion in 2021,

more than double what they did in 2020 and it is expected that by 2030, the Metaverse might produce up to $5 trillion in value (McKinsey 2022).
This new digital world has been envisioned as a new frontier for many sectors such as social interactions, entertainment, education, work, and commerce, in particular within the Luxury Fashion Industry. In fact, it is expected that the market for virtual luxury items will be worth $50 billion (Girod 2023).

Even if the Metaverse presents many opportunities, it also poses several challenges for Luxury Fashion Brands.
The main issues are related to technical complexity, brand integrity, and the need to balance virtual and physical experiences. There are also concerns about cybersecurity concerns and the environmental impact of blockchain technology.
Even if brands have to overcome several issues, being present in the Metaverse can allow them to gain power and remain competitive in the market. The main opportunity regards the possibility to reach a global audience by showing products in new and innovative ways. Brands may provide customers with a distinctive and immersive shopping experience by building virtual spaces that highlight their items. For instance, virtual runway shows can be created in order to show customers to experience the latest collection in a 360-degree environment (McKinsey, 2022). This would give customers a sense of being present at the event, even if they are distant.
Furthermore, brands can try cutting-edge innovations and original concepts that might not be practical in the real world and that can stimulate several consumers' senses. The Metaverse can be an opportunity to create unique moments and improve Customer Brand Engagement.
An example of a CBE tool is the creation of Virtual Showrooms that emulate the physical stores, allowing customers to explore the collections in a more immersive and interactive way. Another tool regards the creation of Virtual Fashion Shows, that simulate traditional ones and can be considered a social revolution since these types of events were accessible only to a select group of industry professionals.
Other two effective tools, which help in building brand loyalty and engaging consumers, are co-creation and gamification. According to Vogue Business (2021), 53% of fashion brands are investing in the $300bn gaming sector, experimenting with filters, digital avatars, and virtual stores. Only 17% of luxury consumers worldwide express excitement about brands'

gamification efforts, but younger consumers (25%) and Chinese consumers (35%) express much greater enthusiasm. A whopping 48% of Chinese consumers of luxury goods play video games.

These techniques present a high degree of customization that is really appreciated by customers, and in particular by the new generations.

Gucci, Balenciaga, Louis Vuitton and Burberry are only some of the famous Maisons which are successful in the Metaverse.

2. THEORETICAL FRAMEWORK

Given the rapid emergence of the importance of the Metaverse and the growing importance of the presence of Luxury Fashion Houses within it to remain competitive in the market, it seems essential to understand the drivers that lead consumers to interact with brands in virtual reality. In this chapter, the existing literature review explores to provide an in-depth study of the concept of Customer Brand Engagement, its dimensions, and its importance for the growth of Luxury Fashion Brands. Furthermore, Online Customer Brand Engagement in the Metaverse is deeply analysed, presenting the antecedents and the consequences of it, and comparing the different theories. In the last section, the Brand Engagement strategies used by Fashion Companies in the Metaverse are explored.

2.1. Literature Review

2.1.1. Customer Brand Engagement

The Fashion Industry is highly competitive, with numerous brands vying for the attention of consumers. In such a competitive environment, it is essential for Fashion Companies to build strong emotional relationships with their customers. In fact, although Consumer Brand Engagement (CBE) is a recent concept in the marketing literature, it is of considerable importance to highlight how it is increasingly assuming considerable importance within this area of study (Haumann et al. 2015, Pansari and Kumar 2017, Precourt 2016). Even if there is limited empirical research about the engagement processes within Luxury Fashion Brands

(Prentice and Loureiro 2018, Tynan et al. 2010), it has been found that, due to the speed of change within this sector, branding of luxury fashion goods is more complex than other sectors (Fionda and Moore 2009).

Analyzing the past literature review, it is observed that several definitions of Customer Brand Engagement exist.

This research takes into account the most common definition which highlights the active and participatory role that customers play in co-creating value with the brand, emphasizing the cognitive, emotional, and behavioral processes that underlie engagement.

The cognitive dimension (thoughts), is the extent to which the customer is interested, engrossed, focused, vehement, and contemplated with a brand and the interactions with their customers (Hollebeek 2011b). This dimension is related to *immersion* which can be defined as the "*customer's level of brand-related concentration in particular brand interactions*" (Hollebeek 2011b).

