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The Power of Avatar Marketing: Enhancing Customer Experience

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Abstract

The aim of this thesis is to analyse the effect of avatar personalisation on user behaviour in the metaverse. Through an online survey, data was collected from 215 participants on whom a quantitative investigation was conducted by means of linear regression on SPSS. In detail, the existence of a positive relationship was tested between the ability to personalise the voice and surroundings of the digital persona in the virtual world and the impact on consumer experience, purchase intention, brand evaluation and propensity to revisit the platform, and the findings of the analysis confirmed the existence of a significant correlation. The outcomes of this research highlight the relevance of the efficient employment of virtual characters for brands in the metaverse as it provides a tailored and engaging experience for consumers which leads to the establishment of lasting bonds with the company and may develop brand loyalty in the long run.

Introduction

E-commerce has been growing steadily for several years now with many consumers preferring to buy online for various reasons, such as the convenience of seeing their purchase being delivered straight to their homes, saving time and effort in comparing different offers, and competitive prices. Moreover, the focus for consumers these days is no longer simply the practicality of the purchased product, but the desire to have a personalized and high-quality experience through all the interactions they could have with the brand, which are not just reduced to the act of buying, but include all the occasions in which the consumer comes into contact with the label both before and after the purchase.

Therefore, in the case of online shopping, brands must be prepared to offer an innovative online customer experience by trying to make it as authentic and engaging as possible, in order to stand out and gain a competitive advantage over their competitors.

In recent years, many companies are beginning to integrate extended reality technologies including augmented reality, virtual reality, and avatars, with the aim of increasing consumer participation and satisfaction with the experience and consequently improving users' conception of the brand and its offerings.

Digital technology has advanced quickly over the past few years, and the virtual and physical worlds are becoming more and more connected. The idea of the metaverse in this context has grown in popularity as a virtual environment where individuals may interact, communicate, and build immersive experiences. At the same time, avatar marketing has developed as a cutting-edge tactic to involve customers within the metaverse, providing new opportunities for businesses to communicate with customers and advertise their goods or services.

This thesis seeks to investigate the effects of avatar marketing and the metaverse on the customer experience. The aim is to comprehend how these new kinds of virtual connection are influencing customer perception and the consumer experience through the examination of interaction dynamics, engagement techniques, and the impact of digital avatars on the purchase decision.

This research places a strong emphasis on studying the psychological and behavioral effects of interacting with virtual characters. This paper will also focus on how virtual immersion, identification, and emotion affect consumer purchasing behavior and how avatar-based marketing tactics might make use of these factors to engage customers on a deeper level.

The significance of this paper lies in the fact that it may provide a thorough overview and critical analysis of the new dynamics in the metaverse and avatar marketing. As a result, businesses may be able to modify their consumer and marketing strategies to fully take advantage of the potential

presented by these new virtual settings, improving the customer experience and obtaining a competitive edge.

This paper intends to advance scholarly conversation on metaverse and avatar marketing's contributions to the development of consumer behavior and business-consumer interactions, and contribute to further the knowledge about the impact of customizing the virtual character’s features on the customer experience.

Chapter 1 Theoretical Background

1.1 Online customer experience

Presently, customers are not seeking to simply buy a product or service, the focus is on living a memorable experience which consists in all the occasions in which the buyer interacts with the brand and every one of these touchpoints provides an opportunity to develop trust in the label and to create a solid long-term relationship with it. Indeed, in 2009, Brakus et al.[1] gave a definition of customer experience as "*the outcomes that result after multiple interactions across brand touchpoints engaging sensory, affective, intellectual, and behavioral experiences*." Regarding the online customer experience, the various touchpoints between the company and its customer base are based in the digital world, for instance, on social media platforms, e-commerce sites, and recently other contact interfaces located in the metaverse have been integrated. These platforms use extended reality technologies, such as augmented reality, virtual reality, and avatars to enhance the consumer experience making it more realistic and immersive to heighten consumer involvement and consequently satisfaction.

Since consumers learn about a brand through both cognitive and emotional factors from the label's online presence, marketing experts have developed a variety of cues based on practical written content, enticing imagery, advertising videos, or audiovisual materials that the users encounter on the company's sites and platforms. Although the digital promotional contents of a brand could be appealing for users, there has always been a limitation to online purchasing: the unavailability of physical contact and scarce social presence. The metaverse and extended reality come to the rescue of this lack of closeness by offering applications and software that allow consumers to feel like they are interacting with the brand and the offerings similar as they would do in the real world, for instance, with virtual try-on apps, 3D shopping environments, or events that may be attended in the virtual worlds through the use of an avatar.

According to the model developed by Bleier et al.[2] (2019), the shopping experience in the digital context should have some fundamental characteristics to be successful, such as "*informativeness, entertainment, social presence, and sensory appeal*." The first factor refers to the useful written knowledge that advice the consumers and helps them make conscious purchasing choices. Certainly, the digital platforms should also amuse users by integrating fun and creative features. As noted earlier, another key component of the online experience should be the social presence,

[1] Brakus, J. J., Schmitt, B. H., & Zarantonello, L. (2009). Brand Experience: What is It? How is it Measured? Does it Affect Loyalty?, Journal of Marketing, 73(3), 52-68.
[2] Bleier, A., Harmeling, C. M., & Palmatier, R. W. (2019). Creating Effective Online Customer Experiences, Journal of Marketing, 83(2), 98-119.

making consumers feel closer to one another and closer to the brand. Finally, the offerings should be able to awaken the five senses with innovative technologies in order to provide a 360-degree engaging experience.

1.2 The Metaverse

The metaverse is a broad researched topic which, according to the literature, is a phenomenon expected to revolutionize everyday life similar to the impact of the Internet. One definition was given by Davis et al.[3] (2009) as *"an immersive three-dimensional virtual world in which people interact as avatars with each other and with software agents, using the metaphor of the real world but without its physical limitations."*

In a context where shopping experiences are being brought to the digital world and a worldwide preference of buyers to engage with firms through online means has been registered, the metaverse is an innovative concept that offers a hybrid dimension between the real and virtual worlds where consumers feel fully captivated through all of their senses, in contrast to the traditional e-commerce websites that provide only visual and auditory stimulation. It is expected that this technology will radically transform consumer behavior and the way users communicate with retailers.

The metaverse detaches itself completely from previous two-dimensional technologies for several reasons. The objective of this concept is to replicate the real world in a virtual setting, where users may create a digital self to interact with others, handling appropriate tools such as virtual reality glasses. In 2021, the founder and CEO of Meta announced the countless functions offered by immersive technology, stating that users can attend events, purchase goods, work and communicate with colleagues, and do a list of other activities in this interconnected reality. Indeed, this is one of the fundamental differentiation points between the classic digital platforms and the metaverse, given that the former provide constrained possibilities to individuals. For instance, Second Life, which is considered to be the nearest equivalent to the metaverse, is a virtual environment where avatars can engage in activities with others only inside that particular context. On the other hand, the metaverse is depicted as more of a network of virtual worlds where the user may create their virtual personification and browse with it across separate platforms. Other examples of these limited virtual platforms are Roblox or Fortnite.

[3] Davis, A., Murphy, J., Owens, D., Khazanchi, D., & Zigurs, I. (2009). Avatars, people, and virtual worlds: Foundations for research in metaverses. Journal of the Association for Information Systems, 10(2), 1.

These platforms are considered precursors of the metaverse because they introduced the idea of living a virtual life alongside their ordinary existence. The evolution of these virtual worlds into the development of the metaverse happened thanks to the progresses of artificial intelligence (AI), the use of augmented reality (AR), virtual reality (VR), mixed reality (MR).

The metaverse may stimulate all the five senses of the user even replicating the sense of touch which is generally missing in the digital experiences, generating an immersive effect that empowers imagination and enhances the emotional proximity between users similarly as it would be in in-person interactions.

Second Life, which was developed even before Facebook was born, is argued by some researchers to be the first metaverse platform, because it was the very first example of a three-dimensional involving experience with a community consisting of millions of avatars doing activities and interacting with one another.

Another platform advancing towards the metaverse is one of the most successful games worldwide, Fortnite, which hosted virtual events, such as concerts held by Ariana Grande, Travis Scott, attended by over 27 million unique users, and Billie Eilish.

Figure 1: Travis Scott 'Astronomical' virtual concert on Fortnite

Source: https://twitter.com/FortniteGame

These new technologies are exploited especially by the fashion industry resulting in many collaborations between virtual platforms and luxury brands. For instance, Balenciaga was the first to collaborate with Fortnite launching a collection of digital items for the users of the gaming platform and followed up with a physical clothing line Balenciaga x Fortnite. The brand also

created its own game called Afterworld: The Age of Tomorrow in order to innovatively promote their new collection in 2021.

Figure 2: Balenciaga x Fortnite collection

Source: https://www.fortnite.com/news/high-digital-fashion-drops-into-fortnite-with-balenciaga

Nikeland is another example of brands creating engaging experiences in Roblox, a platform where companies can create their own games, where users may develop their virtual persona and interact with the brand. In the game created by Nike, consumers can virtually get together, play mini games with one another, and purchase digital clothing items. Other brands that created similar experiences in Roblox include Vans, Ralph Lauren, Gucci and Forever 21.

Figure 3: Nike metaverse town, 'Nikeland', on Roblox

Source: https://www.roblox.com/games/7462526249/NIKELAND

The metaverse arises from the convergence of three technological innovations: metaverse worlds (m-worlds), extended reality (XR), and virtual assets, such as non-fungible tokens (NFTs), cryptocurrencies and smart contracts.

The fundamental characteristics of the m-worlds are explained in a 2022 report from BCG[4]. First, the experiences offered in this kind of software are in real-time with no breaks and the user could log in to the system and pick up where he/she left off at any time at his/her convenience. In these platforms, one can find various people, companies and objects active at the same time, and the individual may move from one virtual world to the other freely using the same avatar. Inside the virtual frameworks in the metaverse, there is an economy of its own, wherein users can sell, or buy digital objects and services. Finally, perhaps the most important feature is that these platforms offer an immersive and life-like experience.

Alongside Roblox and Fortnite that were reported above, other examples of m-worlds are the mobile-based Zepeto, The Sandbox and Decentraland.

1.2.1 Extended Reality (XR)

Extended reality (XR) is used as the cumulative term that consists of augmented reality (AR), virtual reality (VR), and mixed reality (MR), which are immersive technologies that improve the users' experiences in the digital world.

It is expected that the use of XR will improve everyday life for people all over the world in different contexts, such as education, work, and medicine (Deloitte, C., 2022).

In the learning environment, AR and VR could revolutionize the educational process, making it more engaging, productive, and customized. For example, people could communicate with others who speak another language making it easier to learn it, they could enjoy digital representations of what they are studying or even observe closely an experiment with enhanced reality headsets. Enhanced and virtual reality tools could eliminate the need for an actual workplace since all work may be completed in a virtual setting. Thanks to these technologies, offices in the virtual world may feel like-like and authentic, with a highly individualized work atmosphere. All conferences may be held online, avoiding the need for time-consuming travel.

[4] Bobier, J. F., Merey, T., Robnett, S., Grebe, M., Feng, J., Rehberg, B., ... & Hazan, J. (2022). The Corporate Hitchhiker's guide to the metaverse. *Boston Consulting Group*.

Extended reality will also drastically change the way people spend their free time, giving the possibility to get together with friends and relatives at any place and time and do activities with them even if they are in different parts of the world.

These technologies will certainly contribute to the advancement of medicine in the future, resulting in drastically cutting the diagnostic time and enhancing the treatment rates, and in the field of medical education, using AR holograms will make the training process more efficient.

1.2 Augmented Reality

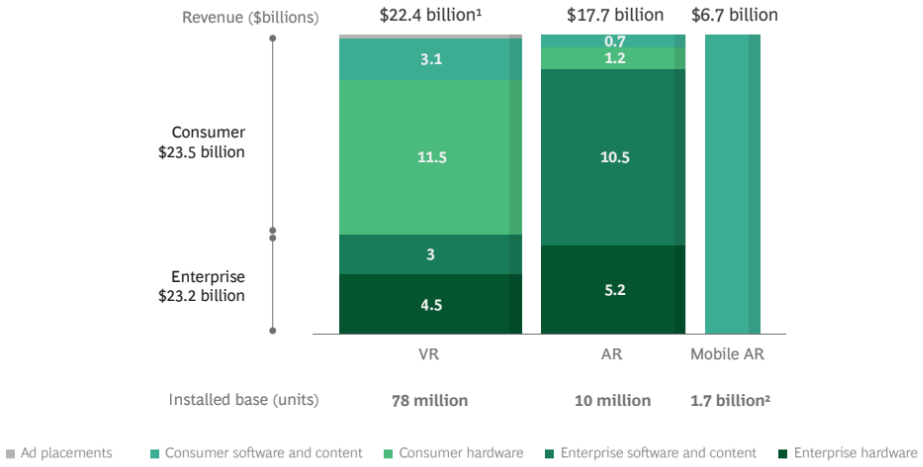
Enhanced and virtual reality are two of the main components of the metaverse and contribute to promote captivating encounters for the users in the digital world. These two technologies are very different from one another.

The latter creates a fully digital environment that bears no relation to the reality of things. Some examples of VR are the ones mentioned earlier, such as Second Life, Roblox or Fortnite. On the other hand, the former is based on the real world to which it incorporates a digital dimension resulting in a hybrid environment, with the aim of improving the way individuals explore their surroundings. On account of this ability to merge physical and virtual worlds, enhanced reality could be applicable to several different areas, such as advertising, health, education, or entertainment.

In retail, augmented reality is implemented to involve the customers in absorbing experiences, and it is foreseen that these tools will become essential for everyday activities, especially shopping. Examples of how AR has already been employed in this context are virtual try-on apps where consumers are able to visualize how the items look on them remotely, similar applications but for cosmetic purposes, or others that display furniture in consumers' home before purchasing.

Extended reality technologies are evolving and improving very rapidly. Indeed, it is projected that XR market will reach almost 50 billion dollars in the next couple of years, according to Boston Consulting Group, as displayed in the figure below.

Figure 4: Forecasts of augmented and virtual reality market trends up to 2025



Source*:* ARtillery Intelligence; December 2021; BCG analysis

1.2.1 Augmented Reality Examples

AR technologies are being employed by a rising number of brands, such as IKEA, Audi, Volkswagen, Lego and BMW, for marketing objectives. For instance, the IKEA mobile AR app enables consumers to visualize the products in the preferred background, such as their home, office, etc. and by taking a picture of a liked item, it is able to find similar products.

Enhanced reality techniques can be implemented by companies for different purposes, improving engagement and customer satisfaction, influencing positively purchasing and patronage intentions, developing brand loyalty are just some of them. Furthermore, these tools could be integrated into various forms: mobile applications, in-store tools, or devices, such as AR headsets, or smart glasses.

Augmented reality marketing has numerous uses across all the touchpoints between the consumer and the brand, both before and after the buying behavior. One case where enhanced reality is implemented post-purchase is the Lego mobile application that applies AR to the real-world product improving the use experience.

