



Department of Business and Management

Chair of Marketing Metrics

**MARTECH USAGE TO IMPROVE THE ONLINE CUSTOMER
EXPERIENCE FOR PRODUCTS WITH INNOVATIVE SUSTAINABLE
FIBERS IN THE LUXURY FASHION INDUSTRY**

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INTRODUCTION

The following study focuses on products made of innovative sustainable fibers in the luxury industry. There is an increasing focus on sustainability and on research activities about production alternatives that are planet-friendly. Luxury and sustainability, even though they may seem like conflicting concepts on the surface, can and maybe have to coexist in a single product, able to offer high quality performance and exclusivity while at the same time raising awareness of the importance of the health of our planet. *Piñatex*, *Orange Fiber*, *Apple skin*, are just a few examples of innovative fibers that have been used to make clothing and fashion accessories. The sad truth is that the fashion business still has a significant detrimental influence on the environment; it generates around 10% of the world's total carbon emissions.

An ever increasing customer awareness is forcing some businesses to alter the way they operate, but the reality is that, very often, even people who identify as being concerned about sustainability fail to demonstrate it at the time of purchase. When given the chance to pick between two possibilities, one more sustainable and one less sustainable, people are likely to be more disposed to select the less sustainable option, even though themselves regard sustainability to be a crucial concern. This is particularly true in the luxury apparel sector. As a result, the core issue is that there is often a strong discrepancy between the individual's intention and his or her actual behavior.

This problem, known in the literature, may occur even more in the online sales channels of luxury brands. Indeed, the second fact to keep in mind is that despite the huge growth of digital channels, in the fashion and luxury sector consumers still prefer physical shops: the 'dream effect' and experiences offered by physical stores are what luxury customers are most interested in.

It can be argued that this behavior will be even more likely when it comes to products with innovative sustainable fibers. A consumer is more likely to be impressed by the innovative offer when in the shop, thanks to the 'dream effect' of the in-store experience and the sales assistants who can explain the production process, showing the quality and value that these products can have. Conversely, if the consumer is on the luxury brand's website, he or she is less likely to choose a product made from innovative fibers, because the risk of buying could be perceived as too high. It is therefore more difficult for an online luxury consumer to buy the sustainable innovative fiber solution: there is no interaction with a sales assistant, he/she cannot try the garment on, so he/she might be inclined not to take the risk and choose a less sustainable solution.

How to increase more easily customer satisfaction and thus the actual purchase also in digital channels? How to guarantee that 'dream effect', that unique experience that the customer has in physical shops also for online purchases?

This thesis aims to propose the use of MarTech as an approach to improve the customer experience, digital and otherwise, by providing the consumer with a personalized experience also in online channels.

MarTech is a broad field that has been growing rapidly in recent years. It aims to improve the results of marketing investments through innovation and an appropriate and targeted use of technology.

1 MANAGERIAL PROBLEM AND RELEVANCE OF THE TOPIC

1.1 LUXURY & SUSTAINABILITY DATA

The sad reality is that, despite innovative efforts, the fashion industry has failed to reduce its environmental impact over the past 25 years. The fashion industry unfortunately still has a negative impact on the planet: in rough terms, it produces 10% of the total global carbon emissions and of this, 30% goes to the impact on ocean health, having a larger environmental impact than even international flights and maritime transport¹. Indeed, most fashion items are created using non-biodegradable synthetic materials that unfortunately end up in landfills at the end of their life cycle².

The main environmental impacts are therefore due to the materials used and carbon emissions. As far as the latter are concerned, the present data and estimates of future ones are beginning to give cause for concern, in fact, as illustrated in the figure below (Figure 1), it is stated that currently the production and sale of clothing produces about 1.2 megatons of carbon dioxide and in 2030 it is estimated that this number will rise to 1.6 if no changes are made to the current system³.

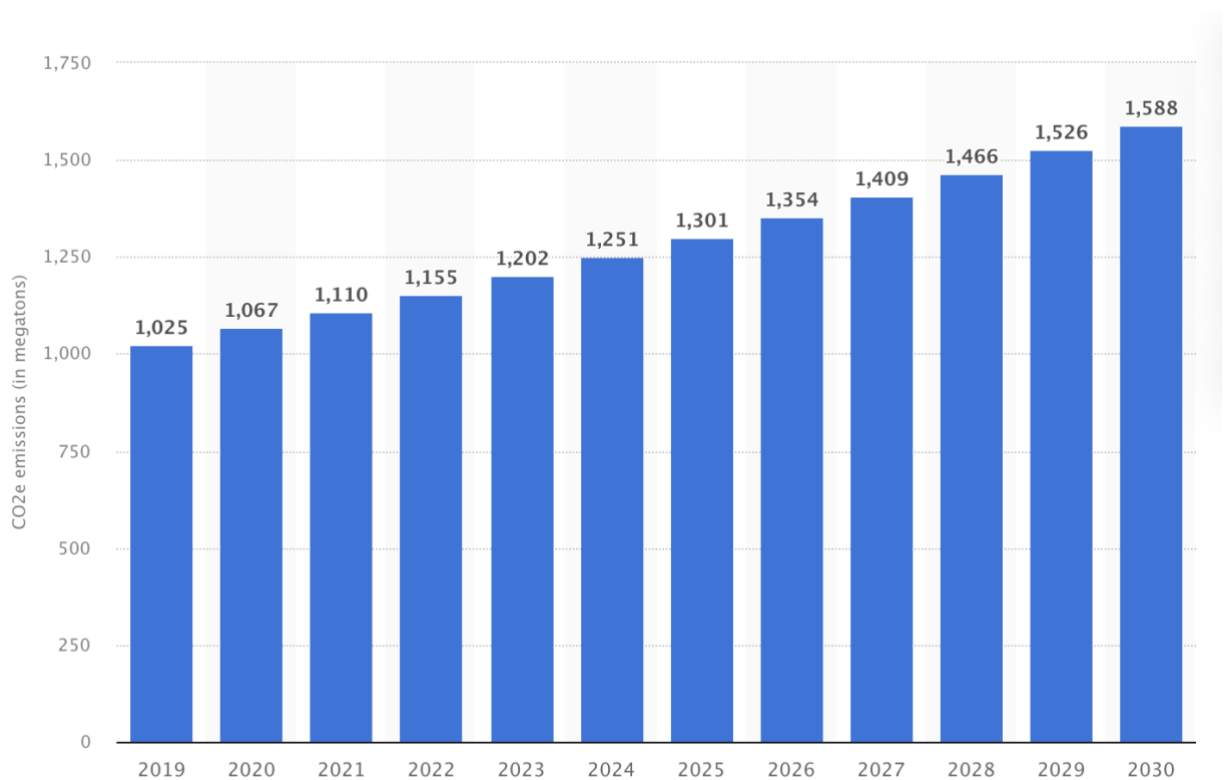


Figure 1: Carbon dioxide emissions from the clothing industry from 2019 to 2030 (Statista, 2022)

¹ Notaro, E. (2021) "Moda E Inquinamento: Le 7 Linee Guida di one Ocean Foundation", Luxury&Finance. Available at: <https://www.luxuryandfinance.it/articoli/moda-inquinamento-7-linee-guida-2021-02-11-13-40>

² Pucker, K. P. (2022). "The Myth of Sustainable Fashion". Harvard Business Review. Available at: <https://hbr.org/2022/01/the-myth-of-sustainable-fashion>

³ Statista. (2022). "Projected carbon dioxide equivalent emissions of the apparel industry worldwide from 2019 to 2030 (in megatons)" [Graph]. In Statista. Retrieved from <https://www.statista.com/statistics/1305696/apparel-industry-co2e-emissions/>

These environmentally harmful consequences can be explained by the fact that at 54%, the largest fiber used is polyester, a non-biodegradable synthetic fiber that seriously impacts the environment by releasing toxic parts. Also worth mentioning is cotton, which at 22% is very harmful to the environment⁴ (Figure 2). Cotton is one of the agricultural items that uses the most water during production, according to estimates. Indeed, 2700 liters of water are needed to produce a single cotton T-shirt. The problem is that a high proportion of all clothing products are made of cotton, so more support should be given to the use of sustainable cotton. It has already committed so many problems by degrading the soil and impoverishing so many areas, but there will be more and more harmful consequences if no action is taken⁵.

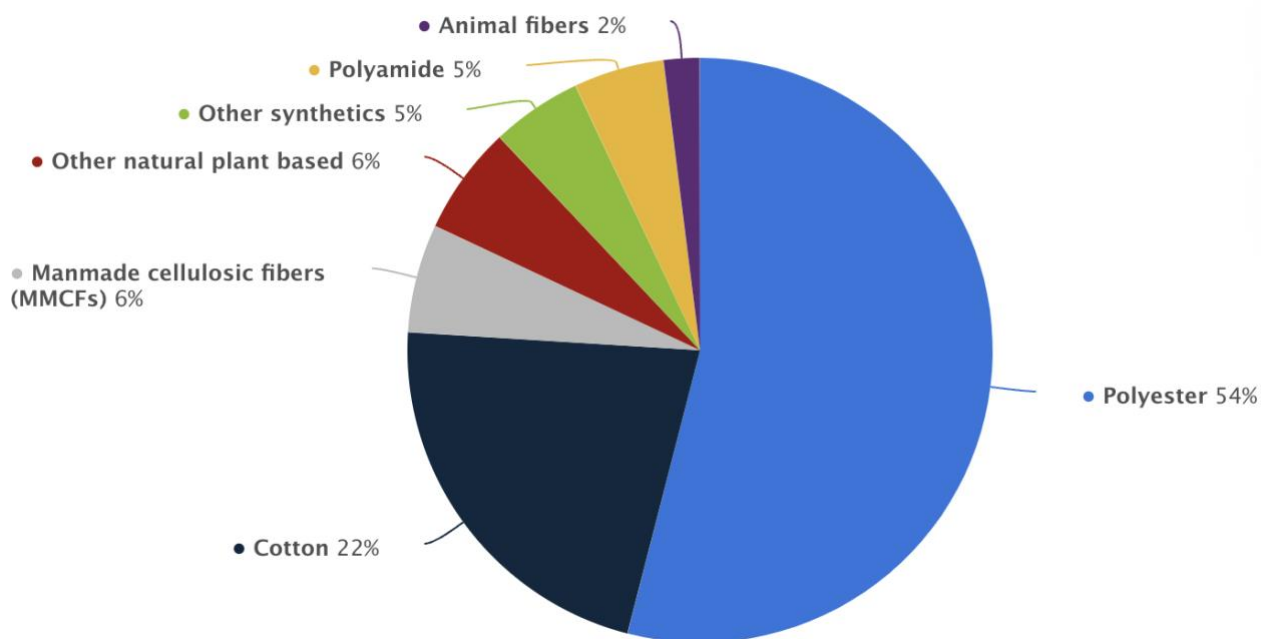


Figure 2: Production of different types of textile fibers in 2021 worldwide (Statista, 2022)

Shifting the focus to the luxury fashion industry, one would think that this would be more sustainable, due to the greater durability of the products, and the greater care in production, where quality outweighs quantity. In reality, sustainability and luxury have a relationship that can be described as complicated: indeed, companies have to find the right balance between luxury's quality and exclusivity and a real commitment to sustainability. This difficult combination has not been seen much in luxury brands: indeed, in a survey that was done in Italy by Ipsos in 2020, 41% of respondents disagreed that luxury brands are more environmentally friendly and therefore more sustainable, while only the 14% were agree⁶.