The emotional dimension (affection) is an emotional subconscious construct connected to a condition of emotional activity known as the inspiration or pride induced by and related to the engagement object. It is related to *passion* which can be defined as "*the degree of a customer's positive brand-related affect in particular brand interactions*" (Hollebeek 2011b). Customers who feel a strong emotional connection to a brand are more likely to engage with it and remain loyal to it.

The last one, the behavioural dimension (action), is a state of consumer behaviour related to the object of engagement that is interpreted as the effort and energy put forth for an interaction. Behavioural engagement refers to the customer's actual behaviours toward the brand, such as their willingness to recommend the brand to others, their frequency of purchase, and their level of involvement in the brand's online or offline communities.

2.1.2. Online CBE

Online Customer Brand Engagement refers to the interaction and relationship between a customer and a brand that takes place in the digital space. It is the extent to which customers actively engage with a brand online, such as by sharing brand-related content, participating in brand communities, and providing feedback to the brand. With the increasing use of the internet and social media, many customers are engaging with brands online.

Compared to traditional views of Costumer Brand Engagement, online brand interactions are viewed as consisting of greater cognitive processing, heightened relevance and emotional experiences (Mollen & Wilson 2010), and greater advertising effectiveness (Calder et al. 2009).

Involvement and interactivity can be considered necessary antecedents for the development of a high level of Online Customer Brand Engagement.

Involvement is defined as the level of interest and relevance attributed to a specific object (brand) based on objectives, values, and perception of the self (Mittal 1995). The other antecedent (France et al. 2016, Gligor & Bozkurt 2021), interactivity, refers to the degree of interaction and communication that takes place between users and the content of a website or online platform (Wu, 2006). It takes into account a genuine type of connection between the consumer and the brand rather than a simple relationship.

The consequences of these two dimensions are brand experience, commitment, brand loyalty, and emotional connection.

These antecedents can be particularly observed in the Metaverse. Virtual Reality can be an effective way to engage users with brands, as it allows for interactive and immersive experiences that create emotional engagement and increase brand awareness.

By using virtual technology, businesses can provide users with a unique and engaging experience that encourages them to interact with the brand in new and exciting ways. For instance, AR can be used to enhance product information, provide interactive product demos, or create branded games and experiences.

In the Metaverse, Customer Brand Engagement can be divided into three different types: (i) User-brand Engagement (interactions between individual users and objects); (ii) User-user Engagement (interactions between individual users); (iii) User-bystander Engagement (impact

that an immersive experience using virtual technology can have on those who are not directly involved in the experience).

The past research also highlight how Virtual Worlds can be effective at enhancing Customer Brand Engagement since they provide a sense of social connection and community among participants.

The first theory presented is the Embodied Social Presence Theory suggests that the degree to which a person feels present in a virtual environment affects their emotional responses and behavior in that environment. The avatars are considered mediators of social interaction in the virtual (Mennecke et al. 2010).

Then, the Flow Theory states that individuals experience their highest level of enjoyment, creativity, and productivity (Moneta & Csikszentmihalyi 1996) when they are in a state of "flow", which is characterized by complete absorption in an activity, a feeling of control and mastery, and a lack of self-awareness or concern about the passage of time (Csikszentmihalyi 1975).

Also, the Uses & Gratification Theory plays a crucial role in better engaging customers in the Metaverse. It suggests that people use media for different reasons, such as information seeking, entertainment, or social interaction (Herzog 2000, McQuail 2000) and emphasizes the importance of understanding the needs and wants of consumers in order to create media content that will satisfy those needs and wants (Blumler & Katz 1974).

These findings are really significant for Luxury Fashion Brands which can use a great variety of strategies is used in order to interact with the target market. In particular, the gamification and co-creation tools have been analysed.

In fact, regarding the former, the existing literature shows a positive correlation between gamification and brand engagement (Berger et al. 2017, Harwood & Garry 2015, Robson et al. 2016). Particularly, while Berger et al. (2017) have found that highly interactive and optimally challenging gamified interactions improve the emotional and cognitive dimensions of brand engagement, Harwood & Garry (2015) and Robeson et al. (2016) take into account all three dimensions (cognitive, emotional, behavioural).

During the games, users can feel a sense of total immersion that, according to the Flow Theory, allows them to lose track of time, spending more time in the metaverse. Moreover, gamers can

feel the desire to accomplish goals, receive recognition, and attain a sense of mastery. At the same time, he has the opportunity to build relationships, and participate in social activities, fostering a sense of community and belonging.