Marketing strategies that employ AR technologies could be used also to humanize the brand so that consumers can interact with it as a personification of the company, therefore, bringing them closer to the values and characteristics of the label and eventually creating a strong customer-brand relationship.

For the partnership between Pepsi and the Superbowl, the brand allowed fans across the globe to immerse themselves in the sporting event, creating a genuine sense of attendance, thanks to Web

AR technology. They started a trend on TikTok using an enhanced reality effect that simulated the famous half time show of the Super Bowl generating engagement and excitement for the real event.

Volkswagen launched an augmented reality application where people could observe the interiors and external characteristics of new models before they enter the market. Then, the brand added more functionality in the app, allowing consumers to personalize details of the car, and driving the vehicle virtually in a preferred setting.

One of the limits of online shopping is the hindrance for consumers to see and feel the products in person, especially for cosmetics and apparel which are crucial elements of people's appearance. Many clothing and make-up brands are developing AR mobile try-on apps to minimize the customers perceived risk when purchasing their items and attempting to boost the purchase behavior. Consumers can use the app Sephora Virtual Assistant to see what the products look like on them from the comfort of their own home (Figure 5). Additionally, L'Oréal offers the same service to its customer base with the enhanced reality app Makeup Genius.

Figure 5: Sephora's virtual try-on make up app

Source: https://www.sephora.my/pages/virtual-artist

1.3 Virtual Reality

Virtual reality (VR) technology is very different from enhanced reality since it produces a whole new world digitally rather than including digital content in the real setting, which is the result of AR. VR puts the user in a completely virtual surrounding where the individual can browse in and handle digital items.

According to Deloitte[5] metaverse report of 2022, "*VR simulates a virtual world through equipment and uses computers to generate a simulated environment, which emphasizes real-time interaction of users with the virtual world and creates a closed-loop, immersive virtual world experience*."

Virtual reality is already used in marketing practices to create immersive experiences and drive customer behavior to the advantage of companies, to impact positively on attitude towards the brand and the product, and customer enjoyment. In the field of tourism marketing, for instance, companies could use VR tools to let people see their holiday destinations before choosing one. As mentioned before, firms could develop their own games or virtual worlds, to create proximity with the consumer and enable users to interact with a digital representation of the brand. Another possibility includes the use of social media where brands could offer VR experiences on platforms like Facebook or Instagram to boost customer engagement and evaluation of the brand.

This technology gives countless possibilities to improve the customer experience. For instance, the customers could feel like they really are exploring a different environment thanks to the realism of the tool, or they could put themselves in someone else's shoes by impersonating an avatar while being in the virtual world.

VR is usually implemented through a computer, a smartphone, or a gadget, such as the VR glasses which were defined as "*wearable devices that allow individuals to use immersive virtual-reality applications, enabling these individuals to experience and interact with simulated environments through a first-person perspective*." (Herz, & Rauschnabel, 2019).

Virtual Reality is being applied in marketing strategies because of the advantages it can offer. First of all, as already reported regarding AR, extended reality technology creates an immersive experience for users, letting them virtually try on and observe closely the products enhancing customer participation with the brand. VR also gives the users the possibility to customize the offerings.

[5] Deloitte, C. (2022). Metaverse report—future is here.

The accessibility of these technologies combined with their continually reducing costs is one of their strengths because they enable brands to reach a very wide audience all over the world. Virtual reality is crucial to monitor the performance of brands and their marketing campaigns and improve them according to current trends and customer tastes, by collecting a large amount of usage data, for example how much time consumers spend on their site and interacting with the products, their likes and dislikes, and what they do when they visit their virtual shop or app.

Finally, brands that want to differentiate themselves from their competitors can find a variety of possible paths to take due to the multiple uses of XR technologies. For example, The North Face offers a Virtual Reality 360 degrees project that allows customers to experience climbing Mont Blanc. The VR experience allows customers to see what it is like to face such a challenge and how North Face products can help them overcome it.

1.4 Luxury fashion brands in the metaverse

The various benefits of using the metaverse for companies are a perfect match for luxury fashion brands, which are increasingly implementing technologies such as virtual reality, augmented reality, machine learning, and non-fungible tokens.

As noted previously, the first advantage that comes to mind regarding the metaverse is certainly the immersive aspect of the experience offered. This is particularly relevant for these premium brands who want their interactions with consumers to be perceived as high quality and exclusive.

Furthermore, by removing geographical and temporal restrictions, the metaverse enables marketers to access a worldwide audience. This implies that businesses may interact with clients and users may participate in virtual events powered by the brands from anywhere in the world. For example, this march saw the second fashion week on Decentraland attended by more than 60 fashion brands including Dolce & Gabbana, Adidas, and Tommy Hilfiger, along with new designers. Decentraland Metaverse Fashion Week (DMFW) is an exhibition of virtual fashion designs and creations that takes place in the virtual environment of Decentraland, a blockchain-based virtual world that allows people to produce, consume, and make money from their own content and apps.

Attendees may examine and buy the designs during DMFW by using bitcoin. Fashion designers and makers can exhibit their virtual creations on avatars. The occasion offers stylists a distinctive and captivating platform to present their originality and innovation. Additionally, the festival offers a variety of entertainment options, including fashion displays, musical performances, and art exhibitions.

This global virtual event was also an opportunity for brands to collaborate by establishing partnerships, such as Ilona Song with Vogue Singapore who created a collection of eight digital collectibles, two of which, the Chanterelle Dress and the Camellia Bride, are displayed in Figure 6 below. The clothing line was powered by a platform that enables users to develop their customizable avatar that they can use in all the metaverse starting by taking a picture of themselves, called Ready Player Me. This is an important example of exploiting the event in the metaverse to shift the focus to the physical collection, in fact, Song offered discounts on their real-life clothing line.

Figure 6: The Chanterelle Dress (left) and the Camellia Bride (right) by Ilona Song, Vogue Singapore

Source: https://voguesingapore.myshopify.com/products/digital-wearable-chanterelle-dress

1.4 Avatars

Miao et al.[6] (2022) defined an avatar as "*digital entities with anthropomorphic appearance, controlled by a human or software, that have an ability to interact*." To browse in the virtual worlds, users often are impersonated by an avatar, which is a digital representation of themselves, and they usually can personalize their look. This virtual character embodies a vital and central element of the online consumer experience as users identify with it, use it to interact with others and for every activity that they undertake in the virtual context. The digital persona can act as an intermediary between the buyer and the brand and, therefore, it has an impact on the way users interact with labels and their ultimate purchasing decisions.

Digital representations could also be of a virtual salesperson in an e-commerce setting, with the difference that it is not controlled by the user, whilst it usually represents a consultant that gives assistance and suggestions to buyers in shopping websites controlled by the computer. According to Garnier and Poncin[7] (2013), the literature has focused mainly on two types of virtual characters: *model-avatars* and *inhabitant-avatars*. The former is very lifelike because they fill the deficiency of physical and direct contact in the context of online stores. On the other hand, the virtual worlds are the areas where the latter are found which are still relevant to research because of the commercial aspect. Indeed, computer-generated universes are also characterized by the occurrence of labels and the purchasing of digital products.

Previous literature has identified a crucial role of avatars in the involvement of users in the online shopping experience. Their digital persona makes individuals feel really present in the virtual world, especially when they can customize their avatar, for instance by choosing their hair, face, skin color, hairstyle and color, height, etc., because their sense of self-identification is enhanced.

When an individual first enters the metaverse, the initial phase of designing their avatar is therefore fundamental and could have a significant impact on the users' evaluation and perception of the virtual experience. Not all platforms offer the same degree of customization of the virtual character, this could depend on the purpose of the digital character and on the types of technologies employed on that site. The software could often provide standard types of avatars to choose from, which could be humanlike, or, less frequently, could also have unconventional or animal characteristics.

[6] Miao, F., Kozlenkova, I. V., Wang, H., Xie, T., & Palmatier, R. W. (2022). An emerging theory of avatar marketing. *Journal of Marketing*, *86*(1), 67-90.

[7] Garnier, M., & Poncin, I. (2013). The avatar in marketing: Synthesis, integrative framework and perspectives. *Recherche et Applications en Marketing (English Edition)*, *28*(1), 85-115.

Consumers are usually given the freedom to personalize their avatar as they prefer, they also are able to make changes at following times whenever they like, and research showed that it is very common that users tend to align their avatar's looks and personality to themselves.

1.4.1 Avatars as salespeople

In the virtual shopping context, brands could make use of avatars as an embodiment of the company (Holzwarth et al., 2006) and its values and characteristics that they want to be communicated to the target audience.

As sale assistants, the online characters would assume a vital position in the communication and performance of the brand, as they would be at consumers' disposal for clarifications, and support in the decision-making process. The shop assistants are the ones with whom the users would form a long-lasting relationship and, consequently, they could develop trust, boost purchase intentions, and the willingness to return to the website. This role is enhanced in the online context where the sense of closeness and physical contact is lacking, therefore, the presence of a virtual salesperson would help humanize the brand and make users feel more emotionally attached to the label.

Indeed, the main weak point of online shopping has always been the deficiency of direct communication with the sales representatives that consumers could encounter and interact with in the physical stores. Buyers would perceive that they did not receive all the information needed to make an appropriate and confident purchase. This uncertainty derived from buying online has been reduced due to the companies' employment of virtual store assistants which increases the social aspect of the e-commerce experience. In particular, when the online salesperson is developed with characteristics analog to humans, users will perceive as if they are interacting with a real person, giving an improved sense of credibility and realism to the virtual shop experience. Furthermore, as mentioned before, consumers are not looking for simple information when they shop online anymore, instead, they want to be entertained, and the presence of an interactive virtual agent, especially with humanlike features, has been shown by research to increase the enjoyment of customers. In this way, animated shop assistants represent an opportunity for retailers to heighten customer engagement and pleasure.

Users may benefit from social involvement inside the virtual shopping environment by learning more about the goods being purchased, and their quality. They may feel more confident with their purchases and make better-informed purchasing decisions as a result.

Social contact in a virtual purchasing environment can promote brand identification and a sense of belonging to the group, resulting in commitment to the brand.

1.4.2 Avatars in 3D shopping malls

Recently, a number of companies has been experimenting with 3D shopping environments where the user can browse in the shop, look at the products more closely, purchase the real-world items, meet other peer consumers, and interact with virtual salespeople of the brand. In these three-dimensional stores, brands make users feel more absorbed than traditional two-dimensional e-commerce sites since they offer them a more realistic experience. For instance, the Chinese online shopping platform Taobao recently launched its 'Metaverse Mall', as exhibited in Figure 7 underneath, which is accessible to users directly through their smartphones.

Figure 7: Taobao Metaverse Mall

Source: https://jingdaily.com/taobao-launches-metaverse-mall-in-time-for-chinas-618-shopping-festival/

Van Kerrebroeck et al.[8]'s (2017) paper investigates how a group of shoppers at a mall were affected by a virtual reality (VR) experience. In experimental research done by the authors, some participants were exposed to virtual reality technology while others went about their regular mall shopping.

According to the study's findings, individuals who were involved in the VR experience were more emotionally engaged, paid more attention, and expressed more pleasure than those who were

[8] Van Kerrebroeck, H., Brengman, M., & Willems, K. (2017). Escaping the crowd: An experimental study on the impact of a Virtual Reality experience in a shopping mall. *Computers in Human Behavior, 77,* 437-450.

subjected to a conventional shopping experience. Additionally, those who used VR had stronger shopping intentions than those in the control group.

The authors concluded that through enhancing emotional involvement, attention, interest, purchase intention, and overall user happiness, virtual reality can significantly affect customers' purchasing experience and boost sales.

1.4.3 Types of avatars in online retailing

The article by McGoldrick et al.[9] (2008) presents a typology of virtual agent roles in e-commerce. The authors proposed four main roles for avatars: functional, informational, social, and entertainment.

The functional role concerns the use of interactive digital characters to assist the consumer in purchasing activities, such as product selection, data entry for the transaction, and after-sales assistance. The avatars characterized by an informational role provide product information to users, e.g., through a detailed description, reviews, or demonstration videos. The social role focuses on the virtual salesperson's ability to create social interaction between the consumer and the e-commerce site, for example through the creation of a virtual community or the sharing of shopping experiences. Finally, the entertainment role refers to using avatars to create an enjoyable and emotional shopping experience.

One of the objectives of the study was to investigate the preferences of consumers regarding which function the virtual agent should fulfil. The results of the research showed that most of the sample favored the two lastly mentioned features, meaning that even when purchasing online, users still search for an added value in their experience.

There has been extensive research in the literature concerning the characteristics that the avatar should hold in order to be effective in a strategic business plan. In particular, the paper by Elsharnouby et al.[10] (2022) highlighted some important aspects in this regard. Firstly, it is observable the need for interactive agents to represent the personality and values of the company. Avatars should also be presented in a way that appeals to consumers, captivating their attention and encouraging participation. For customers, to feel interested and take part in the connection with the business, it is crucial to make avatars dynamic and personalized. In conclusion, effective avatars for developing consumer-brand connections should be created with the brand's image and values in mind, be fascinating to consumers, be interactive and tailored, and be utilized strategically to foster positive interactions across digital platforms.

[9] McGoldrick, P. J., Keeling, K. A., & Beatty, S. F. (2008). A typology of roles for avatars in online retailing. Journal of Marketing Management, 24(3-4), 433-461.

[10] Elsharnouby, M. H., Jayawardhena, C., Liu, H., & Elbedweihy, A. M. (2022). Strengthening consumer–brand relationships through avatars. *Journal of Research in Interactive Marketing*, (ahead-of-print), 1-21.

1.4.4 Avatars of the virtual worlds

As explained so far and as the literature reports, avatars can be employed by companies for various purposes and could have various physical and behavioral characteristics that are usually selected by marketers. These are often determined according to the values that the company embodies and wants to convey to the public and, if properly designed, the presence of a virtual assistant on the brand's sites and e-commerce platforms can significantly improve the consumer experience, customer satisfaction and may prompt the user to revisit the site and buy the company's products again.

In recent years, there have been many cases of companies implementing a chatbot or an avatar in their marketing strategies. For instance, IKEA's virtual assistant Anna (Figure 8), which was designed to be friendly and professional, has the task of answering questions and providing assistance to the clients of the brand.

Figure 8: IKEA virtual assistant, Anna

Source: ResearchGate

Other companies, such as Sephora, H&M, and Lego, integrated a virtual sales assistant in their digital shop to provide real-time support to their users, improve brand-consumer communication, and tailor the customer experience.

1.5 Gamification and avatars

A technique that has been spreading widely in recent years in several fields, from learning to advertising, and which also features user-created avatars, is gamification. It entails utilizing the fun and design components of video games to compel and involve people in tasks apart from playing games. The objective is to develop enjoyable and rewarding experiences that motivate the user to engage and carry out particular actions. Gamification is a great approach to improve the user experience and boost engagement in this way.