⁴ Textile Exchange. (2022). "Distribution of textile fibers production worldwide in 2021, by type" [Graph]. In Statista. Retrieved from <https://www.statista.com/statistics/1250812/global-fiber-production-share-type/>

⁵ Cotton. (2022). WWF. World Wildlife Fund. Available at: <https://www.worldwildlife.org/industries/cotton>

⁶ Ipsos. (2020). "Do you agree that luxury brands are more respectful of the environment than other brands in the apparel, fashion, accessories industry?" [Graph]. In Statista. Retrieved from <https://www.statista.com/statistics/1120732/opinions-on-sustainability-of-luxury-brands-in-italy/?locale=en>

In addition, it is important to consider that the global luxury clothing market is growing strongly (Figure 3). In terms of data, it is estimated to be USD 103.08 billion in 2023 and is expected to be USD 278.18 billion in 2031, therefore with a growth of 169% in eight years⁷.

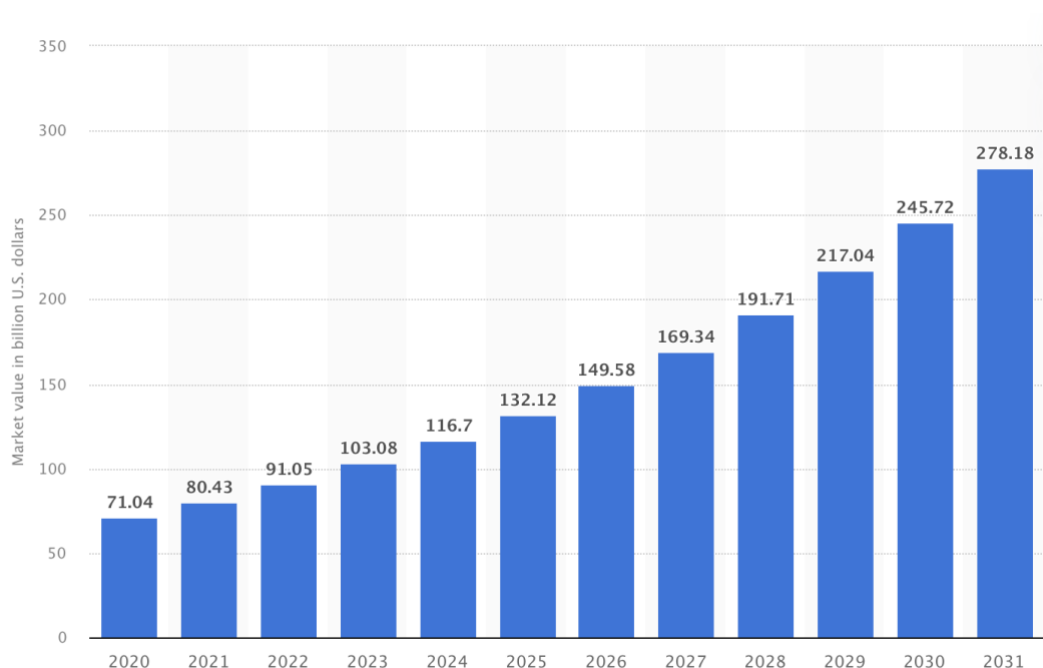


Figure 3: World luxury apparel market from 2020 to 2031 represented in billions of dollars. (Statista, 2022)

The sustainable element in this sector must not be disregarded precisely because of this expansion. It is true that it only makes up a small portion of the clothing industry, but this also contributes to and will continue to contribute to the deteriorating environmental situation.

This explains why, in the luxury fashion industry, sustainability is becoming an increasingly important issue, and why the growing concern of consumers - especially the younger generations - is driving a change in purchasing choices towards more ethical and responsible products. So luxury and sustainability may be seemingly at odds, but nevertheless these two worlds can coexist in a single product, even if the luxury industry is still far from it.

One must also consider the important role that luxury companies play in promoting and communicating the right values, sustainability of production as these have a strong influence on people's behavior⁸.

The consulting firm *Bain & Company* in collaboration with *Positive Luxury* have shown what a luxury brand could and should look like in 2030. Indeed, according to this study, in 2030 the brands that manage to revise their values and models by putting sustainability at the center of their strategies and business will be the leaders. In agreement to this, the ideal brand must employ five strategies: redefining its brand mission,

⁷ Statista. (2022). Luxury apparel market value worldwide from 2020 to 2031 (in billion U.S. dollars) [Graph]. In Statista. Retrieved from <https://www.statista.com/statistics/941156/luxury-apparels-market-value-worldwide/>

⁸ Osburg, VS., Davies, I., Yoganathan, V. et al. (2021) "Perspectives, Opportunities and Tensions in Ethical and Sustainable Luxury: Introduction to the Thematic Symposium". *J Bus Ethics* 169, 201–210. Available at: <https://doi.org/10.1007/s10551-020-04487-4>

decoupling growth from volume, making its supply chain transparent and traceable, maximizing commitment to minimizing environmental effect, and daringly creating economic value starting from sustainability⁹.

This study focuses on the last three objectives:

- Keeping the production chain traceable and transparent means making all information from the collection of raw materials to the final product easily visible to the consumer. The consumer will be able to see the origin of the components of the product he or she intends to buy, the place of production, the date and duration. Furthermore, it is very useful to let them see the environmental impact of that product and also the impact if this product is bought, then used and what will happen to it at the end of its life cycle (how much it will be recycled, how much it will pollute). This is because it is necessary to make consumers more and more aware that even a single action of theirs matters, so more attention must be paid to individual gestures.
- Regarding maximizing commitment to minimizing environmental effect, the goal for 2030 is to drastically reduce carbon dioxide emissions through innovative solutions such as the use of innovative fibers.
- Creating economic value starting from sustainability: the goal is to see sustainability strategies not as an additional cost for the brand, but as an opportunity, an investment in improving the future first and making the company more profitable in the long run.

The message that needs to be sent is that this must not be just a passing trend, but it is necessary that there is just a paradigm shift, a change of mentality that makes all this become normal, and not an extra novelty that presents a brand and that therefore differentiates it from the competition. Only by focusing on the long term, the benefits will then be visible, both in the environment and in brand sales. Sustainability is therefore one of the major drivers for the growth of any brand.

Although luxury brands represent only a small percentage of the huge fashion industry, even for them a structural change in the production process is necessary. For example, Chanel, a fundamental company in its sector, has declared that it wants to reduce the carbon emissions of its production by 50% by 2030.

⁹ D'Arpizio, C. et al. (2021) "Luxco 2030: A Vision of Sustainable Luxury", Bain & Company. Available at: <https://www.bain.com/insights/luxco-2030-a-vision-of-sustainable-luxury/>

1.2 PROBLEM: DISCREPANCY BETWEEN INTENTION AND BEHAVIOR

It can be argued that individuals are not behaving sustainably, as most people do not consume within the limits of the planet and tend to choose options that have negative effects on the ecosystem.

On the topic of sustainability, in order to find a viable solution, it is imperative to address a fundamental problem: there is often a big discrepancy between an individual's intention and his or her actual behavior¹⁰. Especially in luxury fashion industry, although though most people agree that sustainability is an essential issue, when given the choice between two solutions, one more sustainable and one less sustainable, individuals are likely to be more inclined to choose the less sustainable option¹¹.

This is because, although everyone wants to behave sustainably, as this is a critical issue and everyone wants to have a livable future, the intentions of individuals rarely match their actions. In fact, attitudes more often predict intentions rather than actions, which are predicted to a lesser extent¹².

It is possible to say that there are psychological barriers that sometimes prevent people from acting in the most responsible way. These ‘dragons of inaction’¹³ can occur for many reasons, but some of them will be illustrated here:

- The belief and perception that "my" change is unnecessary: erroneous belief that individual behavior change is not necessary to save the planet since humans are powerless to do it because they are too small to handle such a massive task.¹⁴ The individuals often have the wrong impression that nothing they do individually will change the world. In the area of luxury shopping, especially those who rarely make a purchase in this area, in those few purchases they do not worry about the environmental impact they may have.
- Information overload: many are unsure about how to make this change because there is so much information available. The change must be simple in order to be implemented and the customer must perceive the change as natural and easy, because changing a habit is exhausting in itself¹⁵.

¹⁰ Girod, S. (2021). "Luxury Is Learning To Deal With The Contradictions Of Sustainability". Forbes. Available at: <https://www.forbes.com/sites/stephane Girod/2021/07/01/luxury-is-learning-to-deal-with-the-contradictions-of-sustainability/?sh=62791bc52667>

¹¹ Gifford, R. (2011). "The Dragons of Inaction: Psychological Barriers That Limit Climate Change Mitigation and Adaptation", American Psychologist Available at: https://www.researchgate.net/publication/254734365_The_Dragons_of_Inaction_Psychological_Barriers_That_Limit_Climate_Change_Mitigation_and_Adaptation

¹² Park, H.J. and Lin, L.M. (2020) "Exploring attitude-behavior gap in sustainable consumption: Comparison of recycled and upcycled fashion products," Journal of Business Research, 117, pp. 623–628. Available at: <https://doi.org/10.1016/j.jbusres.2018.08.025>

¹³ Gifford, R. (2011). "The Dragons of Inaction: Psychological Barriers That Limit Climate Change Mitigation and Adaptation", American Psychologist Available at: https://www.researchgate.net/publication/254734365_The_Dragons_of_Inaction_Psychological_Barriers_That_Limit_Climate_Change_Mitigation_and_Adaptation

¹⁴ Spence, A., Poortinga, W. and Pidgeon, N. (2011) "The psychological distance of climate change," Risk Analysis, 32(6), pp. 957–972. Available at: <https://doi.org/10.1111/j.1539-6924.2011.01695.x>.

¹⁵ Bawden, D. and Robinson, L. (2020) "Information overload: An introduction," Oxford Research Encyclopedia of Politics [Preprint]. Available at: <https://doi.org/10.1093/acrefore/9780190228637.013.1360>.