On the other hand, due to co-creation, companies can gain valuable insights and feedback, and customers can feel more invested in and loyal to the product (Prahalad 2004). It "*is a key factor that drives consumers to engage with luxury fashion brands*" (Nyadzayo & Rossi, 2019) since it can foster a sense creativity, and ownership among users.

2.2. KNOWLEDGE GAP, HYPOTHESES & RESEARCH FRAMEWORK

Although research in the fields of both Customer Brand Engagement and the Metaverse is increasing, only a few researchers have already investigated the reasons that lead people to engage with Luxury Fashion Brands in the digital world. Given the recent emergence of the Metaverse and the use of digital tools to increase Customer Brand Engagement, there is not an extensive nor comprehensive volume of research on this topic. Due to this, it appears to be essential to investigate the antecedents of this phenomenon and how companies can exploit it.

RQ: What are the antecedents that lead consumers to engage with Luxury Fashion Brands in the Metaverse?

Four variables are identified and tested, in order to investigate if they act as antecedents of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse.

The first variable included in the research model is the Consumer's Attitudes toward Luxury Fashion Brands and towards the Metaverse. In marketing, attitudes refer to the general positive or negative feelings, beliefs, and opinions that people have towards a product, service, or technology that they use (Ajzen 2005, Fazio 1990, Eagly & Chaiken 1993, Petty & Cacioppo 1981).

Hypothesis 1 (H1). Attitudes are an antecedent of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse.

Another important variable to include in the research model concern the Emotions given by Luxury Fashion Brands in the Metaverse.

In marketing, emotions can be defined as the feelings and psychological states that are evoked in customers or potential customers by a product, service, brand, or advertising message (Pham & Lee 2019). Emotions can play a powerful role in shaping consumer behavior, brand engagement, and decision-making, influencing whether a customer chooses to buy a product or not (Holbrook and O'Shaughnessy 1984, Bagozzi et al. 1998, Huang 2001).

One potential emotion that Luxury Fashion Brands may evoke in the Metaverse is a sense of excitement and novelty that lead consumers to engage with brands. By offering unique and innovative virtual fashion designs, brands may be able to tap into the desire for new experiences and creative expression that is often associated with the metaverse.

Another potential emotion that luxury fashion brands may evoke in the metaverse is a sense of exclusivity and prestige.

Hypothesis 2 (H2). Emotions are an antecedent of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse.

The third variable concerns Personality Traits which are the characteristics that define an individual's unique personality and distinguish them from others. They can be classified into various categories such as the Big Five traits: openness, conscientiousness, extraversion, agreeableness, and neuroticism (Soto 2018).

Hypothesis 3 (H3). Personality Traits are an antecedent of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse.

The last independent variable that is worth including in the research model concerns the Need for Metaverse Functionalities and, indeed, the specific characteristics of the Metaverse environment that may influence engagement with Luxury Fashion Brands, such as 3D.

Hypothesis 4 (H4). Need for Metaverse's Functionalities is an antecedent of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse.

The dependent variable of this research study is Customer Brand Engagement (CBE) of Luxury Fashion Brands in the Metaverse.

To better investigate the Engagement phenomenon within the Luxury Fashion Sector in the Metaverse, it is useful to include control variables in the research model. In particular, three socio-demographic variables (age, gender, and education) are considered, in addition to the level of the knowledge of the topic.

Overall, this research is meant to investigate if Consumer's Characteristics (H1, H3), Emotions (H2), and Need for Metaverse Functionalities (H4) can be considered antecedents of Customer Brand Engagement of Luxury Fashion Brands in the Metaverse (H1) and what level of influence they have.