The association between gamification and the virtual persona could have numerous positive effects on user behavior. For instance, regarding educational purposes, people may participate in learning classes virtually in the metaverse with the use of an avatar and integrating gamification elements, such as rewards for answering right to questions. This would make the learning process more enjoyable, consequently improving satisfaction and capturing individuals' attention.

Gaming tools are used in different ways particularly with the aim of motivating and engaging individuals or customers. Therefore, these techniques may find an important application in the world of virtual marketing where fictional characters are developed and used as an extension of the brand identity or as salespeople whose task is to give live assistance to customers and promote desired behaviors, including patronage and buying intentions, customer fulfilment and the establishment of a long-term connection between brand and customer. In this context, users could be encouraged to interact with the virtual assistants even more when offered a prize, or a discount in return.

Strategies of gamification could be used by marketers for different objectives, for instance to maintain a high interest rate before the launch of a new product. Indeed, Sony offered the possibility to win a limited number of Play Station 5 consoles to users who managed to solve 5 riddles and open a digital vault.

Nike implemented a gamification marketing campaign on their app SNEAKRS which they use to launch limited edition shoes destined for a consumer niche. The brand marketing managers raffled off the possibility to purchase finite pieces of particular shoes through certain challenges overcome in the app. The strategy had a stimulatory effect because it appealed to consumers' desire to be among the lucky few who could get the product. Another reason for the success of this marketing tool was because consumers could meet new people as the instructions indicated to go to a physical meeting point. Finally, they stimulated the curiosity of app users by providing scarce information about the game before and because of the unpredictability of winning.

Another area where gamification is applied is in loyalty programs. By including fun features like setting objectives and earning points to unlock prizes, loyalty programs may be designed to be more engaging. One relevant example is Booking.com's Genius program which encourages consumers to book vacations with their account and accumulate points to offer discounts to customers who have reserved multiple holidays.

Other companies and apps that used gamification tools to boost desired consumer behaviors and promote their products and services are Coca-Cola, Starbucks, and McDonald's that offer discounts and rewards for playing games in their apps or for every purchase. There are also examples of brands that incentivize learning through playful tools such as Duolingo, a language learning software, or Microsoft Learn platform that encourage users to finish lessons and raise their score on the app. Lastly, by providing goals, challenges, and points for achieving certain objectives, the Nike Run Club App employs gamification to encourage users to exercise.

The use of gamification in marketing can also take the form of interactive promotional campaigns, such as the largest retailer in South Korea, eMart's. Wanting to boost customer turnout and sales during the lunch hour, which had been declining, the brand placed distinctive statues outside their malls which, in the sunlight in those hours, depicted a QR code that consumers could scan and receive rewards such as coupons and discounts. This strategy had the desired effect, increasing sales by 25 per cent during the targeted time slot.

In conclusion, businesses are using gamification more and more as a technique to engage their audience and market their goods and services. In order to provide personalization and a sense of connection in the game, avatar use in games and gamification apps has grown more widespread. Through the employment of virtual characters, players may build a virtual version of themselves, enhancing and customizing their game experience. Gamification may also be adapted in many platforms and technologies, including mobile applications, online games, and social media, and applied in a wide range of situations, from marketing to education.

1.6 Conclusions

After having explained in this chapter the theoretical background concerning the metaverse, extended technologies, and avatars and their global relevance in various fields, in particular that of commerce and business, the next chapter will focus on a literature review concerning the positive effects of the application of these innovative tools in the consumer experience and consumer behavior.

In particular, the next section will analyze all the studies that have been carried out on how the various features of avatars, augmented and virtual reality can satisfy certain consumer needs, such as that of social presence in digital contexts, create complete and realistic consumer experiences, determine user satisfaction, and establish lasting relationships between brand and audience.

Chapter 2 – Literature Review

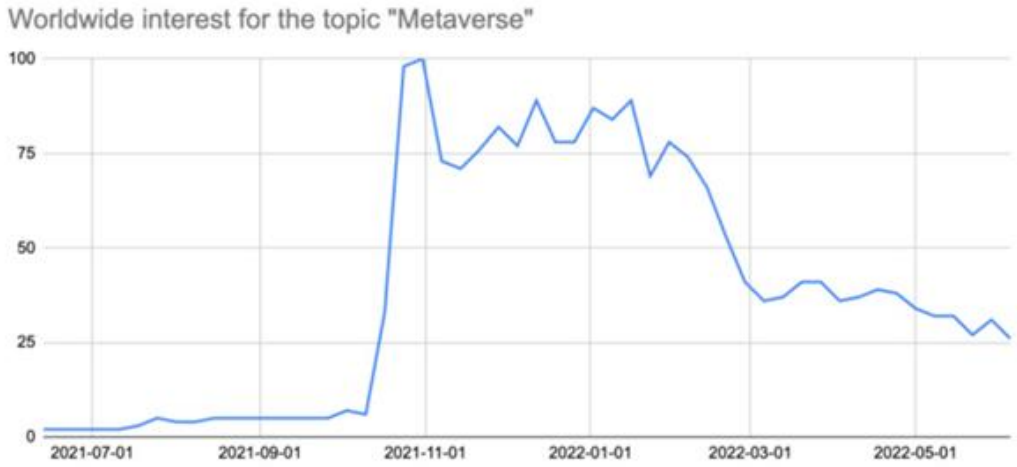
2.1 Current and expected trends in the metaverse

The Covid-19 crisis put millions of people all over the world in lockdown and brands wanted to reenact face-to-face experiences in the online environment. In this context, marketers employed innovative resources, such as augmented reality, virtual reality and avatars, that manifest in a virtual world where the user is completely absorbed and can interact with others and with the surroundings as well.

According to McKinsey[11]'s report 'Value creation in the metaverse' of 2022, the forecast effects of the metaverse on online shopping will be between $2 trillion and $2.6 trillion by 2030, while the marketing sector is likely to increase by $144 billion to $206 billion.

The development estimates of the market in the metaverse are surely positive, but their effectiveness in the future depends on various factors and the consumers' willingness to use it, interact in it and purchase in it is one of them. Google Trends shows that the worldwide interest in the term 'metaverse' grew significantly since October 2021, as shown in Figure 9.

Figure 9: Global searches for the topic 'Metaverse, 2021-2022



Source: Google Trends

McKinsey's report investigated how consumers perceive the metaverse and what are the factors that make them feel enthusiastic about it. According to their findings, almost 60% of the sample would rather have an engaging experience in the virtual world than do the same activities in the real world.

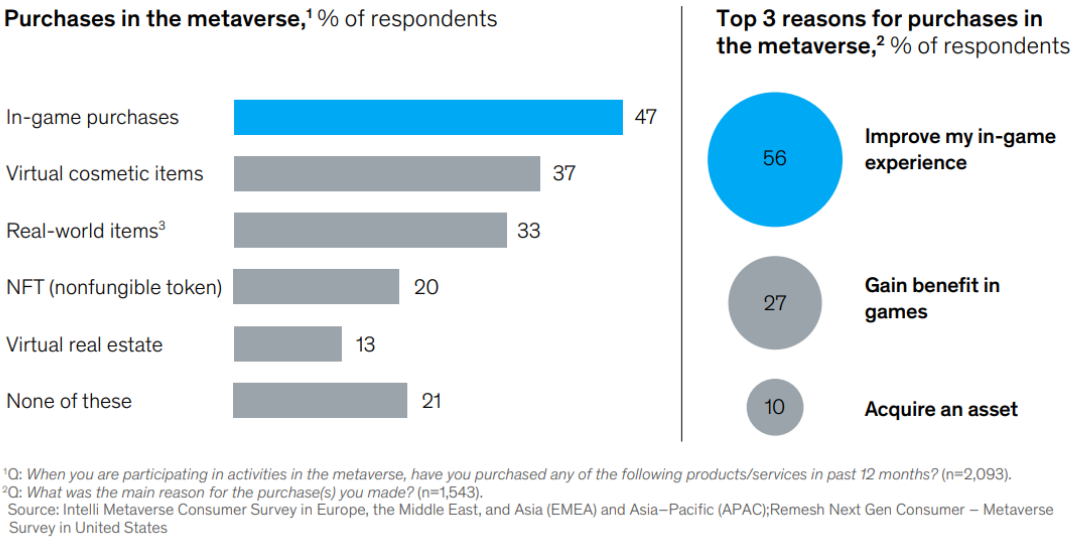
11 https://www.mckinsey.com/~/media/mckinsey/business%20functions/marketing%20and%20sales/our%20insights/value%20creation%20in%20the%20metaverse/Value-creation-in-the-metaverse.pdf

Consumers prefer to engage in the digital environment especially for purchasing, social or learning purposes, or to take part in an event.

The first reason why consumers worldwide would want to experience the metaverse is for its social aspect because it is an important means to connect and interact with others. Other decisive factors were the curiosity to discover these new dimensions, personalizing avatars, and participating in virtual events, such as concerts and shows.

The report's results highlighted that more than 60% of metaverse users had been involved in at least one virtual interaction with a brand, which represents a relevant opportunity to be exploited by companies. Regarding purchasing intentions in the digital world, participants of the survey declared that the main objective of their buying was to improve their metaverse experience, as shown in Figure 10 below.

Figure 40: Purchase data in the metaverse, 2022



[1]Q: *When you are participating in activities in the metaverse, have you purchased any of the following products/services in past 12 months?* (n=2,093).
[2]Q: *What was the main reason for the purchase(s) you made?* (n=1,543).
Source: Intelli Metaverse Consumer Survey in Europe, the Middle East, and Asia (EMEA) and Asia–Pacific (APAC);Remesh Next Gen Consumer – Metaverse Survey in United States

Source: McKinsey, Value creation in the metaverse.

Users of the metaverse create a virtual character to interact and engage in activities in the online environment. As reported in the following paragraph, researchers have been conducting several studies investigating the impact of different characteristics of the avatar on a sense of self-expression, autonomy and satisfaction of consumers. Especially when users have high levels of freedom to customize their online persona, the latter is seen as an extension of themselves and the more they identify with their avatar, the more immersed and gratified they will be in the experience.

Avatars could also be employed by companies as salespeople or as representatives of a product or a brand and used to interact directly with consumers providing an absorbing and more interactive

experience than the traditional shopping activity in a brick-and-mortar store. In recent years, the use of digital representations and augmented reality in marketing has become increasingly prevalent as companies strive to create more engaging and personalized experiences for their customers. Brands could also take advantage of the lower cost of creating a digital assistant rather than implementing traditional promotional activities, and the possibility of using the same avatar in different platforms and websites.

Virtual assistants, which are digital representations of individuals or brands, can be customized to reflect different personalities, characteristics, and physical attributes. This allows companies to tailor their marketing efforts to specific customer segments and provide more immersive and interactive experiences. Avatars in marketing strategies could be used to express the core values and beliefs that the company wants to depict and communicate to their customer base.

However, the effectiveness of avatar marketing in influencing consumer behavior and enhancing customer experience remains a topic of debate in academic literature. This chapter aims to provide an overview of the existing studies that have explored the relationship between avatar marketing and consumer behavior, with a particular focus on the role of virtual characters in creating a more involving and memorable customer experience. By synthesizing the findings of these studies, this review aims to shed light on the potential benefits and limitations of avatar marketing and explains the starting point of this research.

2.2 Literature Review

2.2.3 Augmented Reality and its influence on online consumer behavior

Last august, McKinsey published the "Technology Trends Outlook 2022"[12] about the immersive-reality space, explaining this new flow of innovation that will revolutionize multiple industries across the globe.

For instance, these types of software could replicate physical events like concerts, fashion displays, and sporting events in the digital world, or enhance the retailing shopping experience through digital showrooms, AR applications where consumers can virtually try on clothing, or using programs that display furniture in the consumers' houses before buying it and giving digital home tours before purchasing a property. In the e-commerce context, the report stated that 33% of active users in the metaverse have bought physical items there already.

The immersive experience in the virtual world is provided by four different types of technology: spatial computing, mixed reality, augmented reality and virtual reality. Although, the two most relevant are AR and VR which are also the ones where the user feels most engaged and absorbed in the activity. Indeed, the former enables the individual to interact with virtual features in the real surroundings, and the latter puts the user in a brand-new fully digital world that is completely separated from the real environment.

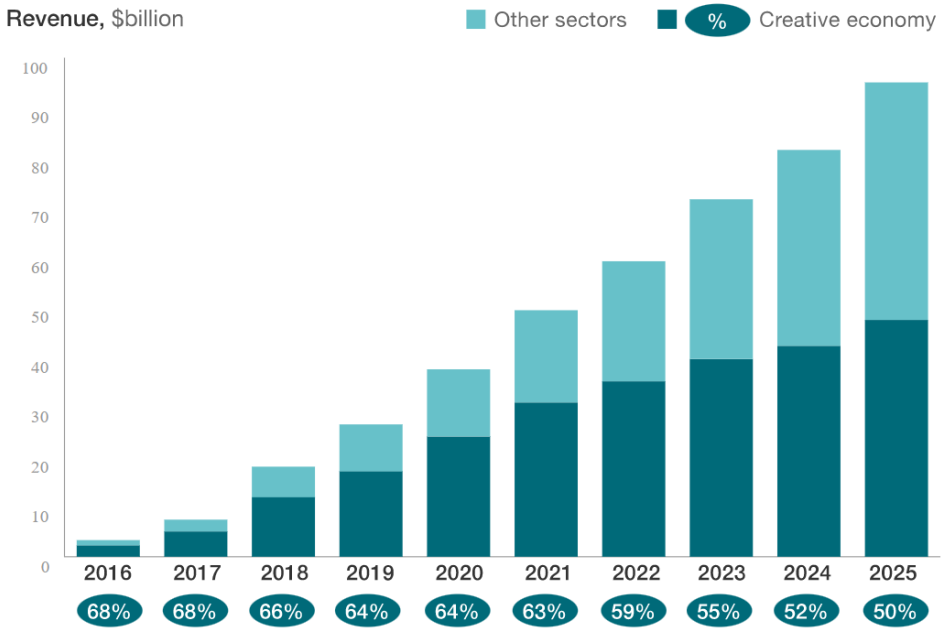
According to McKinsey, augmented reality and virtual reality technologies still need crucial improvements that will likely require another decade or so, even though many companies all over the world have already started to incorporate them into their activities. For instance, they implement AR and VR to enhance customer experience, to increase the efficiency of their production processes, to solve problems by simulating virtual prototypes of their products, or to provide training for their employees directly in the metaverse.

It was recently projected by Goldman Sachs that enhanced and virtual reality's growth will lead to a 95-billion-dollar market by 2025. Hall and Takahashi[13] (2017) claimed that the industries that presented the strongest request for these technologies are media and entertainment, gaming and shopping, even though it is also predicted that also other industries will employ more of them in the future, as depicted in Figure 11 hereunder.

[12] Chui, M., Roberts, R., & Yee, L. (2022). McKinsey technology trends outlook 2022. *McKinsey & Company*, *24*.