- Actions becoming habits: as just said, the problem could also be that some individuals may recognize the importance of making a certain change, but at the same time they recognize that changing their habits is difficult and tiring¹⁶.
- Tokenism: individuals may think that if they make an effort to change their routine actions at least once in a way that is more respectful of the environment, this may be a justification or 'permission' to act incorrectly in another upcoming action. Specifically, many people feel that by making sustainable choices in moments of their daily lives, they can compensate for less sustainable choices in fashion purchases.¹⁷
- Hope and trust in technology: the advancement of living standards thanks to innovation has an illustrious history. As a result, there may be a perception that technology will be almost entirely capable of solving big issues such as climate change and environmental issues¹⁸.
- Temporal separation: when individuals have to make a decision, they often tend to think about the present and not to think about the future consequences because they are too far away from it, perhaps selfishly thinking that the action will not impact their life anyway. Indeed, individuals often prefer to receive benefits now rather than in the future, because they think it is better to have a small but sure pleasure now than a large but uncertain one many years from now¹⁹.
- Dimensional distance: some believe that since the consequences of unsustainable behavior would be unevenly dispersed and more globally than locally, they will not have much effect on an individual's life²⁰.

Even those who are more attentive and sensitive to these issues will certainly pay more attention to everyday purchases rather than to few luxury purchases.

For instance, consumers place a significantly higher value on sustainability in household activities than on fashion purchases. In percentage terms, 60% of respondents (dark and light orange line) support sustainability

¹⁶ Robbins, T.W. and Costa, R.M. (2017) "Habits," *Current Biology*, 27(22). Available at: <https://doi.org/10.1016/j.cub.2017.09.060>.

¹⁷ Lacroix, K., Gifford, R. and Chen, A. (2019) "Developing and validating the dragons of inaction psychological barriers (DIPB) scale," *Journal of Environmental Psychology*, 63, pp. 9–18. Available at: <https://doi.org/10.1016/j.jenvp.2019.03.001>.

¹⁸ Gifford, R. (2011). "The Dragons of Inaction: Psychological Barriers That Limit Climate Change Mitigation and Adaptation", *American Psychologist*. Available at: https://www.researchgate.net/publication/254734365_The_Dragons_of_Inaction_Psychological_Barriers_That_Limit_Climate_Change_Mitigation_and_Adaptation

¹⁹ Keller, E. et al. (2022) "A systematic review of the psychological distance of climate change: Towards the development of an evidence-based construct," *Journal of Environmental Psychology*, 81, p. 101822. Available at: <https://doi.org/10.1016/j.jenvp.2022.101822>.

²⁰ Keller, E. et al. (2022) "A systematic review of the psychological distance of climate change: Towards the development of an evidence-based construct," *Journal of Environmental Psychology*, 81, p. 101822. Available at: <https://doi.org/10.1016/j.jenvp.2022.101822>.

many times a month and even a week by thinking of reducing their consumption and waste of water, food and plastic, but when it comes to buying new clothes from sustainable materials, only 22% think so²¹ (Figure 4). A very small number of people behave sustainably when one considers that a significant proportion of that small percentage fail at the point of purchase.

Exhibit 2. Consumers Support Sustainability in Multiple Aspects of Their Lives

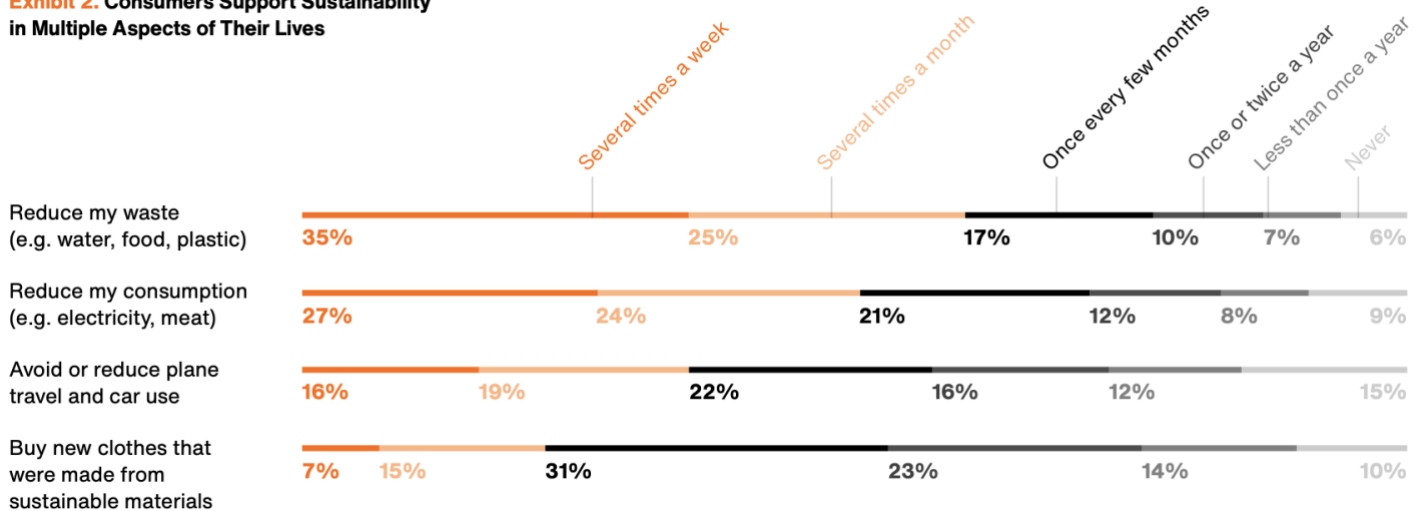


Figure 4: Sustainable behavior in various aspects of individuals' lives (Zalando, 2021)

This discrepancy before mentioned, between intention and actual behavior is in fact even more verified in the luxury sector because people tend to worry less when making such purchases. Indeed, during a luxury purchase there is a perception that it will have virtually zero impact on the environment.

Once people go to buy a garment, whether in the physical shop or in the online channel, it is more difficult for their values to be transformed into actions. This gap between attitude and behavior must be reduced or closed as soon as possible if this industry is to become more sustainable²².

Indeed, consumers must be helped by the brand to make this effort to move from intention to action. To effect change, company and consumer must work and take the step together.

Zalando's research demonstrates and supports the presence of this gap, making it difficult for consumers to translate their commitment to sustainability into practical purchase decisions. Figure 5 below shows twelve dimensions (quality, value for money, brand responsibility, production, price, ethical work, individual

²¹ Zalando Corporate Website. (2021) Attitude-behavior gap report. Available at: <https://corporate.zalando.com/en/our-impact/sustainability/sustainability-reports/attitude-behavior-gap-report#consumer-attitudes-seven-key-themes>

²² Zalando Corporate Website. (2021) Attitude-behavior gap report. Available at: <https://corporate.zalando.com/en/our-impact/sustainability/sustainability-reports/attitude-behavior-gap-report#consumer-attitudes-seven-key-themes>

responsibility, influencers, repair, second-hand, disposal and transparency) that turn out to be the key factors influencing purchasing decisions for those who show interest and importance in sustainability.

In all dimensions present there is this gap between the values people say they have and their consequent actions. The biggest gap as visible in the figure is in the twelfth dimension, transparency, indeed 60% of consumers say that transparency is a fundamental characteristic that must be present in order for the purchase to be successful, but then in reality, only 20% actually look for this characteristic at the moment of purchase and consider it really fundamental in their choice²³.

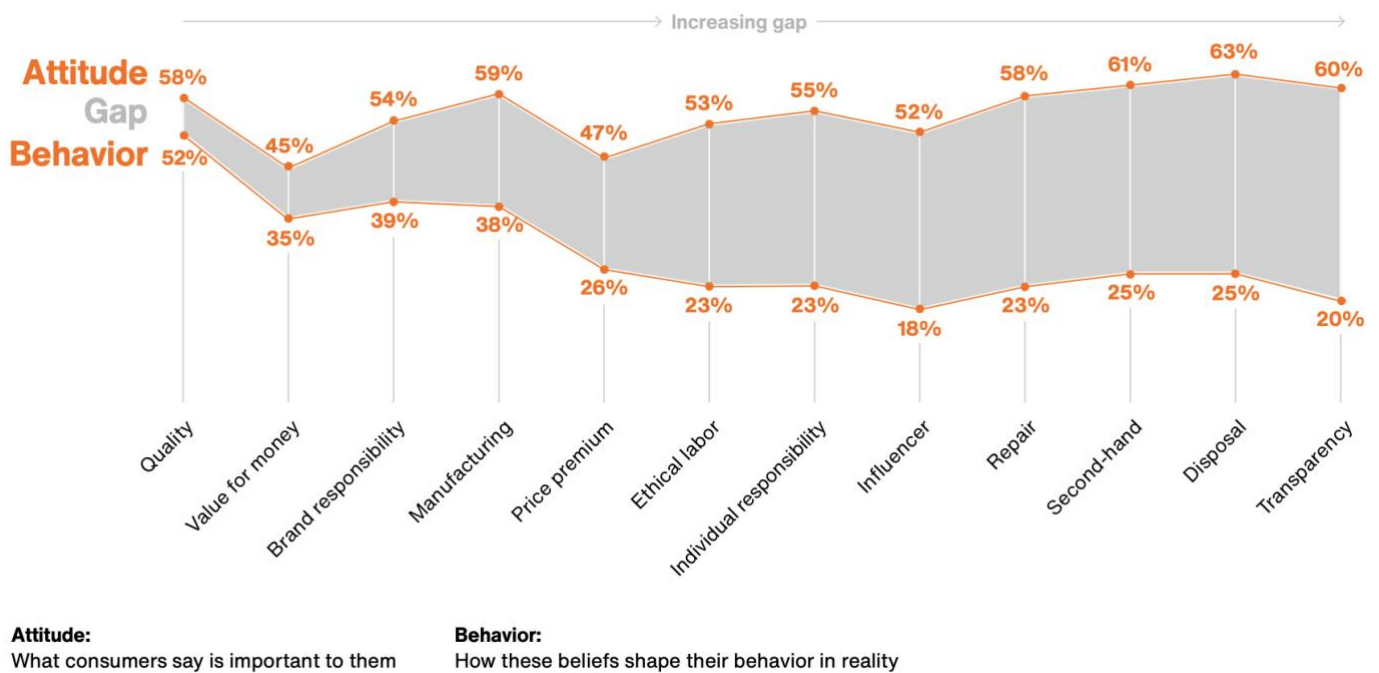


Figure 5: Attitude - Behavior Gap between the twelve fundamental dimensions for sustainability (Zalando, 2021)

In order to reduce this gap, the task of the brand is to make sustainable proposals appear more attractive in the eyes of consumers, make consumers feel part of the journey and show, speak a sustainable language that is easily understood so that the consumer can learn with minimal effort; incentivizing them to buy the right things, focusing on quality and not quantity.

²³ Zalando Corporate Website. (2021) Attitude-behavior gap report. Available at: <https://corporate.zalando.com/en/our-impact/sustainability/sustainability-reports/attitude-behavior-gap-report#consumer-attitudes-seven-key-themes>

All this to make people take sustainable actions even in times of leisure where they naturally do not want to think too much about the consequences of their actions, to make it easy to change towards a correct purchasing model.