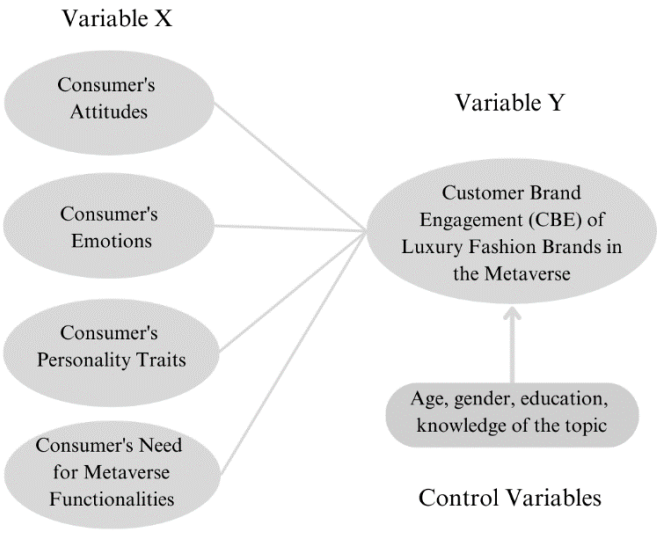

Figure 1. ***Research Framework***

3. METHODOLOGY, ANALYSIS & FINDINGS

This market research on the antecedents of CBE has been conducted in order to get an understanding of the main reasons that lead customers to engage with Luxury Fashion Brands in the Metaverse, arriving at conclusions that contribute to the field of marketing.
In order to obtain reliable and complete outcomes, the study of the hypotheses is carried out through the use of both qualitative and quantitative research. In fact, these two types of research allow the researchers to better investigate a topic about which very little study has been conducted.
Following, due to the careful analysis of the outputs, relevant conclusions emerge, making it possible to confute the presented hypotheses and accurately answer the proposed research question.

3.1. Qualitative analysis

The qualitative analysis is subjective, and it allows the researcher to investigate the perception of the consumers. In particular, it has been decided to interview two different groups of people: a group with deep knowledge of the topic (the Experts) and another one not very knowledgeable about the subject (the Non-Experts). The main objective of this method is to examine consumers' experiences, motivations, and perceptions in detail and to identify the main themes that emerge from the data collection.

3.1.1. Sample

During the first part of the qualitative research, a sample of 10 people, 5 experts, and 5 non-experts on the topic, are interviewed.
The interviews are conducted in English on the Teams platform between the 10th and 23rd of April. Each interview last between 30 and 60 minutes, depending on how the dialogue between the moderator and the participant developed.
The respondents, five females, and five males, are aged between 20 and 60 and live in Europe.

3.1.2. Data Collection

To not create bias related to the different structures of the questions' syntax, the same questions are posed to both groups.

For the Non-Experts Group, only one round of interviews is carried out. Instead, for the Experts Panel, several sets of interviews are conducted.

In particular, for the latter, the Delphi Model, which is a regulated and anonymous iterative forecasting and decision-making process based on the gathering of expert opinions on a specific issue, is used. This method entails asking a group of carefully chosen experts to respond to a series of questions on a particular subject. Answers are gathered anonymously, processed, and contrasted to provide experts' consensus and disagreement. The participants are then asked to go at the responses of the other experts and offer a second response while taking into account the views of the other participants. Up until a high degree of expert agreement is obtained, this iteration procedure is done several times.

3.1.3. Analysis & Findings

By interviewing the two groups, significant results which are summarized in Table 1 emerge.

	NON-EXPERTS	**EXPERTS**
Know What Metaverse Is & Interaction	Yes / No.	Yes / Yes.
Different or similar experience	Three participants consider the experiences very different; the others note multiple similarities.	Different.
Main reasons to interact	• Need for novelties and new experiences • Interest in technology and the latest trends	• Try new experiences • Social Acceptance • Be free of expressing themselves

	• Loyalty to the brands • Lower effort	• Better service and a greater level of customization
If Attitudes influence CBE	Yes. If a user has a positive attitude toward technology, he will be more likely to adopt it.	Yes. Understanding Consumers' Attitudes is essential for creating effective brand strategies.
If Emotions influence CBE	Yes. Emotions are the starting point for the creation of loyalty.	Yes. Emotions can be more impactful as they can amplify the sensory and immersive nature of the virtual environment. They are activated depending on the experience.
If Personality Traits influence CBE	Yes. Users who are more open, outgoing and risk-takers approach luxury fashion in the metaverse more easily.	A consensus has not been reached.
If Metaverse Functionalities influence CBE	Yes. 3D and ease of use of the metaverse have been identified as the most important features of the same.	Yes. Augmented and extended realities have been identified as the most important features of the same.
Which variables have a greater impact on CBE	• Emotions (for two respondents)	• Emotions

	• Personality traits (for three respondents)	
Most effective engagement tools	• Customization • Gamification • Creation of a community • Virtual try-on	• Customization • Gamification

Table 1. ***Qualitative Analysis - Findings***

3.2. Quantitative Analysis

Subsequently, in order to acquire objective and reliable data, a quantitative analysis is completed.

3.2.1. Sample & Data Collection

The sample of this research consists, as in the qualitative analysis, of people who are over 18 years old. The great range of age allows us to get a better understanding of a sample of people of different generations and, consequently, who have a different approach to new technologies and the Luxury Fashion Industry.
The sample is asked to answer several questions through an online questionnaire created with Qualtrics.