[13] Hall, S., & Takahashi, R. (2017, September). Augmented and virtual reality: The promise and peril of immersive technologies. In *World Economic Forum* (Vol. 2).

Figure 51: Forecasted expansion of augmented and virtual reality, 2016-2025



Source: Hall, S., & Takahashi, R. (2017, September). Augmented and virtual reality: The promise and peril of immersive technologies. In World Economic Forum (Vol. 2).

Augmented reality (AR) is a tool that blends the real world with computer-generated video and auditory features instantaneously. Users may engage with digital material in the physical environment, which improves their understanding of reality. The possible uses of AR technologies are countless, such as advertising, educational, retailing, leisure, gaming, military, fitness, product design.

Through innovation and technological progress in recent years, the world of e-commerce has been revolutionized and continues to integrate new models that enhance customer engagement by developing immersive experiences. In 2022, Kumar[14] proposed an overview of the current knowledge regarding the use of enhanced reality in the online shopping context. The article outlines the elements influencing the use of augmented reality in online commerce. According to the studies evaluated, enhanced reality may improve online shoppers' purchasing experiences, raise brand and product engagement, and lower the percentage of product returns.

Moreover, the employment of augmented reality can optimize customers' perceptions of the value of items and their confidence in online shopping. Ultimately, these technologies may help online

[14] Kumar, H. (2022). Augmented reality in online retailing: a systematic review and research agenda. *International Journal of Retail & Distribution Management*, *50*(4), 537-559.

shops stand out from their rivals, foster stronger client relationships, and boost overall business profitability.

The paper by Javornik[15] (2016) investigates users' emotional, cognitive, and behavioral responses to augmented reality apps. The findings of this study reveal that, when compared to a virtual experience without enhanced reality, AR evokes a high positive emotional reaction and boosts users' attention capacity. In addition, these technologies improve the user's memory and sense of the quality of the interaction.

Furthermore, the researcher investigated the concept of 'flow' and its mediating effect on how the consumers react to AR. Csikszentmihalyi[16] (1990) defines 'flow' as a state of complete immersion in an activity marked by a sensation of energetic attention, full engagement, and delight in the activity's process. 'Flow' is considered to be very gratifying and can lead to greater motivation, creativity, and performance. According to Javornik (2016), this immersive principle explains the effect on consumer behavior and emotional response to the application of augmented reality in the online retail context.

With their paper, Poushneh and Vasquez-Parraga[17] (2017) contributed to the literature and analyzed the influence of augmented reality on customer shopping experiences in retail stores. The study was done on a sample of 103 people who were separated into two groups: those who used augmented reality while shopping and those who did not. In terms of happiness and purchase intention, individuals who utilized enhanced reality had a more favorable shopping experience than those in the control group. Additionally, participants in the augmented reality group demonstrated a higher level of emotional involvement in the purchase process.Therefore, the application of augmented reality appears to improve consumer satisfaction, purchase intentions and emotional experience in retail shopping.

Rauschnabel, Felix, and Hinsch[18]'s article (2019) examines the potential of using mobile AR to improve customer engagement with the brand and the shopping experience. The authors specifically

[15] Javornik, A. (2016). 'It's an illusion, but it looks real!'Consumer affective, cognitive and behavioural responses to augmented reality applications. Journal of Marketing Management, 32(9-10), 987-1011.
[16] Csikszentmihalyi, M. (1990). Finding Flow: the psychology of optimal experience. New York: Harrer and Row.

[17] Poushneh, A., & Vasquez-Parraga, A. Z. (2017). Discernible impact of augmented reality on retail customer's experience, satisfaction and willingness to buy. Journal of Retailing and Consumer Services, 34, 229-234.
[18] Rauschnabel, P. A., Felix, R., & Hinsch, C. (2019). Augmented reality marketing: How mobile AR-apps can improve brands through inspiration. *Journal of Retailing and Consumer Services*, *49*, 43-53.

believe that AR applications may be utilized to generate engaging and personalized marketing experiences, which can enhance customer interest in a product or service and improve brand perception. Mobile AR can assist buyers in more correctly and realistically seeing things before acquiring them, lowering the likelihood of post-purchase disappointment.

The researchers give a variety of case studies that show how mobile augmented reality may improve the consumer experience, increase sales, and build brand image. AR applications for presenting new items, creating immersive gaming experiences, and personalizing the buying experience are some examples.

Ultimately, the paper presents an overview of the marketing prospects provided by mobile AR and argues that businesses should consider mobile AR as a strategic marketing lever to boost customer participation and brand strength.

2.2.4 How enhanced reality can substitute the customers' need for touch

One of the most significant limitations to online shopping is the lack of contact. Consumers are not able to feel, touch or try on the products they intend to purchase and, therefore, have a higher perceived risk during the decision-making process. Researchers claim that the employment of augmented reality could be a valid replacement for customers who usually need to physically touch products before buying them because it enables them to observe closely the items in a plausible context, so it feels almost like users could really have their hands on them. Consumers could collect more information on the company's offerings through augmented reality features, for instance, about the design, sizes, fabrics and materials, in order to decrease the perception of risk in the purchase caused by the fact that users are not shopping in a physical store and cannot feel the products in person.

The article by Gatter, Hüttl-Maack, and Rauschnabel[19] (2022) investigated augmented reality's efficacy in meeting consumers' need to physically touch things before purchasing them.

The study included 268 individuals who were separated into three groups and examined items using different modalities: augmented reality, virtual reality, and regular in-store purchasing.

The findings show that while the enhanced reality experience did not totally satisfy the consumers' need to physically touch the objects, it did have a favorable influence on their sense of product

[19] Gatter, S., Hüttl-Maack, V., & Rauschnabel, P. A. (2022). Can augmented reality satisfy consumers' need for touch?. *Psychology & Marketing*, *39*(3), 508-523.

quality. Furthermore, the augmented reality experience had a greater impact on perceived evaluation of the offering than the virtual reality experience.

The research concluded that while enhanced reality may be a viable option for the product purchase process, it cannot totally replace the experience of touching personally items in a store.

One of the latest technologies, used mainly in the cosmetic and clothing industry, is the virtual try-on (VTO) apps which let consumers see how the items or accessories look on themselves without having to try them on physically using augmented reality technology.

Consumers previously used these VTO apps more for beauty brands than for apparel ones because they considered the information given by this software not very reliable due to the low authenticity and poor quality of the virtual representation.

The issue with augmentation quality, however, appears to have been rectified in the most recent generation of garment VTOs (Lee et al., 2020) since these apps now provide a user experience that is specifically a combination of personalization and customization.

Companies can tailor marketing efforts to specific customers through personalization (Bleier et al., 2018); apparel VTOs rise to the challenge by enabling users to either create their own photorealistic avatar using the mobile device's camera or select from a variety of pre-loaded avatars with various body types (Forma Technologies Inc., 2021; Zeekit, 2021).

Contrarily, customization allows consumers to take on the role of creators and alter features such as the color or fabric of a clothing item. Similarly, the latest VTO applications allow users to experiment with their look by combining several tops and bottoms on their virtual persona to produce hundreds of outfits in a matter of minutes that can either be purchased right away or stored in a wish list.

The study by Tawira and Ivanov [20] (2023) explores how customization and personalization of virtual try-on apps can improve the customer experience, influence purchase and create a new business model. The findings demonstrate that customizing virtual try-on apps enhances customer satisfaction and raises purchase intent. The ability to alter clothing to fit customer's preferences, such as color or style, can boost client evaluation and develop brand loyalty. According to the

[20] Tawira, L., & Ivanov, A. (2023). Leveraging personalization and customization affordances of virtual try-on apps for a new model in apparel m-shopping. *Asia Pacific Journal of Marketing and Logistics*, *35*(2), 451-471.

researchers, businesses looking to stand out from competitors and provide customized purchasing experience to clients may find this new business model advantageous.

The paper by Ivanov, Head, and Biela[21] (2022) investigates how the usage of haptic imagery and augmented reality (AR) affects comfort while deciding to purchase online using mobile devices.

Haptic imagery is a tool that is used with enhanced reality to develop the consumer perception of actually feeling or touching the product when it is not possible to, such as in the case of online e-commerce. Consequently, the buyers will be more at ease while picking an online retailer and making the purchase decision in the web stores. This positive influence of AR and haptic images in digital shops is strengthened when customers are already familiar with these technologies and are able to get full benefits from them.

In conclusion, augmented reality technologies, such as virtual try-on applications and many others, which have already been adopted by many companies across numerous industries worldwide, represent a powerful tool for brands. They could have several positive effects on the online shopping experience in general, and they could increase the level of enjoyment customers feel when purchasing in e-commerce stores, meet their need to touch the offering by displaying the products as more realistic to the users that could observe them closely and better assess their value, with the final goal of decreasing the uncertainty that derives from buying online.

[21] Ivanov, A., Head, M., & Biela, C. (2022). Mobile shopping decision comfort using augmented reality: the effects of perceived augmentation and haptic imagery. *Asia Pacific Journal of Marketing and Logistics*, (ahead-of-print).

2.2.5 The use of avatars and their positive impact on the online customer experience

Recent studies have demonstrated the beneficial effect of avatar-mediated interactions on the online purchasing experience. Consumer-avatar communications, or the mere presence of a virtual assistant, on an e-commerce website have numerous advantages in the field of consumer behavior. Digital assistants completely transform the virtual experience by improving user engagement, developing trust and, eventually, brand loyalty, smoothing the online shopping process. They can humanize the brands because they could be used as a human-like representation of the company or a product, the consumer interacts with it and will feel closer and emphatic to the brand.

Bleize and Antheunis [22] (2019) performed a literature review wanting to identify the most influential factors regarding customers' purchasing intentions in online shopping websites. According to the authors, perceived entertainment, the quality of social relationships within the virtual world, personalization of the virtual character, and user-friendly functionality are the factors that have the most significant impact on customers' willingness to purchase in the online environment. They explained that giving the possibility to the users to create and modify autonomously their virtual persona is a means to enable them to express themselves and have original experiences in the online world.

Elsharnouby, et al.[23] (2022) conducted a study whose objective was to assess how the presence of an avatar could influence consumers' perceptions and emotions towards the brand. In line with previous research, this article revealed that avatars are effective in increasing the delight of consumers during the online customer experience and consequently improving their contentment. The authors also examined the effects of using avatars on the way consumers perceive and evaluate the brand, finding out that consumer-virtual salesperson interactions have a positive impact on attitude toward the brand, which may have a substantial influence on buying intentions, customer loyalty, and willingness to pay a higher price for the brand (Aaker, & Keller[24], 1990).

The results demonstrated that the existence of the avatar increased consumer-brand interactions, improving consumers' interest, familiarity, and attachment to the brand. Furthermore, avatars were rated well as effective tools for boosting the user experience on the website and increasing contact

[22] Bleize, D. N., & Antheunis, M. L. (2019). Factors influencing purchase intent in virtual worlds: a review of the literature. Journal of Marketing Communications, 25(4), 403-420.
[23] Elsharnouby, M. H., Jayawardhena, C., Liu, H., & Elbedweihy, A. M. (2022). Strengthening consumer–brand relationships through avatars. Journal of Research in Interactive Marketing, (ahead-of-print), 1-21.
[24] Aaker, D. A., & Keller, K. L. (1990). Consumer evaluations of brand extensions. Journal of Marketing, 54(1), 27-41.

with the business. The paper suggests that digital assistants may be an effective marketing tactic for businesses since they improve the customer journey and deepen the consumer-brand relationship.

Etemad-Sajadi[25] (2016) investigated online real-time interactivity and its significant positive impact on patronage intentions due to the employment of virtual assistants. The research demonstrated that the level of engagement and the realism of avatars were significant predictors of customer's willingness to interact and revisit an online store. The results suggested that companies and organizations should consider incorporating digital characters into their online platforms to increase the likelihood that consumers will return to the virtual store and their propensity to purchase the goods. The study showed that users' trust in the information provided on a website is a key factor in their desire to engage in real-time interaction and their emotional appeal towards the website. This highlighted the importance for companies to ensure that all information provided by their avatars is up to date, as it can significantly impact users' enjoyment and willingness to interact with the company through online channels.

Previous literature defined and studied the concept of social presence, which is considered as "*the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationship*" (Short, Williams, and Christie, 1976) and numerous researchers discussed how the social presence in an online shopping experience could be increased through the inclusion of virtual assistants in the e-commerce stores. This definition highlights the importance of the perceived presence of others in a communication context and the quality of the interpersonal relationship that emerges from that interaction.

Indeed, Etemad-Sajadi (2016) demonstrated that the avatar's social presence has a significant impact on users' trust in the information found on the website, particularly when avatars are designed to have a more human-like appearance. The study found that the social presence of the avatar impacts users' emotional appeal towards the website, although to a lesser extent than trust. These findings highlighted the importance of designing avatars with human and social cues to increase consumer perceived reliability of online data and their enjoyment of visiting the website.

According to the author, further research could focus on the specific design features of avatars that influence patronage intention, as well as the impact of avatars on other outcomes such as user engagement and satisfaction.

[25] Etemad-Sajadi, R. (2016). The impact of online real-time interactivity on patronage intention: The use of avatars. Computers in human behavior, 61, 227-232.

De Amorim et al.[26] (2022) conducted a study on AR digital assistants in websites and how they influence shopping actions through the stimulation of users' reactions. The researchers carried out an experiment where they asked participants to observe products in a 2D environment or in a 3D augmented reality context. The results of the study highlighted that AR technologies enable consumers to examine the offerings in a more realistic manner than in the 2D store and this enhances their purchasing intentions and brand engagement.

The theoretical background of the article includes the Media Richness Theory by Daft and Lengel[27] (1984) which explains the quality of communication based on the media that delivers the messages. According to this concept, a communication channel can be considered 'rich' when the information is provided through multiple ways. For instance, face-to-face interaction with an avatar in an e-commerce store is much richer than the simple provision of written messages, because consumers can collect more knowledge about the brand or the product from the tone of voice of the virtual assistant, its facial expressions, and its body language.

The Media Richness Theory is used by De Amorim et al. (2022) to prove the benefits of augmented reality on purchasing behavior, especially in the online environment where consumers do not have the possibility to touch or feel the products before buying them and, therefore, perceive more uncertainty in the decision-making process. AR technologies could improve the customer experience, enhance the perceived quality of the offerings, develop trust in the brand, and heighten the willingness to buy.

[26] de Amorim, I. P., Guerreiro, J., Eloy, S., & Loureiro, S. M. C. (2022). How augmented reality media richness influences consumer behaviour. International Journal of Consumer Studies, 46(6), 2351-2366.

[27] Daft, R. L., & Lengel, R. H. (1984). Information richness: A new approach to manager information processing and organization design. In B. Staw, & L. L. Cummings (Eds.), Research in organizational behavior. JAI Press.

2.2.5.1 Avatar identification and customization

One of the most researched topics in literature in this field is the avatar's appearance, the clothes it wears, the gender, and all the other physical features that characterize it and how these affect the customer perception of the virtual assistant, as well as their attitude towards it which also determines their willingness to interact with it, to trust what it says and consequently reflect these feelings onto the brand.