1.3 CHOICE BETWEEN ONLINE CHANNELS VS PHYSICAL SHOPS: A DIFFERENT RESULT

This phenomenon just described (the gap between intention and actual purchase) may occur even more in online sales channels than in the brand's physical shop. Indeed, the second fact to take into account is that despite the huge growth of digital channels (Figure 6) through the years, consumers still prefer physical shops. Indeed, the figure below shows how online sales worldwide are growing at an ever-increasing rate, and will continue to do so in the coming years according to estimates. At present (2023), online sales in the world are about USD 6.3 billion, whereas in 2014 they were about one-fifth of that²⁴.

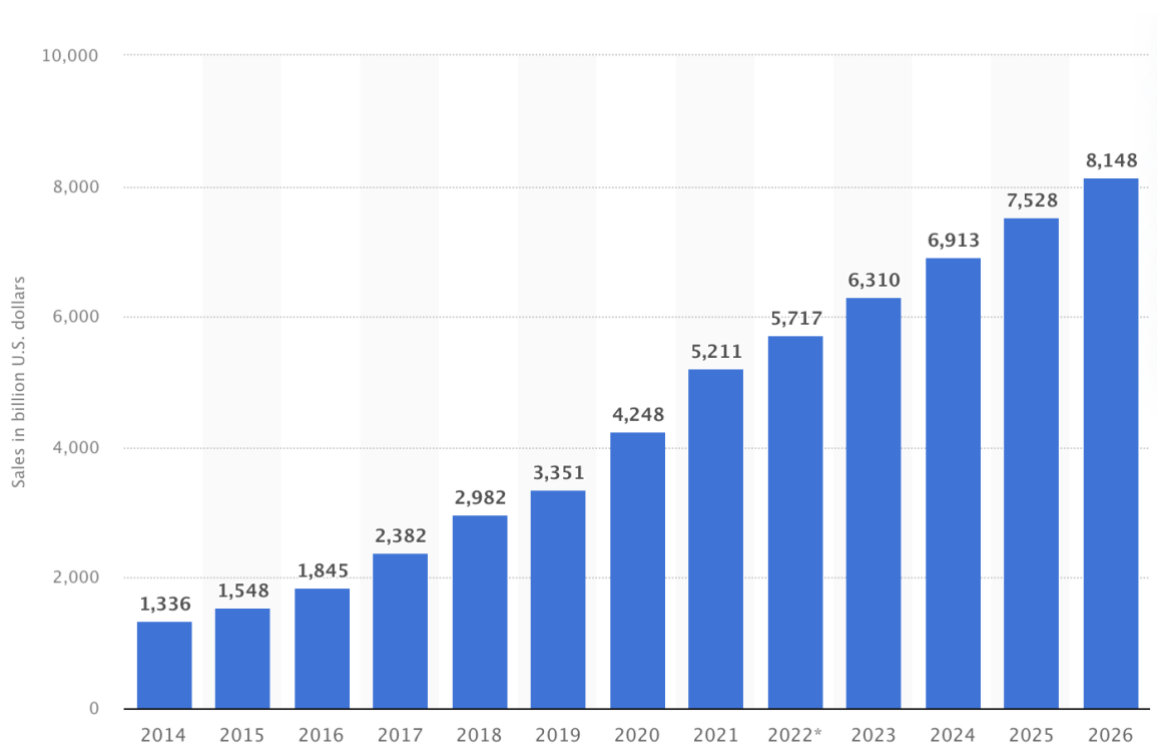


Figure 6: Online sales worldwide from 2014 to 2026 in billion dollars (Statista, 2022)

Unfortunately, especially for certain sectors, people still generally prefer to buy in the physical shop. As the title of the paragraph suggests, there might be a different result, an experience unfortunately of different intensity, due to shortcomings in the online channel.

It has to be acknowledged that offline sales offer a tactile experience that is virtually impossible to replicate in the digital channel, but this difference in experience can be reduced by offering extra services in the online

²⁴ Statista. (2022). Retail e-commerce sales worldwide from 2014 to 2026 (in billion U.S. dollars) [Graph]. In Statista. Retrieved from <https://www.statista.com/statistics/379046/worldwide-retail-e-commerce-sales/>

channel, by fulfilling other customer desires, so that customers can experience almost as much satisfaction as in the shop.

Returning to the preference for certain sectors to still buy in the physical shop, a survey done in Italy in 2022 with more than 2000 respondents shows that with 69%, the second largest category of products in which consumers still prefer to buy offline is clothing/apparel/shoes. This category is only surpassed by the sale of pharmaceuticals with 71%, which obviously requires the assistance of qualified personnel that the online channel cannot guarantee²⁵.

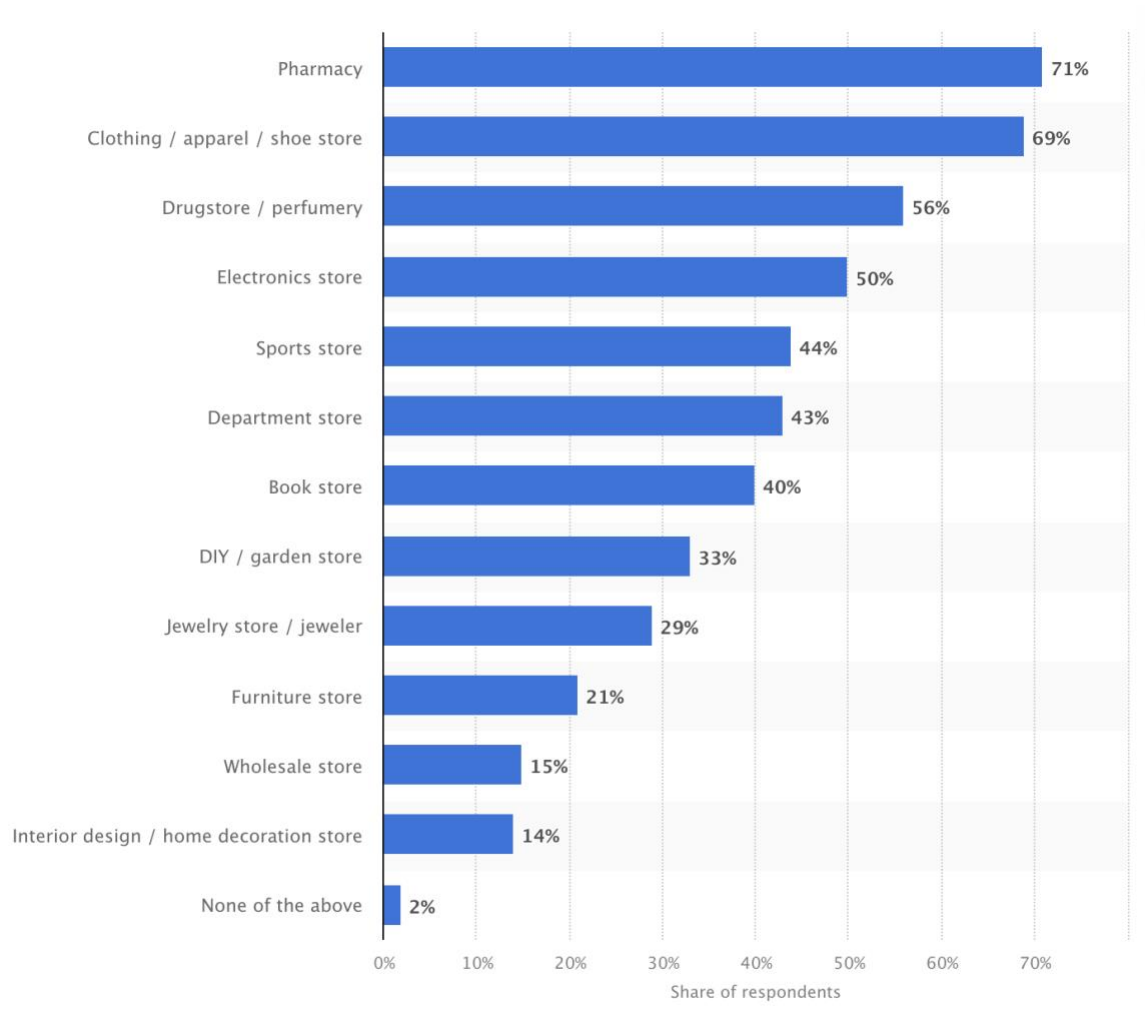


Figure 7: Percentages of offline purchases by type in Italy in 2022 (Statista 2023)

Moreover, 70% of consumers claim that sales assistants in physical shops are crucial at the moment of purchase²⁶. Therefore, it is thought that physical shops cannot be replaced, even in the long term. In fact, the

²⁵ Statista. (2023). Most common offline purchases by type in Italy in 2022 [Graph]. In Statista. Retrieved from <https://www.statista.com/forecasts/1000849/most-common-offline-purchases-by-type-in-italy?locale=en>

²⁶ Deloitte. (2022). “Cresce la digitalizzazione del settore Fashion & Luxury, ma i negozi fisici si confermano strategici per i clienti”. Available at: <https://www2.deloitte.com/it/it/pages/technology/articles/cresce-la-digitalizzazione-del-settore-fashion-luxury.html>

four fundamental aspects that in-store shopping offers and that make one think that the online is still far from replacing the physical are the human relationship, the instantaneous delivery of the product, not being able to see, touch and experience the product and the possibility of receiving immediate answers to one's questions²⁷. Then, in order to facilitate this conversion and increase the number of consumers who prefer the online experience, brands should not only come as close as possible to offering a similar experience, introducing more services with technology, they should also focus on their strengths, and use them and highlight them so that the gaps in the channel are not perceived.

These strengths could be²⁸:

- The online channel is always open, the individual can purchase a product 24 hours a day, Monday to Sunday, without any hassle. What's more, he/she can do this from the comfort of home.
- There is no pressure of any kind, the consumer can comfortably choose to buy when he/she feels most confident, after perhaps comparing prices of similar products of other brands.
- Saves time: the consumer does not have to go to the physical shop, thus avoiding traffic and queues inside the shop.
- The brand website if done well can certainly make it easier for the consumer to find a product.
- Furthermore, a big advantage is that one can compare and thus buy products that are not sold in the consumer's country. Geographical barriers are broken down.

The aspect of human relations and the possibility of receiving immediate help and answers from qualified salespeople in physical stores can be transferred to online channels through the use of technology. Indeed, through artificial intelligence and the proper use of chatbots, which are increasingly used today, the customer would be able to be satisfied and convinced to buy even without having to go to the physical store. In this way, the customer can discuss, ask questions and remove any kind of doubt with a qualified salesperson.