The survey is structured with 10 closed questions and 1 rank-questions, with a total of 11 questions.
The survey presents the first three questions regard general questions about the socio-demographic characteristics of the respondents such as age, gender and their level of education. Then, the questions regard the main topic of the research, and the respondents are asked to

indicate if they have ever heard of the Metaverse and if they have ever interacted with Luxury Fashion Brands in this virtual context.
Following, the participants are asked to indicate their level of agreement from 1 (strongly disagree) to 7 (strongly agree) with some statements referring to the influence of the four independent variables on the dependent one.
In the end, the respondents are asked to rank from 1 (the most influential) to 4 (the less influential), based on their influence on Customer Brand Engagement, the independent variables (Consumer's Attitudes, Consumer's Emotions, Consumer's Personality Traits, Consumer's Need for Metaverse's Functionalities).
The data collection process started on the 25th of April 2022 and continued for 10 days.

3.2.2. Analysis & Findings

In order to analyse the collected 181 survey responses, SPSS (Statistical Package for the Social Sciences) software is utilized. Only 177 are taken into account since 4 answers are not completed.

Through the use of this software, a linear regression analysis is performed in order to test the four hypotheses of the conceptual model. The results are interpreted in logistic terms and the findings of the study are discussed accordingly.

Since each variable investigated in the experimental study (the four independent variables X and the dependent one Y) are all made up of a single item, it is not possible to carry out a validity check by applying the factor analysis, and a reliability check by applying the reliability test.
In the researcher's opinion, increasing the number of questions would have been superfluous and would not have brought any additional results. Furthermore, it would probably have caused respondent fatigue and therefore a consequent inaccuracy and superficiality in the answers given by the respondents to the questions.

3.2.2.1. Descriptive Analysis

Regarding the socio-demographic data, 55,4% of respondents are represented by Generation Z (18-25 years old). The percentage of Gen Y and Gen X is almost the same, about 18%.
The sample is represented by a great balance between women (53,1%) and men (44,6%). In fact, 53,1% of them are women and 44,6% are men. Three people are non-binary, and one has preferred to not define himself, for a total amount of 2,3% of the respondents.
As far as the achieved education is concerned, respondents present a similar level. In fact, 75,7% of them graduated from university (38,4% have obtained a Bachelor's Degree, 33,3% have a Master's one, and 4% have completed a Ph.D.). Only around one-quarter of respondents have stopped their studies after Middle School or High School, representing respectively 1,1% and 23,2% of the total number.
The majority of respondents (83,6%) claim to know what Metaverse is (Figure 10) but only 15,3% have interacted with Luxury Fashion Brands in this context.

In the end, due to the last question of the survey, it is possible to draw up a ranking of which variable most influenced Customer Brand Engagement with Luxury Fashion Brands in the Metaverse.
The dependent variable that most respondents (about 50%) indicate as the one that most influence the dependent variable Y, is the one related to consumers' attitudes since it has a mode of 88 out of 177.
Emotions are indicated as the second (around 22%) most influential variable. Following, the Consumers' Need for Metaverse Functionalities (15%) and the Consumers' Personality Traits (12%) can be found.

3.2.2.2. Multiple linear regression analysis

In order to analyze the collected data, a multiple linear regression analysis is performed.
This type of analysis was chosen since the study is made out of four independent variables X (Attitudes, Emotions, Personality Traits, Consumer's Need for Metaverse Functionalities), and

one dependent variable Y (Customer Brand Engagement for Luxury Fashion Brands in the Metaverse).

As it can be observed from the table below (Figure 2), the adjusted R-squared is equal to 0.558 which indicates a quite good result. This output means that 55.8% of the Customer Brand Engagement variance is explained by the four independent variables.

Model Summary

Model	R	R-squared	R-squared adjusted	Standard Error
1	,754[a]	,568	,558	,848

Figure 2. ***Model Summary***

Subsequently, an Analysis of Variance (ANOVA) has been performed in order to find the overall significance of the regression. The results of the ANOVA (Figure 3) are obtained through the F test.

As can be seen, the significance (sign.) presents a p-value lower than 0.001. This result is statistically significant since p-value = 0,001 < α = 0.05. It indicates that at least one independent variable influence Customer Brand Engagement (dependent variable) with Luxury Fashion Brands in the Metaverse.