In their study, Suh et al.[28] (2011) explored the concept of avatar use and the impact of the virtual assistant's exterior aspect on user experience and behavior. The authors proposed the dual-congruity perspective, which suggests that users will have a more positive experience and exhibit greater involvement with virtual personas that share both visual and psychological similarity with them. The research found that individuals who interacted with avatars that resembled them reported higher levels of immersion, presence, and enjoyment. Users with congruent avatars were more likely to engage in desired behaviors, such as purchasing virtual goods or intentions to use the online character. The authors suggest that the dual-congruity perspective could help designers create more effective avatars that lead to enhanced user experiences and inspire wanted actions in consumers.

The role of avatars as salespeople and their impact on consumers' communication style, trust, and intentions was investigated by Keeling et al.[29] (2010). The authors conducted an experiment and found that the use of virtual assistants increased consumers' trust and intentions to purchase, compared to a non-avatar control condition. The study distinguishes between two different styles of communication that could be implemented by the salesperson avatar: task-oriented and social-oriented. The former is focused on efficiency, while the latter concentrates on building relationships with the consumers. It was highlighted that the communication approach of the virtual sale assistant had a significant impact on consumer behavior, with the friendly avatar leading to higher levels of reliability and patronage intentions. Their suggestion was that the use of avatars in online sales could be a useful tool for marketers to increase sales and the likelihood to develop brand loyalty, and that the communication style of the avatar should be carefully considered in order to maximize its effectiveness.

[28] Suh, K. S., Kim, H., & Suh, E. K. (2011). What if your avatar looks like you? Dual-congruity perspectives for avatar use. *MIs Quarterly*, 711-729.

[29] Keeling, K., McGoldrick, P., & Beatty, S. (2010). Avatars as salespeople: Communication style, trust, and intentions. *Journal of Business Research*, *63*(8), 793-800.

On the same wavelength, Xu et al.[30] (2022) investigated the conversational approach of digital assistants in the online environment and its impact on customer satisfaction. Their hypothesis was that a relational and informal approach has a more advantageous effect on customer experience than a way of communicating that is solely focused on efficiency and problem solving.

Another important study by Moon, et al.[31] (2013) examined the impact of avatar-based communication with both a salesperson avatar and a peer consumer avatar in the virtual shopping environment, demonstrating its positive effects on customer experience and brand attitude. The beneficial impact of these avatar-mediated interactions on social presence, willingness to purchase, perception of the label and customer satisfaction is amplified when consumers interact with both a virtual salesperson and other virtual consumers.

Research demonstrated so far that the use of avatars in a retail shopping context can enhance customer experience, influence positively purchase and patronage intentions, as well as develop trust and a positive attitude toward the brand. These advantages are enabled especially when the consumer identifies with the avatar that he/she interacts with. In order to make full use of these benefits, brands and marketers should try and understand what stands behind the users' decisions when designing an avatar, and this is what Ducheneaut, et al.[32] (2009) investigated in their study.

Their research aimed to explore the relationship between avatar customization and player behavior, particularly with respect to engagement and retention. The analysis pointed out three main objectives that the participants had in mind when personalizing their avatar. The first one was to create an idealized version of themselves, giving their online persona the desired characteristics that the user does not own in real life. Multiple participants wanted instead to create an unconventional virtual character that distinguishes himself/herself from others. And finally, others simply adopted a popular style, trying to look like a particular public figure. The authors found that there were significant discrepancies based on age and gender, for instance, the fact that women are more likely to develop an avatar which is their ideal self than men.

[30] Xu, Y., Zhang, J., & Deng, G. (2022). Enhancing customer satisfaction with chatbots: The influence of communication styles and consumer attachment anxiety. *Frontiers in Psychology*, 4266.
[31] Moon, J. H., Kim, E., Choi, S. M., & Sung, Y. (2013). Keep the social in social media: The role of social interaction in avatar-based virtual shopping. *Journal of Interactive Advertising*, *13*(1), 14-26.
[32] Ducheneaut, N., Wen, M. H., Yee, N., & Wadley, G. (2009, April). Body and mind: a study of avatar personalization in three virtual worlds. In Proceedings of the SIGCHI conference on human factors in computing systems (pp. 1151-1160).

Ducheneaut et al.[33] (2009) also illustrated that the more the user customized their avatar as an optimization of themselves, the stronger the tie with their virtual persona and consequently the intentions to use the avatar.

Poncin and Garnier[34]'s (2012) conducted another relevant study proving the positive impact of avatar identification with the users' engagement in a virtual reality online store, demonstrating that this is true more for women than for men. The authors highlighted that the more the user recognizes himself/herself in the online persona and is involved in the online experience, the higher the satisfaction with the e-commerce website. Poncin and Garnier (2012) pointed out that when creating for the first time their avatar, more than half of the participants of their research attempted to make the virtual character to be resembling them, and more than 30% of them desired to create an enhanced self, confirming the outcomes of the previous study of Ducheneaut et al. in 2009. Finally, a small portion of the sample created an unrealistic fantasy avatar, and they tended to be more men than women who, instead, would have a propensity for replicating themselves.

Gupta and Zeithaml[35] (2006) defined customer loyalty as "*the degree to which a customer is committed to a particular brand and chooses to continue doing business with that brand despite the availability of other options*", in the Journal of Marketing Research. The basis for consumers to repeatedly purchase one label can be identified in the degree to which the offerings of that firm meet their expectations and generate pleasing experiences. Regarding this matter, Poncin and Garnier's (2012) study showed that the positive effect of avatar identification on customer satisfaction is sustained and strengthened over time, which could eventually result in making users committed to the label and buy again in the future in the virtual website.

Mull, et al.[36] (2015) created four different types of virtual characters that would act as sales personnel for an e-commerce website and asked 120 participants to rate them based on certain characteristics, which included reliability, physical similarity, appeal and the likelihood that they would interface with the avatars. The sample evaluated more positively the virtual characters that

[33] Ducheneaut, N., Wen, M. H., Yee, N., & Wadley, G. (2009, April). Body and mind: a study of avatar personalization in three virtual worlds. In Proceedings of the SIGCHI conference on human factors in computing systems (pp. 1151-1160).
[34] Poncin, I., & Garnier, M. (2012). Avatar identification on a 3D commercial website: Gender issues. *Journal For Virtual Worlds Research*, *5*(3).
[35] Gupta, S., & Zeithaml, V. (2006). Customer metrics and their impact on financial performance. *Marketing science*, *25*(6), 718-739.
[36] Mull, I., Wyss, J., Moon, E., & Lee, S. E. (2015). An exploratory study of using 3D avatars as online salespeople: The effect of avatar type on credibility, homophily, attractiveness and intention to interact. *Journal of Fashion Marketing and Management*.

were more human-like than the others regarding all the four variables investigated in the survey. Given the results of their study, the authors advised online marketers to provide digital representations that resemble their target audience, deducing that users would be more inclined to engage with human-shaped avatars that have similar characteristics. Even better, Mull et al. suggested that digital shops could give the user the possibility to customize their virtual salesperson, which could improve the probability of interaction, patronage intentions, and customer satisfaction with the e-commerce site.

Online retailers often implement virtual assistants that are not able to communicate with users, but still offer predetermined messages to welcome consumers on the company website, present the brand and the articles on sale. In 2017, Liew, et al.[37]'s study demonstrated that even if the users do not have the opportunity to have two-way communication with the avatar, its mere presence could present positive effects on some variables, including social closeness, trustworthiness and propensity to revisit the web store and purchase the products offered. The researchers found that the impact of the non-engaging avatar experienced relevant differences regarding the gender of the user. Indeed, female consumers did not commonly consider the virtual assistants as trustworthy as males did. This lack of belief could have an unpleasant result on women's perceptions and could hinder the developing of trust on the website or cause them not to return and buy from the online retailer again. Overall, the authors concluded that the presence of the online assistant has a beneficial outcome on men's evaluations of all the variables involved in this experiment.

Lin, et al.[38]'s (2021) wondered what happens when there is a conflict between the advice of the avatar salesperson and the suggestions of peer consumers online and what are the factors that could increase the likelihood that the user prefers to follow the virtual seller's guidance in these situations. Their research investigates how the design of virtual vendors might help buyers avoid suggestion discords in online buying environments. The study looked at how three avatar design variables (professionalism, friendliness, and realism) affected referral conflicts and consumer views of the online seller's trustworthiness.

According to the findings, a more professional and compassionate avatar can lower consumers' perceptions of suggestion conflicts while increasing customers' trusting in the virtual salesperson.

[37] Liew, T. W., Tan, S. M., & Ismail, H. (2017). Exploring the effects of a non-interactive talking avatar on social presence, credibility, trust, and patronage intention in an e-commerce website. *Human-centric Computing and Information Sciences*, *7*, 1-21.
[38] Lin, Y. T., Doong, H. S., & Eisingerich, A. B. (2021). Avatar design of virtual salespeople: Mitigation of recommendation conflicts. *Journal of service research*, *24*(1), 141-159.

The authors suggest that the design of virtual sellers can be an effective method for mitigating recommendation conflicts and increasing customers' trusting of salespeople avatars.

Gammoh, et al.[39] (2018) investigated consumer perceptions about humanoid avatars used in advertising, concentrating on the impacts of category and image knowledge. According to the findings of their research, consumers have a beneficial reaction to humanoid avatars in marketing, especially when they are employed in areas with which they are familiar. Consumers evaluated humanoid avatars with appealing physical looks more favorably. These findings imply that using human-resembling virtual characters in advertising can be a successful strategy to capture customers' attention and raise interest in offered items or services, particularly when utilized in a targeted manner, with pictures that match consumers' interests, and when users already have a certain knowledge of the promoted products. On the contrary, they observed that new consumers or the ones that have low awareness of the industry are more likely to have negative attitudes toward an advertising message delivered by a virtual salesperson.

Another study that examined the effect of the use of avatars as salespeople on customer trust in the brand is the one of Bauer, et al.[40] (2006) who conducted an online survey providing virtual sales agents with different gender and characteristics and asking the participants to decide which one to interact with. The findings of this research are consistent with the ones of the articles mentioned above, demonstrating that the sample preferred avatars that resembled themselves, and this self-conformity enhanced the already positive effects that the virtual characters have on the variables examined by the authors, namely purchase intentions, enjoyment of the e-commerce site, and favorable customer evaluation of the products and the supplier. Bauer et al. concluded suggesting that online retailers should grant users the chance to select the avatar they prefer which often results in improving the relational worth by meeting consumers' needs and preferences. They advise brands that virtual salespeople could be used to modify positively customer perception of the essence and characteristics of the supplier, giving the fact that they give almost endless possibilities of personalization and are under direct management of the retailer.

[39] Gammoh, B. S., Jiménez, F. R., & Wergin, R. (2018). Consumer attitudes toward human-like avatars in advertisements: The effect of category knowledge and imagery. *International Journal of Electronic Commerce*, *22*(3), 325-348.
[40] Bauer, H. H., Neumann, M., Haber, T., & Mader, R. (2006). Virtual sales agents. *Marketing Theory and Applications*, *1*, 226-240.

Avatar personalization could be an effective tool for the successful outcome of advertising campaigns or persuasive messages on users, as Hanus and Fox[41]'s (2015) research showed. They conducted an analysis with two scenarios, one where the sample was notified in advance about the incoming of a persuasive message and the other where they were not aware of it. In the next phase, some participants could personalize the physical characteristics of the virtual agent that would be talking to them, and others could just observe passively the customization made by someone else.

They demonstrated that when customers could personalize their virtual sales agent, this made them feel self-sufficient, capable, and pleased. Therefore, according to these findings, customizing the look of an online salesperson can be an efficient marketing tactic for increasing brand preference and customer buying intentions.

Last year, Park and Kim[42] gave another contribution to the literature in the field of avatar identification examining its impact on customer purchase behavior in a virtual world. The authors performed an experiment in which participants interacted with customized virtual agents in an online shopping experience. The findings revealed that consumer-avatar recognition increased participants' buying intentions positively. Furthermore, the authors discovered that avatar identification was positively connected with real-world purchase intentions as well.

2.2.5.2 Shortcomings of humanizing avatars

Despite the benefits found in the research reported so far, some disadvantages derived from avatar employment have been documented by other articles. For instance, Hadi[43] (2019) investigated possible situations in which anthropomorphic virtual assistants could have the opposite effect on customers, especially when they are dissatisfied with the service or their experience with the brand. It is very common that when customers engage with a humanoid digital assistant, they will assume and pretend that it is able to communicate as a human would do. On the other hand, it could happen that the chatbot does not satisfy users' preconceptions and this could have undesirable consequences, specifically when the consumer is already annoyed. Hadi's research highlighted that, in these cases where angry consumers are disappointed with the interaction and support of the

[41] Hanus, M. D., & Fox, J. (2015). Persuasive avatars: The effects of customizing a virtual salesperson′ s appearance on brand liking and purchase intentions. *International Journal of Human-Computer Studies*, *84*, 33-40.

[42] Park, J., & Kim, N. L. (2022, December). From Metaverse to the Real World: The Role of Avatar Identification in Consumer's Virtual Purchasing Behavior. In International Textile and Apparel Association Annual Conference Proceedings (Vol. 79, No. 1). Iowa State University Digital Press.

[43] Hadi, R. (2019). When humanizing customer service chatbots might backfire. *NIM Marketing Intelligence Review*, *11*(2), 30-35.

online assistant, the negative repercussions are intensified if the chatbot has human characteristics. In conclusion, the author recommends online retailers to find ways to limit the possible damage when these negative outcomes happen, including trying to assess the mood of the user previously than the interaction with the virtual assistant takes place, or use chatbots that are dehumanized to deal with dissatisfied customers, or lowering expectations by clarifying that users are about to engage with a machine and not with another person who thinks and acts like them.

2.2.6 How Virtual Reality meets customer needs

Lau and Ki[44] (2021) analyzed the environment of virtual reality fashion apps and how these platforms can affect favorably consumer intentions to use and buy in-app by satisfying specific users' needs. The researchers based their article on the self-determination theory (SDT), which states that human actions are driven by the accomplishment of three particular needs: "*competence, autonomy and relatedness*" (Ryan & Deci, 2000). The paper examined the techniques and practices that enable the satisfaction of these three fundamental needs.

The first one can be considered fulfilled when the individual is faced with difficulties or tasks and manages to overcome them. In this context, marketers could include gamification elements in the VR fashion apps, including tasks to be completed to earn points or rewards. These practices will make the consumers feel like they are capable of prevailing challenges thanks to their abilities and will accomplish the essential need of competence.

Secondly, according to the authors, the fundamental autonomy could be realized by giving the user the possibility to customize their online character and choosing its characteristics like hairstyle, body structure, eye color, clothing, etc. The study demonstrated that the more the options to choose from, the more the consumer's requirement for autonomy is gratified. Aligned with other research in the field, Lau and Ki stated that consumers consider their virtual characters as extensions of themselves as the degree of personalization increases which in turn improves the autonomy satisfaction.