Being able to see and touch the product is also a key aspect for consumers who are not convinced about a specific product, especially if it costs a large sum. Here again, the use of technology, with augmented reality, can help consumers try on garments directly from their homes via their device's camera. It is true that the situation is not comparable with actually trying on the product and being able to feel it on, but this could be a first step to bring the customer closer to the product. In addition, by improving the efficiency of returns management, perhaps by making returns a quick and easy process, the customer after trying on the garment in

²⁷ TelnetData (2021). "Negozio fisico e online: Quando L'Unione fa la forza!" Telnet Data. Available at: <https://www.telnetdata.it/e-commerce/la-coesistenza-di-negozi-online-e-fisici/>

²⁸ Village, C. (2020) "Advantages and Disadvantages of Online Shopping Perceived by Consumers", Digital Marketing Blog - Communication Village. Available at: <https://www.communicationvillage.com/blogs/2017/10/20/vantaggi-e-svantaggi-acquisto-online/#:~:text=One%20of%20the%20main%20advantages%20for%20time%20to%20dedicate%20to%20shopping.>

augmented reality may feel convinced to buy it and perhaps if he/she does not like it after trying it on, he/she may feel free to return it. If the customer can do this return process easily and quickly, they are certainly more inclined to take the risk and thus buy the product, even having only tried it virtually.

Creating a website alone is no longer enough. One should no longer underestimate the online channel and consider it as a secondary channel, but it must still be able to offer a unique consumer experience. The online channel must therefore become interactive and capable of providing emotions.

All these strategies serve not only to more easily convert prospects into customers, but also to form a long-term relationship with them. In fact, it is much more important and profitable to focus on long-term relationships than on single transactions and short-term relationships.

1.4 INNOVATIVE SUSTAINABLE FIBERS IN LUXURY INDUSTRY

This trend just described of preferring the experience in the physical channel rather than online is even more verified in luxury shopping. Indeed, despite the enormous rise of digital channels in the fashion and luxury industries, consumers still favor physical stores. This is because the experience, and the 'dream effect' provided by physical stores, are the factors most sought after by luxury consumers.²⁹

In luxury, once inside the physical shop, the buying process is a true event, with attention to detail. Companies in this industry aim to create the magic, an emotional value. Indeed, the customer not only buys a product of incomparable quality and exclusivity, but also the entire baggage of emotions associated with the experience linked to it.

It can be argued that this behavior, penalizing online shopping and satisfaction, will be more true when it comes to products with innovative and sustainable fibers in the luxury industry. It is true that as consumers become increasingly aware of the environmental problems associated with production, the latter is becoming more ethical and therefore sustainable, but it is often more difficult to sell these products easily. It is easier for a consumer, finding himself in the shop, to be impressed by the innovative offer, because he/she can see it with his own eyes, he/she can touch it, try it on, and the qualified salespeople can explain the entire production process, showing the quality and value that these products can have.

For a luxury consumer buying online, it is therefore more difficult to buy the sustainable innovative fiber solution: this may lack the 'dream effect' mentioned earlier. Indeed, it has been discovered that customers have an incorrect view of the quality of sustainable luxury goods, who are thought to be inferior to non-sustainable luxury goods. This false notion, however, has a negative impact on consumers' decisions to buy sustainable goods from luxury retailers.³⁰

Due to prejudices, the use of innovative sustainable fibers such as orange peels, pineapple or apple scraps can probably be perceived as contaminated, dirty material, therefore far from luxurious and exclusive.

Furthermore, in the online channel there is no interaction with a sales assistant, and there is no one to accompany the customer on his journey. This has a great impact on consumer behavior, because they will certainly be less stimulated to learn about new offers and products. Informing oneself about new collections is time-consuming, whereas if new products are told about naturally and professionally in the shop, the situation is completely different.

Finally, the customer cannot try on the garment, so he/she may be more inclined not to take the risk and choose a less sustainable, but safer solution that then surely will fulfil his/her wishes. The cost is certainly high like all luxury products, the risk is too great and the benefits are too uncertain.

²⁹ Deloitte. (2022). "Cresce la digitalizzazione del settore Fashion & Luxury, ma i negozi fisici si confermano strategici per i clienti". Available at: <https://www2.deloitte.com/it/it/pages/technology/articles/cresce-la-digitalizzazione-del-settore-fashion-luxury.html>

³⁰ Dekhili, S., Achabou, M.A. and Alharbi, F. (2019) "Could sustainability improve the promotion of luxury products?," *European Business Review*, 31(4), pp. 488–511. Available at: <https://doi.org/10.1108/eb-04-2018-0083>.

To summarize, therefore, the consumer is only likely to buy online if it is a classic, better-known product that he already knows.

Finally, one must ensure that this trend towards sustainable luxury does not remain just a trend, but a mindset to be in, to use materials in an ethical way, to best satisfy consumer desires, but without compromising the lives of future generations and the health of the planet.

Having reached this point, we have to ask ourselves: how can customer satisfaction and thus actual purchase also be achieved more easily in digital channels and make this last? How to guarantee that 'dream effect', that unique experience that the customer has in physical shops also for online purchases?

1.5 MARTECH AS AN APPROACH TO IMPROVE THE DIGITAL CUSTOMER EXPERIENCE

Although luxury firms have typically lagged behind in adopting new technologies, they are now progressively doing so through the use of augmented reality, artificial intelligence, and data analysis in their internal operations and customer journeys. This is so because luxury has always been linked to high-caliber craftsmanship that is heavily influenced by people³¹.

From the low levels of the past years, the luxury sector is becoming a pioneer in the use of new technologies. This strong interest in technology stems mainly from three objectives that the luxury world has set for itself: to have strong consumer engagement, to make consumers become brand loyal and create lasting relationships; to have excellence combined with production efficiency; and to have sustainability benefits³². Luxury customers who wish to purchase via online channels should not have to give up this characteristic of the ‘dream effect’ element of the luxury industry. The aim is to be attentive to customers, even from a distance.

This thesis aims to make its contribution by proposing the use of MarTech as an approach to improve the digital customer experience, providing the consumer with a personalized experience also in online channels, to improve the relationship between the online channel and customer satisfaction and actual purchase, even in situations such as the sale of innovative sustainable products.

MarTech is a broad field that has been growing rapidly in recent years. It aims to improve the results of marketing investments through innovation and the use of Information Technology, although it faces barriers to actual success, mainly due to the skills gap between marketing and IT professionals.

An overall luxury 4.0 model is evolving, and it is distinguished not only by the expansion of the online sales channel but also by the digitalization of the complete consumer purchase journey in the luxury industry.

The most sought-after technology right now is artificial intelligence (AI), which enhances consumer experiences and enables firms to reach a larger audience. Due to their capacity to improve the whole shopping experience and produce high-quality content for digital marketing, immersive technologies like virtual and augmented reality (VR/AR) are also being employed more frequently³³.

Another area of use of artificial intelligence is to fill the gap in human interactions with the advent of chatbots. Traditional content in the websites, such photos, videos, has been found to be insufficient to hold the interest of premium brand devotees. Contrarily, if the information is dynamic and engaging, consumers are more likely to respond to a marketing message.

³¹ Statista. (2022). “Luxury Goods - In-depth Market Insights & Data Analysis”. Available at: <https://www.statista.com/study/61582/in-depth-report-luxury-goods/>

³² Camurati, di F. (2022) “Il lusso è pioniere nell’adozione di nuove tecnologie”. Milanofinanza news, MF Milano Finanza. Milano Finanza. Available at: https://www.milanofinanza.it/news/il-lusso-e-pioniere-nell-adozione-di-nuove-tecnologie-202209142028058419?refresh_cens

³³ Statista. (2022). “Luxury Goods - In-depth Market Insights & Data Analysis”. Available at: <https://www.statista.com/study/61582/in-depth-report-luxury-goods/>

2 LITERATURE REVIEW AND RESEARCH GAP

2.1 ROLE OF SUSTAINABILITY IN THE LUXURY INDUSTRY

Consumer interest and awareness about sustainability issues has grown significantly in recent years. Moving the focus to luxury brands, they are often criticized for their slow transformation toward a green industry. They are currently dealing with increased consumer discontent due to their lack of transparency in the production process and claims of abuse of animals and exploitation of workers. Instead, sustainable luxury actually entails environmentally and morally responsible manufacturing and consumption that aims to do away with immoral practices like animal cruelty, environmental destruction, and human exploitation. Nonetheless, it must be acknowledged that many businesses in this industry have been moving in the direction of more moral behavior recently, implementing ecological transformation at all stages of production (from raw material procurement, production, worker management and final product recycling)³⁴.

The perspectives of European consumers in the final three months of 2022 (to emphasize the most recent situation) regarding the significance of sustainability adoption in luxury brands are shown in the figure below (Figure 8). Indeed, 33.1% (blue line) think it is a very important issue, 35% (dark blue line) "somewhat important", 23.3% (grey line) neutral and 8.6% (red line) not important³⁵.

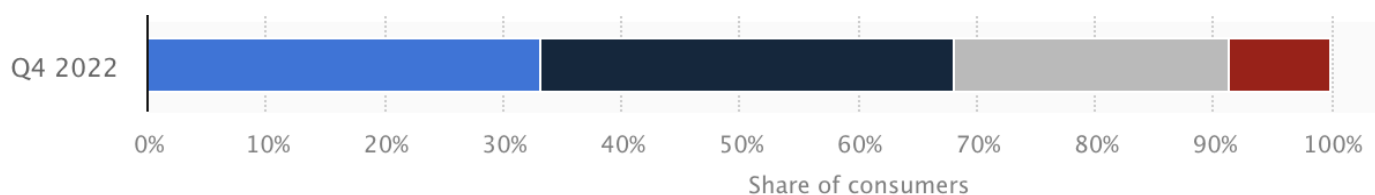


Figure 8: Consumer opinions on the importance of luxury brands adopting sustainability in Europe (Statista, 2022)

At this juncture, it is only appropriate to bring up the Fashion Pact, a global project started in 2019 with 32 fashion firms, including those in the luxury industries. By concentrating on three major issues—climate change, biodiversity management, and lowering ocean pollution—it is hoped to improve the disastrous effects that this business now has on the environment³⁶.

The aim is to combine these two seemingly contrasting worlds, luxury and sustainability. At first glance, luxury and sustainability seems to be two distant concepts due to their seemingly conflicting definitions: luxury

³⁴ Ranfagni, S. and Ozuem, W. (2022) "Luxury and sustainability: Technological pathways and potential opportunities," *Sustainability*, 14(9), p. 5209. Available at: <https://doi.org/10.3390/su14095209>.

³⁵ Altiant. (2022). Consumer opinions on the luxury brands' adoption of sustainable luxury policies in Europe from 4th quarter 2021 to 4th quarter 2022 [Graph]. In Statista. Available at: <https://www.statista.com/statistics/1290833/consumers-view-on-sustainable-luxury-europe/?locale=en>

³⁶ The Fashion Pact. Available at: <https://www.thefashionpact.org/?lang=en>

is exclusivity, high quality due to fine raw materials while sustainability is inclusiveness, prudence, moderation intended to respect the planet's limited resources³⁷. In order to preserve a genuine value in the eyes of customers, the luxury business must be able to enhance sustainability without compromising the worth or quality of its products.