ANOVA[a]

Model		Sum of squares	gl	Quadratic Mean	F	Sign.
1	Regression	161,854	4	40,464	56,253	<,001[b]
	Residual	123,004	171	,719		
	Total	284,858	175			

a. Dependent: BRAND_ENG

b. Independent: (costante), FUNCTIONALITIES, ATTITUDES, PERSONALITY_TRAITS, EMOTIONS

Figure 3. ***Analysis of Variance***

Considering the previous outcomes, the Table of Coefficients (Figure 4) can be analysed to investigate the single effects of the single independent variable on the dependent one.

Looking at the single significance value, it can be observed that the significances of Consumer's Attitudes and Consumer's Need for Metaverse Functionalities are lower than 0.001 which is

smaller than α/2 (0,025). This indicates that the two independent variables have a statistically significant effect on the dependent one.
As further proof that the p-value is significant, the VIF (variance inflation factor) has been checked and it has resulted low which indicates the lack of a multicollinearity problem.

Coefficients[a]

Model		Unstandardized coefficients		Standardized coefficients			Statistics of collinearity	
		B	Standard Error	Beta	t	Sign.	Tollerance	VIF
1	(Costant)	,732	,299		2,447	,015		
	ATTITUDES	,292	,068	,324	4,320	<,001	,447	2,235
	EMOTIONS	,187	,064	,217	2,932	,004	,462	2,166
	PERSONALITY_TRAITS	,159	,061	,168	2,598	,010	,601	1,665
	FUNCTIONALITIES	,207	,055	,225	3,794	<,001	,715	1,399

a. Dependent: BRAND_ENG

Figure 4. ***Analysis of Variance***

3.3. Theoretical Contributions & Managerial Implications

The findings of the study may have important managerial implications since Luxury Fashion Brands can actively change their strategies in order to better engage customers and remain competitive within this sector.

First of all, brands must leverage the Consumer's Emotions from the first moment they come into contact with them.
In order to do this, they need to invest in advanced technologies such as virtual and augmented reality and machine learning, developing new tools. Moreover, they should hire highly specialized personnel in these areas who are able to manage possible technological issues.

It is crucial that Luxury Fashion Brands take into account the importance of Personality Traits since they lead to significant managerial implications.
In order to gather and evaluate data on consumers' personal characteristics, brands may first need to make investments in cutting-edge artificial intelligence and machine learning technology. To better understand the data being gathered and derive useful conclusions from it, it could be necessary to hire data science and analytics experts.

Second, to reflect the unique characteristics of their clients in the metaverse, Luxury Fashion Companies need to modify their marketing and communications strategies. Third, companies may need to make an effort to give their customers a specialized and individualized buying experience in the metaverse.

Considering that also Consumers' Need for Metaverse Functionalities has been discovered to be a primary driver for engagement with Luxury Fashion Firms in the Metaverse, brands should first do in-depth market research.

3.4. Limitations and suggestions for future research

Even though the study is accurate and presents reliable data, it presents several limitations which leave room for further and additional research avenues.

Firstly, the study regards Customer Brand Engagement only with Luxury Fashion Brands. Future research could investigate if the research questions and the four hypotheses change between the Luxury Fashion sector and the Fast Fashion one.

Subsequently, it is important to analyze some limitations regarding the sample examined.
The first one is related to the age of the sample and it may be interesting to repeat the experiment, focusing only on people belonging to the younger generations such as Gen Z and Gen Y. By doing so, we could examine if age has an impact on the outcome of the study and companies could develop new strategies for actual and future customers.
The second limitation is related to gender. Researchers could examine how women interact with different luxury fashion brands, their preferences, and what motivates them to engage with these brands. By doing so, the study can help identify any gender-based barriers to engaging with luxury fashion brands in the metaverse and provide recommendations for creating a more inclusive and engaging virtual space.
The third one concerns income and occupation. Including these variables could provide valuable insights into the relationship between socio-economic status and engagement with luxury fashion brands in the metaverse.

Moreover, due to the fact that there is limited research on this topic, as previously explained, it has been considered superfluous to create a multi-item survey.
Despite that, in the future, due to more in-depth studies and knowledge about the topic, researchers could consider using multiple items to measure the construct of interest. This could lead to conducting a factor analysis (validity and reliability tests).

Finally, another limitation could regard the methods used.
For the study in object, the traditional qualitative and quantitative methods have been considered the most suitable. In future research different methods, such as the ones used in Neuromarketing could be used. For instance, eye tracking, GRS (Galvanic Skin Response), and EGG (electroencephalogram). These techniques can provide insights into the subconscious and emotional responses of consumers to different stimuli.