Lastly, the writers claim that incorporating appealing features in the VR retailer apps can raise users' feelings of relatedness and, as a result, their propensity to buy in-app by fostering a sense of community and connection with both other users and the brand. The study emphasizes how crucial

[44] Lau, O., & Ki, C. W. (2021). Can consumers' gamified, personalized, and engaging experiences with VR fashion apps increase in-app purchase intention by fulfilling needs?. *Fashion and Textiles, 8*, 1-22.

it is to integrate elements into VR fashion applications that appeal to customers' need for social connection and interaction in order to boost their engagement and buying intentions.

The final insights of the paper relate to how the satisfaction of these feelings could advantageously impact consumer shopping behavior in these applications. They investigated the propensity to use the VR apps repeatedly and the buying intentions. The results of their study showed that the social and closeness aspect is the one that has the least impact on users' intentions, while the influence of competence and autonomy is crucial. Lau and Ki suggested that online retailers should prioritize the integration of more personalizing features for users in order to enhance their sense of autonomy and self-expression which will lead to increase their time spent on the app and consequently their purchases in-app.

Most of the previously mentioned research shows the advantages for brands of using virtual agents that are as similar to their customers as possible. In particular, when avatars are human-like and resemble the user, prior cited studies demonstrated the beneficial impact on several customer shopping actions in the online world, such as the increase of time and money spent in the e-commerce site, the propensity to use and interact with the VR sales agent and self-expression obtained by modifying the physical characteristics and clothing of the avatar, which result in providing unique and immersive customer experiences.

2.2.7 The influence of avatars on customer trust

Trust is at the basis of interactions with others and enables an individual to lay the foundation to build a confiding relationship with people around. Even when users are communicating with a virtual sale assistant, it is important that the avatar is perceived as trustworthy for the consumer to transfer that reliability on the brand and to develop a long-term connection with it and the retailer. Researchers wondered in the last few years about a way to compute the degree of trust that consumers put in digital assistants. To narrow this gap in literature, Lin et al.[45] (2023) run an experiment in virtual reality and asked participants to browse inside a maze where they could seek the avatar's suggestions to exit the labyrinth and decide whether to listen to them or not. The aim of the research was to observe and collect data from users' actions and establish the degree of reliability they put in the virtual character.

The researchers made the participants believe that when they encountered a virtual persona inside the maze, they were talking to a human behind it that had no interest in helping or misleading them,

[45] Lin, J., Cronjé, J., Käthner, I., Pauli, P., & Latoschik, M. E. (2023). Measuring Interpersonal Trust towards Virtual Humans with a Virtual Maze Paradigm. *IEEE Transactions on Visualization and Computer Graphics*.

so that they would doubt every piece of advice they would receive from them. For the aims of the study, two different avatars were created, one was supposed to be perceived as more reliable than the other.

The results of the experiment were consistent with the assumptions of the authors that the digital assistant in the faithful situation was more requested for suggestions from the sample and they also trusted more often what it said.

Research until now expressed the idea that visual and auditory features of the virtual assistant could influence the consumer perceived reliability of it. For instance, the impact of vocal and facial characteristics in the assessment of interpersonal trust is examined in the study by Tsankova et al.[46] (2013), whose findings indicate that verbal and facial cues have a significant impact on trust. Participants in the poll felt that more melodious and controlled voices and good facial expressions were more trustworthy.

Peña and Yoo[47]'s study of 2014 investigated the impact of the clothes that the avatar wears on how much trust users put in them. The authors wanted to examine this effect in conditions of low and high mental effort separately. To achieve so, some of the sample was given a simple number to memorize at the beginning of the experiment, while the residual part was given a more complex number to keep in mind. The next phase was the interaction of the participants with one random avatar that could have black or white clothing that gave them the same prearranged message. After communicating with the virtual salesperson, the participants were asked for their feedback.

The findings demonstrated that when the avatar had darker clothes on, the consumer evaluation of the product, the willingness to pay, and the propensity to buy the item were lower than when they interacted with white-dressed virtual salespeople. Additionally, individuals sustained increased social distance to black-dressed avatars compared to the ones with a lighter outfit. Congruent with the assumptions of the article, participants demonstrated higher faith in avatars with white clothing than in the ones with a black outfit.

[46] Tsankova, E., Aubrey, A. J., Krumhuber, E., Möllering, G., Kappas, A., Marshall, D., & Rosin, P. L. (2013). Facial and vocal cues in perceptions of trustworthiness. In *Computer Vision-ACCV 2012 Workshops: ACCV 2012 International Workshops, Daejeon, Korea, November 5-6, 2012, Revised Selected Papers, Part II 11* (pp. 308-319). Springer Berlin Heidelberg.

[47] Peña, J., & Yoo, S. C. (2014). Under pressure: Avatar appearance and cognitive load effects on attitudes, trustworthiness, bidding, and interpersonal distance in a virtual store. Presence, 23(1), 18-32.

Finally, Peña and Yoo displayed that individuals who were not mentally occupied rated the virtual assistants who wore black as less credible than the ones that were dressed in white, while mentally occupied participants perceived the two types of avatars as equally trustworthy.

2.3 Research Questions

This literature review demonstrates the relevance of augmented reality and the use of virtual assistants in revolutionizing the online shopping experience. Research indicates the importance of the avatar-consumer identification that could be achieved when the virtual persona has human-like characteristics and features that resemble the users, so that the latter can identify themselves with the interactive online character assisting them in the e-commerce website.

The objective of this work is to further the knowledge in the field of avatar-mediated communications in the online purchasing experience studying how consumers respond when given the possibility of customizing the virtual assistant they will interact with. In particular, how avatar personalization influences patronage intentions, purchasing intentions and how it enhances the customer experience overall and improves customer evaluation of the product or the brand.

Within the metaverse, most platforms and virtual worlds already give the possibility for users to customize the appearance features of the avatar, such as haircut the color of their hair, eyes and skin, their height, etc. Another aspect of the virtual representation that could be personalized by consumers and could also affect the impact of the use of avatars on consumer actions could be the voice of the avatar.

One of a person's distinguishing features is their voice. The voice is a crucial component of human communication since it does not only carry spoken information but also subtleties of emotion, intentions, and personality. This feature may express personality attributes like assertiveness, confidence, or friendliness as well as emotions like joy, sadness, wrath, or enthusiasm. An individual's voice is a distinctive and unique characteristic that helps to define who they are. It may be a tool for recognition and expression of a person's personality in addition to serving as a means of communication. As a result, it is a component that would enhance user identification with their avatar and better personalize the customer experience in the metaverse.

Therefore, the first research question of this analysis is:

RQ1: How does avatar's voice customization impact on the customer experience, patronage intentions, purchase intentions, and brand perception, in the online purchasing experience?

Furthermore, this analysis aims to study the impact of the surroundings when using an avatar in the metaverse. Numerous options and potentials for more active involvement with the virtual world are presented by the ability to customize the virtual environment.

The option of personalizing the virtual environment might provide the user the chance to express their individuality and personality. They may design spaces that correspond with their passions, aesthetic preferences, or goals, which would help them feel more at home in their surroundings.

The ability to design and alter the virtual world to their liking may cause the individual to react with excitement and a sense of freedom. It might provide a sense of autonomy and fulfill the user's need for experience control. This response could increase immersion and engagement in virtual reality.

Indeed, in addition to the personalization of the individual's digital representation, the user's purchase and patronage intentions and attitudes towards the brand could also be influenced by the settings in which the avatar is located when performing an action in the virtual worlds. Hence, the second research question will be:

RQ2: How does avatar's surroundings customization impact on the customer experience, patronage intentions, purchase intentions, and brand perception, in the online purchasing experience?

The following chapter sets out the study methodologies, data analysis and results to attempt to answer these two research questions in order to study the effect of the personalization of these aspects, namely the avatar's voice and its environment, on consumer behavior and attitudes.

Chapter 3 - Analysis and Methodology

3.1 Hypothesis

Considering the literature review carried out in the previous section, the purpose of this study is to add further value to what has been said about avatar customization and its impact on the customer experience. Thus, the objective of this analysis is to understand whether there is a correlation between the possibility of modifying these certain characteristics of the avatar and the virtual experience and various consumer behaviors, in particular purchase intention, brand evaluation, and willingness to return to the metaverse again.

Therefore, what this research specifically wants to investigate is expressed in the hypotheses listed below which are divided into two parts, the first 4 concern the effects of personalizing the avatar's voice, while the last 4 involve the alteration of the avatar's surroundings.

H1: The customization of the avatar's voice positively influences customer experience.

H2: The customization of the avatar's voice positively influences customer's purchasing intentions.

H3: The customization of the avatar's voice positively influences customer brand perception.

H4: The customization of the avatar's voice positively influences customer's willingness to return to the metaverse.

H5: The customization of the avatar's surroundings positively influences customer experience.

H6: The customization of the avatar's surroundings positively influences customer's purchasing intentions.

H7: The customization of the avatar's surroundings positively influences customer brand perception.

H8: The customization of the avatar's surroundings positively influences customer's willingness to return to the metaverse.

3.2 The study: methods and objectives

This study was carried out by independently administering a questionnaire in Italy in April/May 2023, developed via the Qualtrics application. In order to benefit from the ease of access and selection of the participants, the study's participants were chosen using a traditional non-probabilistic sampling approach, specifically, with the adoption of a ‘convenience’ population sampling method. The quick data collection, high response rate, and low cost are this methodology's primary advantages.

The experimental study is primarily interested in the general impressions of the respondents regarding the effect of customizing specific avatar features on customer experience in the metaverse, hence the survey included participants of all ages with reference to the target sample.

Finally, no distinction based on gender was made on the collection of survey responses as it was not considered of relevance and wishing to generate results that could give a general insight for the study of this phenomenon.

3.3 Participants and sampling procedure

To carry out this experimental analysis, a questionnaire was developed on the subject, containing 4 general questions about knowledge of the metaverse and avatars, 16 specific questions regarding the interests and opinions of the participants and 4 socio-demographic questions. The opposite-value scale, also known as the bipolar scale, is a sort of measurement employed in surveys, opinion polls, and subjective evaluation. It is intended to assess a person's attitude, opinion, or evaluation of a certain idea by allowing them to express a preference or level of liking on a scale that ranges from one extreme to the other. The answers are on a 7-points bipolar scale which has the benefit of measuring both the respondent's viewpoint on the notion of interest's direction (scale side) and strength (distance from center). (Converse & Presser, 1986)

The study counted 215 participants who gave valid answers, completing all questions in the online questionnaire. The main distribution mechanisms for contacting respondents were social media and instant messaging services (such as WhatsApp, Facebook, Instagram, and LinkedIn). Participants were reached via an anonymous link created through the internet platform Qualtrics.

Almost half of the participants to the questionnaire were women (49.8%), while 45.1% were men and the rest were non-binary (2.3%) or preferred not to say (2.8%).

Regarding the age of respondents, the majority were under 24 (66.5%). 12.1% had an age range between 25 and 44, 18.6% goes from 45 to 64 years old, and finally only 6 participants declared to be above the age of 65.

More than half of the sample in the online poll (58.1%) stated that the highest level of education they had obtained was a high school diploma or another technical or professional school. On the other hand, around 21% of the sample had a Bachelor's degree, 19.5% had a Master's degree, and only 2 respondents had a PhD.

In the first part of the survey, general questions were asked to assess the respondents' knowledge of the metaverse, whether and how much they use it and how much they think it can become part of their lives and make a difference.

The data collected show that about 68.4% (147/215) of the poll participants stated that they had never interacted with a digital character in a virtual world. With regard to familiarity with the metaverse and all the services it offers, the participants mainly reported having a basic knowledge of the topic (45%), whereas approximately 37% (80/215) stated that they had no knowledge at all, 15% (33/215) of them claimed to have an intermediate understanding of the metaverse and finally only 3% admitted to having advanced acquaintance with the topic.

The specific questions part of the survey can be divided into two sections, one studying how the customization of the avatar's voice can influence consumers' preferences, and another studying the same phenomenon but starting from the possibility of changing the surroundings in which the virtual persona is located in the metaverse.

3.4 Results

The data collected via the online survey were then downloaded and uploaded to the SPSS (Statistical Package for Social Science) statistical software in order to run a linear regression to study the variables of interest.

To test the hypotheses expressed above, a linear regression analysis was carried out based on the conceptual model characterized by independent variables, including the participants' expressed interest in modifying the avatar's voice and the surroundings in the metaverse, but also the respondents' stated propensity to purchase a product that enables to edit namely the virtual character's voice and environment, which were used to study the dependent variables, such as the effects of personalizing these features on customer experience, buying intentions, brand evaluation and willingness to revisit the metaverse.

ANOVA (Analysis of Variance) is a statistical test used to determine whether there are significant differences between the averages of three or more groups or conditions. To establish whether the observed differences are statistically significant or can be due to chance, it compares the variance within and between groups.

It was considered relevant to perform an ANOVA test to compare the averages of the groups or conditions examined in the context of this research. The corresponding p-value was lower than the pre-established threshold of 0.05, which means that the differences between the groups are statistically significant, and that there is adequate evidence to reject the null hypothesis. In a nutshell, the null hypothesis claims that all the independent variables' regression coefficients are zero, which would imply that there is no significant association between the independent variables in the model and the response variable.

The coefficient of determination (R-square) in this type of analysis is a measure of how well the model fits the data and can take on a value in the range from 0 to 1. The closer it is to 1, the higher the predictive power of the model, and the independent variables are very effective in explaining variations in the dependent variable. Running the linear regression of the data collected on the SPSS software, it was found that the R-squared is equal to 0.79 which means that almost 80% of the response variables are explained by the independent variables considered in the model.

The regression coefficient or stoichiometry coefficient in a linear regression is denoted by the symbol beta (β). It shows the average variation of the dependent variable (response variable) resulting from an increase or decrease in the independent variable by one unit. It is an important

indicator of the analysis because it demonstrates whether the variable X and the variable Y have a favorable or adverse relation.

The value of beta might be either positive or negative. A rise in the independent variable is linked to an increase in the dependent variable, according to the definition of a positive beta, which denotes a positive association between the two variables. A reduction in the dependent variable is connected to an increase in the independent variable when the beta is negative, on the other side.

The degree of the influence is also indicated by the absolute magnitude of the beta. A bigger beta (measured as an absolute value) corresponds to a stronger influence, whereas a smaller beta implies the opposite.

For convenience and to read the results of the analysis more easily, the beta values have been grouped in the following tables.

Table 1: Values of Beta, regarding the context of changing avatar's voice

	Customer Experience	Purchasing Intentions	Brand Perception	Patronage Intentions
Interest in changing avatar's voice	0,588	0,321	0,373	0,270
WTB voice-changing product	0,335	0,570	0,479	0,633

Source: Table made on Excel with data collected and analyzed on SPSS.