Sustainability could be considered as luxury's potential ally because the latter produces high-quality goods that are meant to last. Furthermore, this relationship can be considered as having two sides because luxury businesses that implement sustainability strategies can gain from improved reputations and competitive advantages as a result of a distinctive and differentiated offer. Thus, it can be considered a win-win strategy³⁸. *LVMH* and *Kering* are two examples of luxury corporations that make promoting wide sustainable development and sustainability-focused innovations a top strategic priority. Regrettably, not many other luxury companies do the same³⁹,

More frequently than not, sustainable product lines are secondary, less visible offers that do not form a part of a brand's core offerings (where sustainability is lacking). As a result, only a small portion of luxury brand sales are made up of sales of sustainable goods⁴⁰.

At the same time on the consumer side, unfortunately, sustainable features are not among the factors that luxury product buyers prioritize when making purchases. Instead, perceived quality, exclusivity, craftsmanship, the proven experience and thus satisfaction with prior purchases, brand reputation, as well as store ambiance, are crucial⁴¹.

Dekhili and Achabou⁴² noted that consumer satisfaction and pleasure are the priority in the consumption of luxury goods; Davies et al.⁴³ believe that many consumers (sometimes mistakenly) think that sustainable luxury is more expensive; and Roper et al.⁴⁴ believe that some consumers view luxury as moderate consumption that prioritizes quality; these are just some of the reasons why luxury consumers do not put sustainability first in their search for luxury goods, but there are many other reasons.

In the luxury industry, transparency has emerged as a crucial component of sustainability. Customers are interested in the manufacturing process and the materials that were employed. This calls for open

³⁷ Widloecher, P. (2010). *!Luxe Et Développement Durable: Je T'aime, Moi Non Plus?*. Luxefrancais.

Achabou, M. and Dekhili, S. (2013) "Luxury and Sustainable Development: Is there a match?," *Journal of Business Research*, 66(10), pp. 1896–1903. Available at: <https://doi.org/10.1016/j.jbusres.2013.02.011>

³⁸ Ranfagni, S. and Ozuem, W. (2022) "Luxury and sustainability: Technological pathways and potential opportunities," *Sustainability*, 14(9), p. 5209. Available at: <https://doi.org/10.3390/su14095209>.

³⁹ Adams, R., Jeanrenaud, S., Bessant, J., Denyer, D. and Overy, P. (2018). "Sustainability-oriented innovation: a systematic review". *International Journal of Management Reviews*, 18, pp. 180–205.

⁴⁰ Athwal, N. et al. (2019) "Sustainable Luxury Marketing: A synthesis and research agenda," *International Journal of Management Reviews*, 21(4), pp. 405–426. Available at: <https://doi.org/10.1111/ijmr.12195>.

⁴¹ Dhaliwal, A., Singh, D.P. and Paul, J. (2020) "The consumer behavior of Luxury Goods: A Review and Research Agenda," *Journal of Strategic Marketing*, pp. 1–27. Available at: <https://doi.org/10.1080/0965254x.2020.1758198>.

⁴² Achabou, M. and Dekhili, S. (2013) "Luxury and Sustainable Development: Is there a match?," *Journal of Business Research*, 66(10), pp. 1896–1903. Available at: <https://doi.org/10.1016/j.jbusres.2013.02.011>

⁴³ Davies, I.A., Lee, Z. and Ahonkai, I. (2012). "Do consumer care about ethical luxury?" *Journal of Business Ethics*, 106, pp. 37–51. Available at: <https://link.springer.com/article/10.1007/s10551-011-1071-y>

⁴⁴ Roper, S., Caruana, R., Medway, D. and Murphy, P. (2013). "Constructing luxury brands: exploring the role of consumer discourse". *European Journal of Marketing*, 47, pp. 375–400. Available at: <https://www.emerald.com/insight/content/doi/10.1108/03090561311297382/full/html>

communication between businesses and consumers as well as transparency throughout the supply chain. The luxury industry has lower levels of transparency and social responsibility monitoring than mid-market fashion companies⁴⁵.

Luxury brands have a large number of potential solutions and activities to achieve responsible production: the use of sustainable materials; lowering the environmental impact of production activities (such as reducing the impact of water use and producing less waste); and social responsibility (such as upholding worker rights and promoting the values of inclusion and diversity) are just a few sustainability strategies that luxury companies can implement.

The role of technology in bringing about this revolution in the sector shouldn't be undervalued. In fact, it can be used to build new channels for customer relations and communication. Technology may enhance consumer satisfaction during the purchasing process as well as inform and transparently illustrate the sustainable production process, increasing the level of transparency previously highlighted as a crucial component of a successful sustainable strategy.

Specifically, thanks to the traceability of the supply chain, the consumer will be able to see the complete production process, from raw materials to final goods. This lessens the likelihood of "greenwashing", a type of deceptive marketing that advertises sustainable actions and guarantees sustainable benefits when these activities are not actually carried out.

Luxury firms can move toward a successful sustainable strategy by utilizing digital channels that combine cutting-edge technologies like augmented reality, virtual reality, and artificial intelligence, improving the customer experience⁴⁶.

Indeed, artificial intelligence (AI) is changing how consumers engage with brands today. This can personalize and improve the customer experience, even if the customer only interacts with the brand online and has no way of experiencing the magic of the physical channel⁴⁷.

2.1.1 USE OF INNOVATIVE SUSTAINABLE FIBERS

Due to the huge carbon footprint caused by this business, an increasing number of luxury fashion brands are attempting to lower the impact of their environmental manufacturing impact. Using innovative sustainable fibers is one of the ways to help contribute to the improvement of the current situation by decreasing environmental impact.

⁴⁵ Athwal, N. et al. (2019) "Sustainable Luxury Marketing: A synthesis and research agenda," *International Journal of Management Reviews*, 21(4), pp. 405–426. Available at: <https://doi.org/10.1111/ijmr.12195>.

⁴⁶ Aleem, A., Loureiro, S. M. C., Bilro, R. G. (2022) "Luxury fashion consumption: a review, synthesis and research agenda". *Spanish Journal of Marketing*. Available at: <https://www.emerald.com/insight/content/doi/10.1108/SJME-06-2021-0105/full/html>

⁴⁷ Ameen, N. et al. (2021) "Customer experiences in the age of Artificial Intelligence," *Computers in Human Behavior*, 114, p. 106548. Available at: <https://doi.org/10.1016/j.chb.2020.106548>.

It is predicted that by 2030, the global sustainable textiles market would be worth more than \$69.5 billion, with an annual growth rate of 12.50%, as a result of the huge rise in knowledge of sustainable technologies and materials⁴⁸.

The fiber market currently stands at 110 million tonnes, and it is predicted to increase by 30% to 146 million tonnes by 2030. Unfortunately, only a small portion of the synthetic and natural fibers of plant origin that dominate the market may be deemed sustainable⁴⁹.

According to studies by PwC, the following factors are primarily responsible for the rise in demand for goods made from sustainable fibers:

- Companies' increased commitment to minimizing waste and the environmental impact of production as a result of their rising understanding of the risks involved.
- Consumers' increased focus on sustainability-related issues. This theme is becoming more relevant and influential in consumers' purchase decisions.
- There are various projects to develop this still-evolving system, including the potential for recycling textile waste.
- Credit institutions finance those that put money into environmentally friendly projects.
- Governmental incentives.

Innovative natural textiles made with the intention of lowering industrial waste are included in the category of innovative textile fibers. These fabrics are mostly made from food industry waste, which is used to create materials with minimal environmental impact. The fabrics made from fruits like oranges, pineapples, apples, and many more are among the most well-known.

The following advantages may result from the use of these cutting-edge sustainable fibers: a decrease in waste production, carbon emissions, and water contamination. Additionally, these cutting-edge materials give luxury firms the chance to stand out from rivals and develop items that are original and one-of-a-kind⁵⁰.

In particular, by minimizing the environmental impact of these fibers' manufacture and use, the use of novel sustainable fibers can aid in the reduction of carbon emissions.

⁴⁸ Kiron, M.I. and Mazharul Islam Kiron. Textile Learner (2023) "Sustainable Fibers Features, Properties, Application, Advantages and Market". Available at: <https://textilelearner.net/sustainable-fibers-an-overview/>

⁴⁹ PWC (2023). Available at: <https://www.pwc.com/it/it/industries/retail-consumer/assets/docs/pwc-ReFiber-sostenibile.pdf>

⁵⁰ Kiron, M.I. and Mazharul Islam Kiron. Textile Learner (2023) "Sustainable Fibers Features, Properties, Application, Advantages and Market". Available at: <https://textilelearner.net/sustainable-fibers-an-overview/>

Also, using cutting-edge sustainable fibers can help minimize water pollution in two ways: by lowering the quantity of water required for production and by lowering the amount of contaminants discharged into the water during fabric washing.

Regarding the potential to produce distinctive and competitive products, some innovative sustainable fibers offer distinctive qualities that set them apart from conventional fibers. For instance, whereas hemp or linen may have a more rustic feel, others, like orange fiber, may be delicate and silky to the touch. These qualities can be exploited to produce products that stand out from a vast amount of products made from conventional fibers and that have a distinctive look and feel.

Second, using cutting-edge sustainable fibers can open up new design opportunities. For instance, some fibers, like seaweed or mushroom fabric, can be molded into shapes that are different from those of typical fabrics, opening the door for brand-new types of apparel and accessories. A distinct competitive advantage in the market can be gained by using cutting-edge sustainable fibers to make products that satisfy modern consumers' demands for sustainability. Customers may, indeed, prefer products created from innovative sustainable fibers that offer higher ecological performance than those made from traditional fibers, especially in recent years.

Sustainable fibers do, however, have some disadvantages, chief among them the fact that, like everything new, it will take some time before it is embraced by a larger audience. Many consumers are therefore unaware of how these products work, so they have less incentive to buy them⁵¹.

The conversion period from potential customers to real customers may be lengthier for certain particular things, which is quite frequently the case. One example is precisely in these situations where there are new offers and types of products, where the salesperson in the actual shop could make a difference. But this may not be enough because a buyer is much more likely to want to take less risk and buy a conventional garment if he has to spend a significant sum on a luxury item.

By definition, luxury is frequently linked to long-lasting, high-quality goods that are an investment. When buying a luxury item, consumers frequently seek out things that offer long-term value and don't need to be replaced frequently or repaired expensively. In contrast, the quality and long-term worth of products manufactured with novel fibers may be less certain. Indeed, customers do not have many references and reviews on these products, because they are rarer and more recent.

This may be particularly true for customers who buy high-end clothing less frequently since, once they make a genuine commitment, they don't worry about the environmental consequences, leaving out the sustainable element.

But, some customers are also willing to take greater risks when buying luxury goods, particularly if they want something exceptional, distinctive and unique to help them stand out from the crowd. In this situation, the risk might be viewed as a chance to get a special and priceless item that would raise their perception of status and distinction.