The first part of the study had the objective of assessing the effect that enabling customers to personalize their virtual persona's voice in the metaverse could have on a series of variables which are indicated in Table 1, namely customer experience, purchasing intentions, brand perception and patronage intentions (propensity to return to the metaverse).

The outcomes of this analysis, as clearly observed from the data reported in the table, support the first four assumptions of the research. All of the beta values above are positive and above zero, meaning that the independent variables, namely the user's interest in changing the voice of their virtual character and the propensity to pay to make it happen, have a beneficial impact on the response variables, therefore they may improve the consumer experience in general, promote the willingness to purchase and visit the virtual channel again, and boost the user's opinion of the brand.

The strongest relationship is the one between the interest expressed by the participants in buying a product that changes the virtual character voice in the metaverse and the intention to visit the site again, since the beta associated to this regression is of 0.633, which means that for a one-unit increase in the independent variable it is expected a rise in the dependent variable of about 63%, supporting H4.

This is followed, in descending order, by the first beta (0.588) that is reported in Table 1, which supports the first hypothesis (H1) by showing a positive impact of the interest expressed in customizing the voice of the avatar on the customer experience in virtual worlds.

The next two highest values of beta that came up from the regression analysis were 0.570 and 0.479 which are indicators of the relationships between the inclination to change the voice of the virtual character using a charged product or service, respectively, with the propensity to buy and the perception of the brand stated by the survey participants. Therefore, the third (H3) and fourth (H4) assumptions are also confirmed by the interpretation of the findings of the analysis.

Table 2: Values of Beta, regarding the context of changing avatar's environment

	Customer Experience	Purchasing Intentions	Brand Perception	Patronage Intentions
Interest in changing avatar's environment	0,748	0,459	0,429	0,362
WTB environment-changing product	0,181	0,494	0,483	0,570

Source: Table made on Excel with data collected and analyzed on SPSS.

This second table above concerns the context of personalization of the environment when interacting and performing activities in virtual worlds and the effect this might have on user-brand interactions, purchase behavior, consumer opinion of the brand, and the desire to visit the site again. As mentioned earlier, the measure used in the analysis to determine the type and intensity of the relationship between the independent and dependent variables in the regression is the beta or regression coefficient.

In Table 2, the beta values for this second part of the study are shown. It can be observed that the highest beta value in this area (0,748) is the one that considers the relationship between the

respondent's interest in changing their surroundings and the impact on user experience. This data validates the fifth hypothesis (H5).

The second most robust association is between the willingness to buy a product that allows one to change the surroundings of one's virtual character in the metaverse and the propensity to return to the metaverse itself, with a calculated beta of 0.570, showing support for the eighth assumption (H8).

Following, the data show that the two independent variables, namely the interest expressed by respondents in customizing the setting of their digital representation and the propensity to buy a service that would allow them to do so, have a fairly strong impact on consumer purchasing decisions, yielding two beta values equal respectively to 0.459 and 0.494, demonstrating the sixth assumption (H6).

In conclusion, according to the data collected from the Qualtrics survey analyzed through regression, consumers' brand perception could be positively affected by the desire to change the surroundings in the metaverse, even for a fee. Indeed, the seventh hypothesis (H7) is demonstrated by the beta values are 0.429 and 0.483.

3.5 Discussion and managerial implications

This research aims to contribute to the literature reviewed in the previous chapter. As seen above, many studies have stated that the personalization of avatar characteristics has numerous benefits for brands that offer this possibility. One of the most important benefits was shown to be that of creating an alignment between the user and the virtual characters, who in turn acted as representatives of the brands. Therefore, there was also a consequent rapprochement between the user and the label, leading to greater purchase intentions, brand appreciation, and enhanced customer satisfaction.

A further particularity of the role of avatars is to make the time the user spends on the site or in the virtual world more engaging and entertaining, thus improving the overall consumer experience and increasing the propensity of users to revisit the site, to recommend it, generating positive word-of-mouth, and to stay longer on the virtual shop.

The research gap identified by this paper is the study of the possibility of modifying the voice of the avatar interacting in the metaverse and the environment in which activities take place in the virtual world.

In light of the results obtained from this study, it is possible to state that all of the hypotheses theorized have been confirmed, which means that the personalization of both the avatar's voice and the surroundings in the metaverse have a positive impact on the variables studied. Therefore, for companies operating in the sector, giving users these possibilities could improve the set of contact points between brand and consumer, improving the overall shopping experience.

The possibility of customizing these features of the metaverse experience could bring the users even closer to their avatar, making them feel as if they were living an experience tailor-made for them, thus improving their consideration of the label and, eventually, this may help build a loyal customer base for the company.

In the realm of marketing, brand perception and loyalty are two ideas that are closely associated. The thoughts, convictions, and perceptions that customers hold of a specific brand are referred to as brand perception. Consumers construct this mental picture of the product based on their experiences, the information they have learned, and their own perceptions. Numerous elements, including product quality, customer satisfaction, marketing communications, and brand reputation, can affect how consumers perceive a brand.

Customer loyalty, on the other hand, is a consumer's attitude of consistency and devotion to a certain brand. Customer loyalty is demonstrated by actions like returning to a company after a break, generating positive word-of-mouth, and declining competing offers. This concept is affected by perceptions of a brand since satisfied customers are more likely to stick with the same label over time.

Long-term consumer commitment and engagement may be cultivated through marketing initiatives targeted at enhancing brand perception through image management, providing great experiences, and customer pleasure.

Customizing the physical characteristics of the avatar, its voice and the environment in which it finds itself in the metaverse can contribute to humanizing the virtual character, which, being seen as an extension and representation of the brand, can lead to a greater emotional involvement of consumers, who feel empathy towards it and identify with it. In the long run, this contributes to the establishment of lasting bonds and a sense of affinity towards the brand.

A very important aspect in these cases is also that the digital figure embodies values and behaviors that are in line with those of the brand, to develop a sense of authenticity and reflect the personality of the brand.

When this is done efficiently, it can also be an element that distinguishes the company from its competitors. A unique and recognizable avatar can help the brand stand out and leave a lasting impression in the minds of users.

Consumers' confidence and trust in the metaverse can be increased with the support of a tailored and humanized avatar. A generic avatar or one that is missing human characteristics may be seen by users as less trustworthy than a humanoid avatar. This may help people accept the information that the avatar provides, such as advertisement and brand communications.

In order to establish brand credibility and win the trust of virtual customers, it is crucial to personalize and humanize the avatar in the metaverse. This may benefit user engagement, brand perception, and desire to take actions like making a purchase or connecting with the business in the real world or online.

As hypothesized and demonstrated in this research, consumers who can increase the level of customization of the avatar by changing its voice or context, may also have a more favorable purchasing behavior, for instance they may be willing to buy more and spend more on the products of a brand that provides these options in the metaverse.

Enhancing the customer experience is essential for successfully influencing customers' purchasing intentions. Consumers are more likely to form a close bond with a brand and view it as their preferred option when they enjoy a fulfilling, unique, and interesting shopping experience.

Numerous advantages and benefits would be provided to improve the customer experience given the possibility to further customize an avatar by altering its voice or surroundings in the metaverse. As seen above, this personalization of the experience would, first and foremost, make customers feel special and cherished, as well as improve their consideration of the brand and foster an emotional connection, which would ultimately lead to an increase in purchase intentions.

Furthermore, offering goods or services that are cutting edge or address fresh customer demands can also spark curiosity and a desire to buy. Constant innovation in the line of goods or services may keep customers loyal to the brand and encourage them to continue to make purchases.

The generation of value for the customer is a crucial aspect of the consumer experience which must go above and beyond the product or service itself to meet the needs of the customer. This may be done by providing special advantages, tailored offers, one-of-a-kind experiences, or post-purchase support services. Customers are more likely to form a sustained relationship with a brand and have

favourable patronage intentions when they believe it gives considerable value and cares about their needs.

3.6 Limits and future research

One of the limitations of the research in the socio-demographic context could be the fact that the questionnaire was formulated in the Italian language and administered to an Italian population sample, hence it might be interesting to involve an international audience in future studies by formulating a survey in English or other languages, also considering the global significance of the marketing phenomenon in the metaverse and the use of avatars.

Most of the survey participants have little or no knowledge of the metaverse, which may be a further limitation of the research, therefore future studies could focus on a sample that has at least intermediate knowledge on the subject or has already carried out activities or purchases in virtual worlds.

A further, very common risk of this type of research that always needs to be considered concerns the truthfulness of the answers. Participants might quickly answer the questions carelessly and thus the answers might not reflect what they actually think. Another potential threat might be that respondents may give socially desirable answers to the questions. Or finally, they might misinterpret the questions and give untruthful answers.

Moreover, in the case of online administration of a research study, it is not possible to have direct supervision over the respondents compared to how it would be in a controlled experimental environment. This may result in a lower quality of responses, a greater possibility of error or lack of attention on the part of the participants.

The method used was quantitative and traditional, which has an important specific limitation related to the quantitative nature of the questionnaire, which leads to exclusively unmotivated responses and lacks the unconscious factor, making it hard to derive certain facets of the surveyed person's behavior.

Qualitative research, such as interviews or focus groups, could fill this lack of depth in the motivations driving the participants in the study, allowing the researcher to dig deeper into the answers, trying to assess even the most hidden unconscious motivations that determine consumer reactions and behavior.

Other tools to investigate these aspects are those that apply neuroscience to marketing, called neuromarketing, which is a science that studies how the consumer's brain reacts to marketing stimuli and purchase decisions. Neuromarketing techniques include eye-tracking, EEG, or fMRI.

For instance, fMRI (functional magnetic resonance imaging) detects cerebral activity by measuring changes in blood flow. This tool makes it possible to identify the areas of the brain involved in consumers' different cognitive and emotional responses, such as brand perception, product assessment and reaction to advertising stimuli. EEG (electroencephalography), on the other hand, is an instrument that can help measure attention, emotion and memorization of marketing stimuli by observing brainwave activity.

A final example is eye-tracking, which enalbles to determine, in the context of a visual design, which can be an environment, a background, a billboard or product packaging, where the consumer's attention is most focused and thus how effective the design in question is.

The use of these tools would allow for a more in-depth analysis of the topic, also understanding the intrinsic motivations of consumers' minds by going beyond explicit responses and collecting data on brain and physiological reactions.

Conclusions

To conclude, the literature review highlighted the various benefits of offering virtual character customisation options to users using the metaverse. In particular, how this contributes to generating positive user attitudes due to high levels of consumer involvement in the experience and satisfaction.

Several studies have analysed the impact of different avatar personalisation options on consumer behaviour and this thesis seeks to add to the academic conversation by examining the effects of the potential to change an avatar's voice or surroundings on the consumer experience, purchase intention, propensity to return visits to the store, and brand and product perception.

To investigate the research questions, a survey was conducted using the traditional quantitative method. A linear regression analysis was performed and the results confirmed all the hypotheses set by the study, meaning that if businesses were to offer potential customers in the metaverse more opportunities to personalise their virtual representation, such as by having them customise their voice or their settings, this would have positive implications that could lead in the long run to the formation of brand loyalty, increase sales and a competitive advantage in the marketplace.

It should be noted that the survey was written in Italian and given to a sample of the Italian public, indicating the necessity to conduct surveys in other languages in the future in order to reach a global audience. It additionally turned out that the majority of participants knew very little to nothing about the metaverse, underscoring the necessity of concentrating on samples with more in-depth understanding or expertise in virtual worlds.

The accuracy of the responses, the absence of direct supervision of research participants throughout the study's online administration, and the quantitative character of the questionnaire, which could not completely reflect the unconscious elements impacting consumer behaviour, are further drawbacks. Accordingly, to better understand customer motives and responses, qualitative research methods like focus groups and interviews as well as neuromarketing techniques may be employed.

Companies, developers, and consumers are becoming progressively more interested in the metaverse. This is a result of people becoming increasingly conscious of the potential advantages and possibilities that these virtual worlds might provide.

The functionality and user base of platforms like Decentraland, Roblox, Fortnite, and Second Life are growing. Additionally, new metaverse platforms are being created, expanding the industry's opportunities.

Businesses are starting to investigate the metaverse as a potential marketing and consumer interaction tool. To reach and engage people in novel ways, they are developing interactive brand experiences within these virtual settings.

As a result, this research may serve as a springboard for further investigation into the application of extended reality and virtual worlds to marketing strategies.

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Summary

The first section of the paper is aimed at painting an overall picture of the concept of the metaverse and all the technologies it consists of, in particular augmented reality, virtual reality and avatars that in recent years are being employed by companies to enrich the online shopping experience.

A permanent virtual world where individuals may communicate with one other and with virtual items in a common three-dimensional area is referred to as the "metaverse." It is a sort of extended virtual reality where users may design their own avatars, explore virtual worlds, interact with others, work, shop, and engage in various activities that are comparable to those done in the real world.

Unlike standard e-commerce websites, which only give visual and aural stimulation, the metaverse is a novel idea that delivers an in-between dimension between the real and virtual worlds where customers feel totally engaged through all of their senses. Furthermore, this concept is innovative and different from all other virtual platforms because it is an interconnected system of virtual worlds where users may construct their own digital personas and navigate among them on different channels.

Various platforms, such as Fortnite, Decentraland, Second Life, and Roblox are considered predecessors of the metaverse for having introduced the idea of living a parallel life in the digital world separate from one's real, everyday life. Moreover, these channels are increasingly broadening the possible activities that can engage the user in the virtual world, thus increasingly approaching the idea of the metaverse by offering the possibility of participating in online events, such as Travis Scott's concert on Fortnite or virtual fashion shows.

The metaverse has several crucial features that set it apart. The fact that these platforms provide a really engaging and lifelike experience that is also continuous and live is likely the most significant characteristic. These networks allow users to roam freely between virtual worlds while using the same avatar and may be used to locate a variety of people, businesses, and things that are online at the same time. A separate economy within the metaverse's virtual worlds exists, where users may trade and purchase digital goods and services.

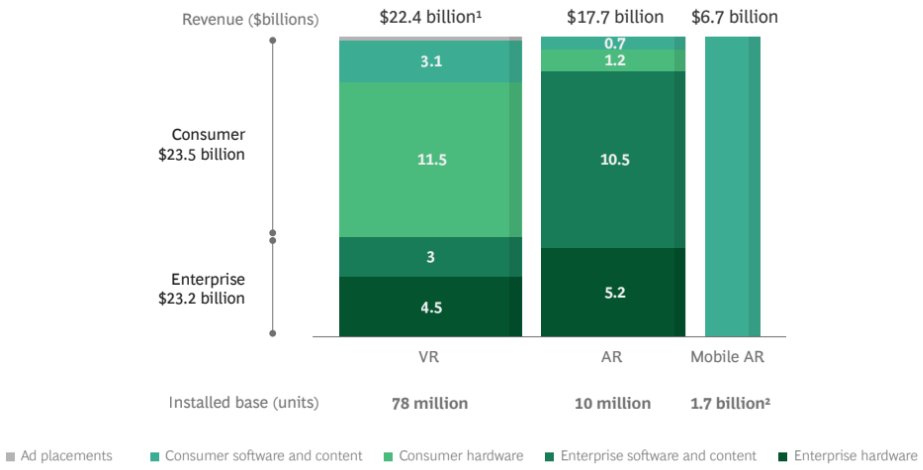
The main component of the metaverse is extended reality technologies (XR), in particular, augmented reality (AR) and virtual reality (VR). These two types of technologies present some differences. On the one hand, the main feature of virtual reality is that it creates a virtual world apart and separate from the real world, and some examples are those mentioned earlier such as Second Life or Roblox.