⁵¹ Kiron, M.I. and Mazharul Islam Kiron. Textile Learner (2023) "Sustainable Fibers Features, Properties, Application, Advantages and Market". Available at: <https://textilelearner.net/sustainable-fibers-an-overview/>

The luxury brand's duty is therefore to try to spread the message of a product that encompasses exclusivity, originality, uniqueness and high quality, while contributing to the health of our world and get the message across to the consumer that they have the opportunity to be a protagonist of this change by wearing unique pieces.

2.1.2 THE BRAND'S MAIN INITIATIVES

This section will mention brands (large and small) that have used or are using food waste as textiles. These examples of circular economy will undoubtedly increase in number in the future as consumers and brands place more and more value on sustainable fashion.

The first company in the world to derive value from orange waste is *Orange Fiber*. Citrus fruits are used to extract cellulose, which is then converted into a valuable raw material that may be used to make soft, silk-like clothing using a low-impact procedure. The Italian company, which was established in 2014, is now well-known worldwide for its creative approach to producing goods with minimal environmental impact. The success of this brand is largely down to the production process' transparency; indeed, customers are well-informed and have no trouble comprehending the entire production process⁵². This brand has worked extensively with the fashion industry, including luxury brands.

Salvatore Ferragamo, which in 2017 released a capsule collection created from citrus fruits in conjunction with the Italian startup, is one of the most well-known examples in the luxury sector. By fusing creativity, innovation, and eco-sustainability, the Florentine fashion business was able to achieve its goal of bridging sustainability and respect for the environment with fashion⁵³.

2019 saw the launch of the "conscious exclusive collection" by *Orange Fiber* and *H&M*, which featured clothing composed of 50% cellulose from citrus fruits and 50% organic silk.

Moving to the widely practiced production of pineapples, its plant serves as a rich supply of plant matter. The remaining leaves of a pineapple after harvesting are considered agricultural waste and can subsequently be disposed of or recycled, giving rise to "Piñatex"⁵⁴. Hence, Carmen Hijosa, a specialist consultant in luxury leather, designed "Piñatex" as an example of a new sustainable fiber. This fiber is becoming more and more popular in the world of fashion; in fact, it can be used to make bags, high-end clothing, shoes, and accessories because the end product is a resilient, flexible material that resembles leather⁵⁵.

⁵² Orange Fiber (2022) Orange Fiber. Available at: <https://orangefiber.it/it/who-we-are/>

⁵³ Ferragamo Orange Fiber. (2017) Ferragamo Group. Available at: <https://group.ferragamo.com/it/news/2017/orange+fiber/orange+fiber>

⁵⁴ Kiron, M.I. and Mazharul Islam Kiron. Textile Learner (2023) "Sustainable Fibers Features, Properties, Application, Advantages and Market". Available at: <https://textilelearner.net/sustainable-fibers-an-overview/>

⁵⁵ Miliardo Yida. (2021). "Piñatex, Il Tessuto vegetale Che Nasce Dagli Scarti dell'ananas". Available at: <https://www.miliardoyida.com/pinatex-il-tessuto-vegetale-che-nasce-dagli-scarti-dell'ananas/>

Numerous companies have used “Piñatex” as a sustainable initiative over the course of their existence.

- One example is the luxury fashion company *Hugo Boss*, which used this material to create men's and women's shoes in 2018 in order to combine innovation and environmentally sustainable design into one product with no negative effects on the environment⁵⁶.
- In addition to producing clothing from orange waste as previously discussed, the fast fashion behemoth *H&M* also debuted a new line of bags and accessories made from pineapple leaves in 2019⁵⁷.
- In 2019, Paul Smith, a British clothing company, debuted footwear and luggage made from this cutting-edge fiber⁵⁸.

Another cutting-edge fiber is “Apple Leather”, which is manufactured from apple skin and converted into a fiber that resembles animal skin, replacing it for a better and cleaner future. Luxury apparel and accessories have been made with this strong and flexible fiber.

The unique aspect of apple skin is that it can be used to make high-quality clothing that resembles snakeskin in both appearance and features, yet unlike snakeskin, it does not damage animals or the environment but rather works to protect it.

The Bolzano-based company *Frumat* was established in 2009, and it immediately focused heavily on developing materials from food waste. It began by focusing on grape and cranberry waste, but after having little luck, it moved on to apple garbage. Indeed, *Frumat* currently generates 30 tonnes of apple waste each month that are then recovered.

Since then, “Apple Skin” has evolved from being a protective layer for diaries to being utilized for a variety of clothing in the fashion industry. Thereafter, many tiny fashion companies, including *Womsh* and *OneMore*, entered into deals with *Frumat* to create their own collections⁵⁹.

It's crucial to note the significance of sustainability communication in addition to the brands' real efforts to use sustainable materials. Consumers can only fully understand the value of these garments through excellent brand communication, which simplifies their purchasing decision. This is not an easy process, as poorly planned communication can lead to misperceptions in the minds of consumers, damaging the reputation and image of the brand.

The application of a storytelling technique is one illustration of an effective sustainability communication.

⁵⁶ “Hugo Boss: Scarpe Vegane in Pelle d'ananas: Innovazione (2018) HUGO BOSS | Scarpe Vegane in pelle d'ananas” | Innovazione. Available at: <https://www.hugoboss.com/it/uomo-scarpe-vegane/>

⁵⁷ H&M. “Conscious exclusive 2019” (2019) Available at: <https://about.hm.com/news/general-news-2019/conscious-exclusive-2019.html>

⁵⁸ Paulsmith.com. Available at: <https://www.paulsmith.com/uk/info/materials>

⁵⁹ Symbola (2021) “Frumat”. Available at: <https://www.symbola.net/approfondimento/frumat/>

Storytelling is seen as a powerful strategy with which to present a brand's collection or new products by telling a story that engages the audience on both a cognitive and behavioral level, leading them to greater purchase conviction⁶⁰.

Luxury companies that excel in storytelling include *Prada*, which, in partnership with National Geographic, produced a documentary to inform the public about "Prada Re-Nylon," a project intended to convert the brand's clothing in a sustainable manner using Econyl (made from plastic waste recovered from the oceans), but also *Gucci* with the "Gucci Off the Grid" advertising campaign.

Thanks to a well-designed brand narrative, customers can fully comprehend the motivations behind a project, but it is also crucial to be transparent in providing them with information, hence in communication, otherwise it leads to the "greenwashing" mentioned above. Consumers can visualize and obtain as much information as possible about the sustainable commitment through the transparency of the production process.

⁶⁰ Dessart, L. and Standaert, W. (2023) "Strategic storytelling in the age of Sustainability," *Business Horizons* [Preprint]. Available at: <https://doi.org/10.1016/j.bushor.2023.01.005>.

2.2 PHYSICAL AND ONLINE CHANNELS IN LUXURY INDUSTRY

The literature demonstrates that fashion industry brands must continually improve their sustainability communication. It must be emphasized, however, that sustainable communication in e-commerce is at a relatively low level, despite the considerable traffic that luxury company websites receive⁶¹.

For this reason, most luxury customers still prefer to shop in the physical store (Figure 9), and about the online experience, the online channels such as apps and tablets are far less favored⁶².

In numbers, it can be concluded that 71.2% prefer the experience in the physical channel, while the remaining 28.8% complete their purchase in the online channel. The figure below also highlights the preferred tool used for online purchases.

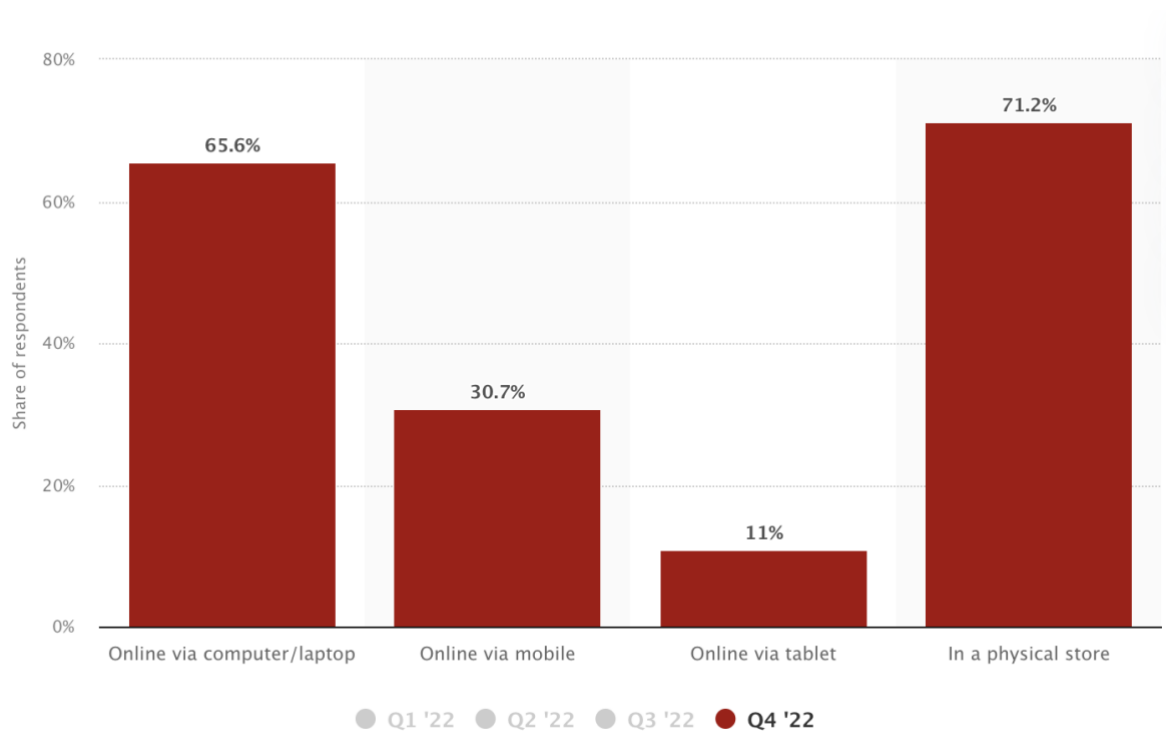


Figure 9: Shopping channel preference for luxury brand in the last quarter 2022 in Europe (Statista, 2023)

However, it is always better to offer a complete shopping experience combining both channels, giving customers the opportunity to choose the channel that best suits their needs and preferences in a specific moment.

⁶¹ SanMiguel, P. *et al.* (2021) “How to communicate sustainability: From the corporate web to e-commerce. the case of the Fashion Industry,” *Sustainability*, 13(20), p. 11363. Available at: <https://doi.org/10.3390/su132011363>.

⁶² Altiant. (2023). “Shopping channel preference for luxury brand and service purchases in Europe from 1st quarter to 4th quarter 2022”. In Statista. Available at: <https://www.statista.com/statistics/1235046/luxury-shopping-channels-europe/>

The conclusion that follows is that the digital customer experience needs to be enhanced and improved so that the brand does not lose customers at various touchpoints, but that the online experience must be equally magical as the in-store experience in order for customers to have a full, omnichannel shopping experience⁶³. The customer can therefore enjoy the sensory and tactile experiences of physical stores in addition to the convenience and quickness of online brand websites.