In contrast, augmented reality is not entirely separated from the material world, rather it is a technology that overlays or incorporates computer-generated virtual features into the user's sensory perception of the actual world. In other words, enhanced reality enables users to view and engage with a real-world environment that has been enriched with digital data.

Augmented reality's major goal is to improve users' comprehension and experiences by providing them with more data, images, sounds, or other forms of interaction that elevate their environment. Users may view both the actual world and digital aspects simultaneously by using devices like smartphones, tablets, smart glasses, or projectors to visualize these virtual elements.

Based on Boston Consulting Group’s predictions, the combination of virtual reality, enhanced reality and mobile AR will grow to comprehensive revenues of approximately 50 billion dollars by 2025, as depicted in the figure below.

Forecasts of augmented and virtual reality market trends up to 2025



Source*:* ARtillery Intelligence; December 2021; BCG analysis

There are many examples of companies that have employed augmented reality in their marketing campaigns in recent years. Ikea, for instance, launched an app that allows consumers to visualize how furniture would look in their own homes or office. Another AR mobile application was introduced by Volkswagen which let potential buyers observe realistically the external and internal characteristics of the new car models and could also personalize them. Finally, a type of AR app that is becoming increasingly popular is virtual-try-on apps that allow customers to try on clothes or make-up digitally via their phone's camera and help them make a more informed purchase when they are not able to physically touch and try the product.

As opposed to enhanced reality (AR), which incorporates digital material into the actual world, virtual reality (VR) technology creates a completely new environment digitally. Virtual reality (VR) immerses the user in a fully virtual setting where they may explore and interact with digital objects.

Virtual reality, as extended reality technologies in general, offers several benefits for brands by allowing them to create an immersive experience and increase consumer engagement and satisfaction.

One of the fields in which metaverse technologies are finding wide application is luxury fashion. As a matter of fact, brands in this industry are launching virtual collections and participating in events such as the Decentraland Metaverse Fashion Week in which around 60 brands took part, such as Dolce & Gabbana, Adidas, and Tommy Hilfiger, together with fresh talents.

A vital element of the metaverse is the avatar that can be impersonated by the user who can customize it or it can be a virtual salesperson who provides assistance to customers.

This digital entity can significantly influence how consumers perceive the shopping experience and the brand. Indeed, the personalization of the avatar can increase the sense of identification with it, thereby increasing the engagement and realism of the experience, resulting in greater satisfaction. Customers are often given the option to customize their avatar any way they like and make modifications at any point in the future at any time. Studies have shown that customers frequently match their avatar's appearance and personality to their own.

In the context where the virtual character represents the brand’s shop assistant, its characteristics can affect how the consumer perceives the brand, as the avatar could be seen as a representative of the company and the values it embodies and communicates to the public. Users are more likely to establish trust, increase their likelihood of making a purchase, and be eager to return to a website if they have a long-lasting relationship with the shop workers. A virtual salesman could help humanize the brand and increase customers' connection with it as this task becomes stronger in the online setting where a sense of proximity and physical touch is absent.

Within the framwork of online shopping, the avatar can perform various activities, ranging from the more functional ones, such as providing information and sales and after-sales support to consumers, to a purely entertaining and relational role, with the aim of establishing lasting relationships with users.

Avatars should be designed with the brand's image and values in mind, be fascinating to customers, be interactive and personalized, and be strategically used to promote efficient interactions across digital platforms.

The second chapter of this paper is focused on a literature overview regarding the role of augmented reality and avatars in the context of marketing and their impact on consumer actions and attitudes.

Recent studies have shown that the employment of augmented reality in the context of online shopping might enhance the experiences of online customers, increase brand and product involvement, and decrease the rate of product returns.

In the long run, these technologies could assist online stores in differentiating themselves from their competitors, strengthening customer connections, and increasing sales and profitability of the company. Additional research focused on consumers' psychological and social reactions to these devices. Consumer AR experiences have been found to evoke a sense of emotion, capture and retain the user's attention, and leave a lasting impression.

One stream of research was dedicated to the study of the applications of avatars in the field of e-commerce and their impact on user behavior. By increasing customer involvement, fostering trust, and ultimately building brand loyalty, computerized assistants totally revolutionize the virtual experience while facilitating online purchases. Because they may serve as a human-like depiction of a business or a product, they can help brands become more relatable to consumers by allowing them to connect with them and empathize with them.

Based on the literature review, users will engage more strongly with virtual personas that are both physically and psychologically similar to them and have a more pleasant experience. Therefore, two very significant concepts in this area are avatar personalization and, consequently, the degree of identification with the user. According to recent research, individuals who engaged with avatars that looked like them felt more immersed, present, and pleased. Users who had compatible avatars were also more likely to carry out desirable activities, such as making virtual purchases or planning to utilize the online persona.

The goal of this research is to advance knowledge in the area of avatar-mediated interactions in the context of the Internet buying process by examining how customers react when given the option of personalizing certain features of the virtual assistant they will interact with. More specifically, how avatar customization affects customers' inclinations to patronize and buy, enriches the whole interaction with the company, and raises consumers' brand ratings.

The voice of the virtual identities is the first aspect being examined in this study. In addition to being a medium of communication, the voice may be a sign of personality detection and expression. It would improve user identification with their avatar as well as completely tailor the user experience in the virtual world.

Furthermore, one of the objectives of the research is to study how consumers would react to the possibility of being able to change the background in which they perform various activities in the metaverse. The ability to customize the surroundings of the digital depiction could provide the user a sense of control and satisfy their desire for experience autonomy. This reaction could boost virtual reality absorption and realism.

The third and final chapter of this work is dedicated to the explanation of methodologies used, analysis, and interpretation of results.

First of all, the target hypotheses of the analysis were expressed, and are listed hereunder, on the basis of the research gap identified by the review of the studies carried out in the field and the contribution this paper wants to make to the academic discussion.

H1: The customization of the avatar's voice positively influences the customer experience.

H2: The customization of the avatar's voice positively influences customers' purchasing intentions.

H3: The customization of the avatar's voice positively influences customer brand perception.

H4: The customization of the avatar's voice positively influences the customer's willingness to return to the metaverse.

H5: The customization of the avatar's surroundings positively influences the customer experience.

H6: The customization of the avatar's surroundings positively influences the customer's purchasing intentions.

H7: The customization of the avatar's surroundings positively influences customer brand perception.

H8: The customization of the avatar's surroundings positively influences the customer's willingness to return to the metaverse.

The first four are concerned with the consequences of altering the avatar's voice, while the remaining four deal with changing the avatar's setting.

In order to conduct this study and examine the hypothesis, an anonymous survey that was created using the Qualtrics program was independently administered in Italy in April/May 2023. The participants in the research were picked using a conventional random sampling methodology, specifically with the use of a "convenience" demographic sampling procedure, which offers various advantages, namely its rapid data gathering, high response rate, and affordability.

The internet-based poll consisted of 16 specific questions on the participants' preferences and thoughts about the topic, 4 socio-demographic inquiries, and 4 general queries about awareness of the metaverse and avatars.

Respondents could express their positive or negative orientation (side of the scale) and preference intensity (distance from the midpoint) to each question by indicating a number from 1 to 7. A type of assessment used in interviews, or opinion polls, is the opposite-value scale, commonly referred to as the bipolar scale which is employed in this case. By enabling people to express a preference or amount of liking on a scale that runs from one extreme to the other, it is designed to gauge an individual's perspective, viewpoints, or appraisal of a particular idea or concept.

The study recorded 215 individuals who responded accurately to the entirety of the survey's questions. Social networks and chat platforms were the primary methods of reaching respondents through an anonymous link generated by Qualtrics.

Regarding the demographic composition of the population reached by the survey, 49.8% of those who completed the questions were female, compared to 45.1% of participants who were male. The majority were younger than 24 (66.5%), 12.1% of the total were within the age range of 25 and 44, and 18.6% were between the ages of 45 and 64.

A high school diploma or another certificate from a technical or professional institution was listed as the highest degree of education by almost 60% of participants. On the other side, only two respondents claimed to have a doctorate, while nearly 21 percent of the sample had a Bachelor's degree and 19.5% had a Master's degree.

The first four broad questions were posed to the respondents to assess their understanding of the metaverse, the extent to which they utilize it, and how much they believe it may impact their lives in the future.

According to the statistics, 147 out of 215 survey respondents, or around 68.4%, said they have never engaged with a virtual character.

In terms of competence with the metaverse and all of its features, the individuals who took part in the research primarily reported having an initial understanding of the subject (45%), while roughly 37% (80/215) stated they had no familiarity with the concept whatsoever, 15% (33/215) declared they had a moderate comprehension, and only 3% said they had an advanced understanding.

In order to conduct the analysis, the information gathered through the responses to the questionnaire was downloaded from Qualtrics and transferred to a widely used statistical software, SPSS (Statistical Package for Social Science), where a linear regression was performed.

The participants' declared desire to alter the avatar's voice and settings in the metaverse, as well as the respondents' stated propensity to buy a product that enables to edit namely the virtual character's voice and environment, were utilized to investigate the dependent factors of the linear regression, including the participants' purchasing intentions, satisfaction with the customer experience, attitude towards the brand and propensity to return to the virtual world.

Firstly, an ANOVA (Analysis of Variance) test was believed to be pertinent. ANOVA is frequently used to investigate how various variables affect a dependent variable in experimental and research settings. It is crucial to pay close attention to the p-value for the ANOVA test and determine if it is below a certain level.

In the context of this research, the null hypothesis may be rejected since there is sufficient evidence that the variances between the groups are statistically meaningful and the p-value is below the predetermined limit of 0.05. In linear regression, the null hypothesis would state that the predictor does not contribute significantly to explaining or predicting the variation in the dependent variable. Practically speaking, if the regression coefficient beta is 0, the regression line turns into a horizontal line, signifying that the predictor in the linear regression model has no influence or association with the dependent variable.

An additional measure that has an important interpretation in this type of analysis is the coefficient of determination (R-square), which is used to assess how well the model fits the observed data and, in this case, revealed a value of 0.79. The range of values it can adopt is from 0 to 1, hence the closer it is to one, the more variations in the dependent variable can be determined by the independent variables. An R-square of 0.79 means that the independent factors considered in the model define roughly 80% of the response variables.

In linear regression, the symbol beta (β) stands for regression or stoichiometry coefficient and it displays the typical fluctuation in the response variable caused by a change of one unit in the independent variable. It is a fundamental indication of the study since it shows if there is a positive or negative relationship between the variables X and Y.

The beta values have been categorized in the following tables for the sake of simplicity to interpret the analyses' findings.

Table 3: Values of Beta, regarding the context of changing avatar's voice

	Customer Experience	Purchasing Intentions	Brand Perception	Patronage Intentions
Interest in changing avatar's voice	0,588	0,321	0,373	0,270
WTB voice-changing product	0,335	0,570	0,479	0,633

Source: Table made on Excel with data collected and analyzed on SPSS.

The values of the regression coefficients shown in the first table above relate to the first part of the analysis in which the primary goal was to determine what impact allowing users to customize their virtual personas' voices in the metaverse would have on customer experience, intent to buy, the perceived value of the brand, and propensity for revisiting to the metaverse.

The findings of the present investigation demonstrate that the data presented in Table 1 support the first four research hypotheses, H1, H2, H3, and H4. The independent factors favourably affect the response variables since all of the aforementioned beta values are positive and above zero.

Among these values, the highest beta represents the strongest association which is 0.633 and it indicates that the participants' willingness to purchase a product that alters the avatar's voice in the virtual world is most closely linked with their intention to return to the site.

The second table below discusses the potential effect of environment personalization in the metaverse on users' touchpoints with the brand, buying patterns, attitude towards the brand, and the desire to return to the page.

Table 4: Values of Beta, regarding the context of changing avatar's environment

	Customer Experience	Purchasing Intentions	Brand Perception	Patronage Intentions
Interest in changing avatar's environment	0,748	0,459	0,429	0,362
WTB environment-changing product	0,181	0,494	0,483	0,570

Source: Table made on Excel with data collected and analyzed on SPSS.

The final four hypotheses, H5, H6, H7, and H8, were likewise supported by the fact that the betas obtained from the linear regression are all above zero and positive, signifying a positive association, as can be observed from the results shown in Table 2 above. The beta value which considers the link between the participants' interest in changing their surroundings and the influence on user experience is the highest one in this section (0,748), as displayed.

Therefore, the findings of this study demonstrate that allowing the user to customize their avatar's voice and surroundings can have a number of beneficial impacts.

The ability to personalize these aspects of the metaverse experience could make a user feel even more connected to their avatar by giving them the impression that their experience is being created just for them. This would increase the user's consideration of the brand and, in the long run, could help the business develop a devoted customer base.

Customizing the avatar's appearance, voice, and surroundings in the metaverse can help humanize the virtual character, increasing consumer emotional investment because they feel empathy for it and identification with it. Since the virtual character is seen as a representation of the brand, in the long-term, this helps to build lasting relationships and a sense of affinity for the brand, which may result in higher label loyalty.

As this research has demonstrated, avatar customization can improve the consumer experience of users and, consequently, customers would feel valued and distinguished as a result, which would enhance their appreciation of the firm and create a feeling of attachment that would eventually promote buying intentions.

An essential component of the consumer experience is the creation of value for the customer. In order to satisfy the demands of the consumer, a successful customer experience must go further than the product or service itself. This may be accomplished by offering unique experiences, customized promotions, exclusive benefits, or after-sale support services. When customers feel that a company provides significant value and genuinely cares about them and their needs, they are more likely to develop a strong relationship with it and have favourable purchasing behavior.

In conclusion, this study identifies certain constraints that can serve as a starting point for additional research in the field of avatar marketing and the metaverse. The first is of a socio-demographic nature, as the survey was carried out in Italian and was therefore only addressed to a sample of the Italian population. In addition, it was found that the survey participants had little familiarity with the subject of the metaverse, hence future research could focus on a sample that has more expertise with the topic. Furthermore, when using this traditional method of data collection by means of a survey, it has to be considered the risk that the answers given by respondents are not truthful, or that they have answered as is commonly desired or may misunderstand the questions. Lastly, this quantitative method does not allow the subconscious and psychological element of consumer actions to be studied, which could instead be assessed using qualitative methods such as interviews or focus groups, or neuromarketing techniques such as eye-tracking, fMRI, and EEG.