Because of constraints, customers, particularly high-end shoppers, switched to digital outlets during the Covid-19 pandemic. So, brands were forced to hasten their shift to digital and enhance the digital customer experience for their clients in order to prevent them from noticing any gaps in the purchasing process.⁶⁴

Luxury companies in general attach much more importance to the experience in the physical shop by investing heavily in creating a unique and distinctive environment compared to the competition. In addition, in order to guarantee a personalized customer experience, shops offer unique and exclusive services such as style consultants and professional sales assistants, who can best inform customers about products and suggest the best offer according to their preferences and wishes.

Especially for luxury brands, the moment of purchase is crucial in defining the brand image. Indeed, the customer shopping experience largely determines the degree of satisfaction and any future purchases.

The tendency of customers is therefore still to prefer physical shops for the exclusive and personalized experience where they can touch and try on products, experiencing unique sensations that cannot be replicated online, however, we must not give up on improving and investing in digital channels because people will probably always prefer physical channels, but rather the infinite number of tools available today can allow us to have a unique experience online as well.

In addition to complementing the experience in the physical channel, the website should be able to tell the story of the brand, its values, and present its products as clearly as possible.

Furthermore, the luxury brand's website is crucial to extend the brand's reach into other countries and regions, reaching distant customers that would otherwise be more difficult to attract.

⁶³ Deloitte. (2022). "Cresce la digitalizzazione del settore Fashion & Luxury, ma i negozi fisici si confermano strategici per i clienti". Available at: <https://www2.deloitte.com/it/it/pages/technology/articles/cresce-la-digitalizzazione-del-settore-fashion-luxury.html>

⁶⁴ Zimmerling, A. and Chen, X. (2021) "Innovation and possible long-term impact driven by COVID-19: Manufacturing, personal protective equipment and digital technologies," *Technology in Society*, 65, p. 101541. Available at: <https://doi.org/10.1016/j.techsoc.2021.101541>.

2.3 EXISTING LITERATURE ON MARTECH

MarTech (an acronym for marketing technology) is an emerging field of excellence that combines marketing, technological and analytical qualities, creating new technological solutions to make marketing efforts more efficient and to support marketing initiatives, making a unique and better offer for the customer⁶⁵.

In recent years, technology has made great strides to become a fundamental part of the success of companies. The level of technology influences the level of distinction from the competition, and in recent years this has also become important in the marketing sphere.

Specifically, in Italy, since 2011, with around 150 suppliers of this union of marketing and technology, we have reached 8000 in 2020 and 9932 in 2022, with a growth rate of around 5.3%, which will tend to grow more and more in the future. (Figure 10)

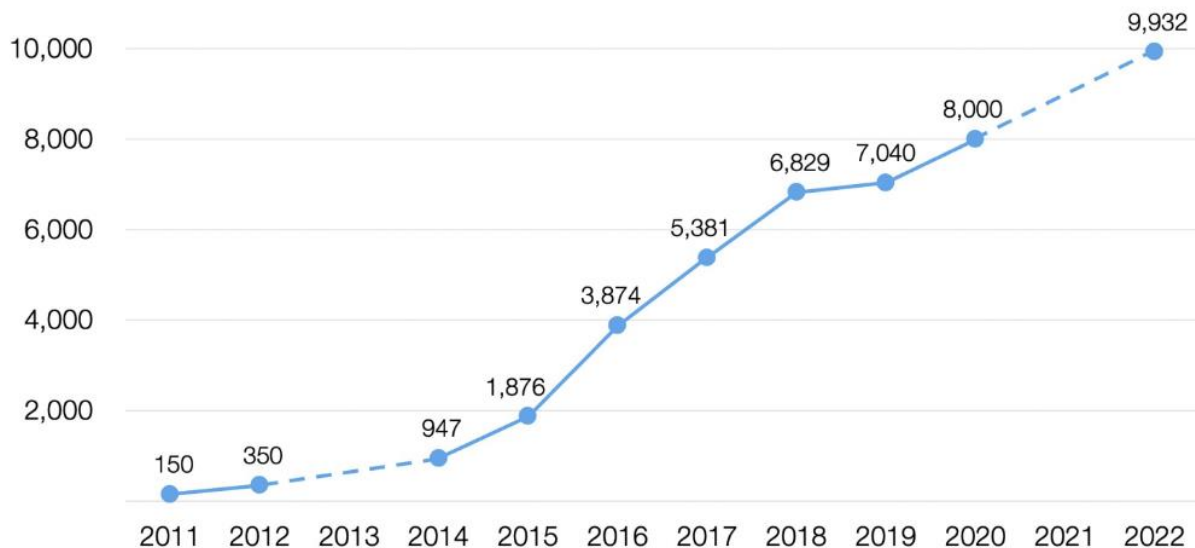


Figure 10: The MarTech landscape in Italy (Digital Sales, 2022)

Since the Covid-19 pandemic, companies' marketing investments have started to be reduced, but with a high share of marketing technology spending, indeed, MarTech in 2022 holds a 26.6% share of marketing expenditure budgets⁶⁶.

⁶⁵ Parimi, S. (2021). "Marketing & Technology – an emerging field of excellence". Academy of Marketing Studies Journal. Suppl. Special Issue 2, 25, 1-2. Available at <https://www.proquest.com/scholarly-journals/marketing-technology-emerging-field-excellence/docview/2524418271/se-2>

⁶⁶ Digital Sales, Lean Evolution (2022) "Report state of martech 2022: Dati, innovazione e infinite opportunità. Digital Sales: I nuovi processi di Vendita - CRM - Sales intelligence." Digital Sales srl. Available at: <https://www.digital-sales.it/blog/report-state-of-martech-2022-dati-innovazione-e-infinite-opportunita>

As can be seen from the graph below⁶⁷ (Figure 11), the main application areas of MarTech are:

- CRM (Customer Relationship Management): everything that comprises the relationship between the brand and its customers. CRM aims to improve the customer experience throughout the customer journey to better satisfy the customer and create long-term relationships with him. Thus, CRM does not only focus on satisfying the individual transaction, but on obtaining a lasting relationship with the consumer. In practice, CRM consists of collecting and analyzing data on customers in order to offer them personalized offers and to always welcome them in the best possible way. The benefits of CRM are very numerous, besides as mentioned before it can establish lasting and profitable relationships with customers, it is possible to increase the number of sales (by more easily identifying the customers most willing to buy), to forecast sales more effectively and easily, and to manage the large amount of customer data more efficiently so that it is more easily accessible to the different departments of the company⁶⁸.
- CMS (Content Management System): i.e. everything related to the management of online content such as the brand website⁶⁹.
- Marketing Automation Platform: i.e. the automation of core marketing activities such as automated e-mails that can send customized promotional offers to customers based on their tastes and preferences⁷⁰.

⁶⁷ Digital Sales, Lean Evolution (2022) "Report state of martech 2022: Dati, innovazione e infinite opportunità. Digital Sales: I nuovi processi di Vendita - CRM - Sales intelligence." Digital Sales srl.

Available at: <https://www.digital-sales.it/blog/report-state-of-martech-2022-dati-innovazione-e-infinite-opportunita>

⁶⁸ Salesforce Italia. "Customer relationship management". Available at: <https://www.salesforce.com/it/learning-centre/crm/what-is-crm/>

⁶⁹ Goodwin, S. et al. (2006) "CMS/CMS: Content Management System/Change Management Strategies," Library Hi Tech, 24(1), pp. 54–60. Available at: <https://doi.org/10.1108/07378830610652103>.

⁷⁰ Todor, R. D. (2016). "Marketing automation". Bulletin of the Transilvania University of Braşov Series V: Economic Sciences. Vol. 9 (58) No. 2 - 2016. Available at: http://webbut2.unitbv.ro/Bulletin/Series%20V/BULETIN%20I/10_Todor.pdf

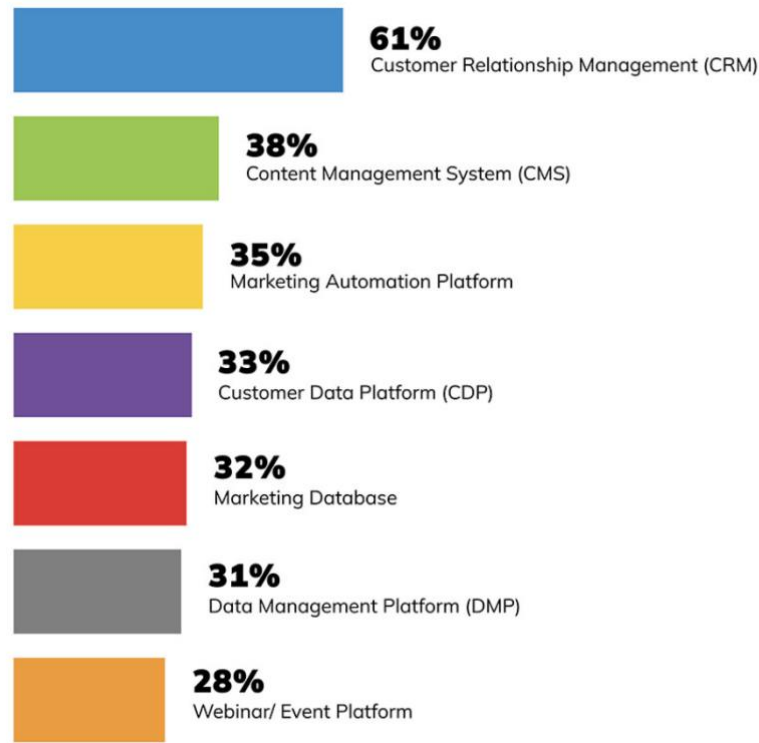


Figure 11: Main MarTech Solutions (Digital Sales, 2022)

An increasingly used technology in MarTech to improve marketing efforts is artificial intelligence (AI), computer systems that simulate human intelligence in performing certain tasks. The machine demonstrates certain human qualities such as learning and reasoning⁷¹.

In recent years, we have experienced the growth and expansion of this new technology, which is becoming more and more fundamental to making the company competitive and to better satisfy the customer.

Figure 12 shows the increasing trend of the profits generated by artificial intelligence worldwide from 2018 until the forecast of the numbers that will be in 2025. The growth, as can be seen, is very rapid and will reach approximately USD 126 billion in 2025⁷².

⁷¹ Tiwari, S. and Tomar, P. (2023) “Is Artificial Intelligence (AI) the future of sustainable or green fashion?: A Review,” Recent Progress in Science and Technology Vol. 2, pp. 1–8. Available at: <https://doi.org/10.9734/bpi/rpst/v2/5032a>.

⁷² Omdia. (2020). “Revenues from the artificial intelligence (AI) software market worldwide from 2018 to 2025 (in billion U.S. dollars)” [Graph]. In Statista. Available at <https://www.statista.com/statistics/607716/worldwide-artificial-intelligence-market-revenues/>

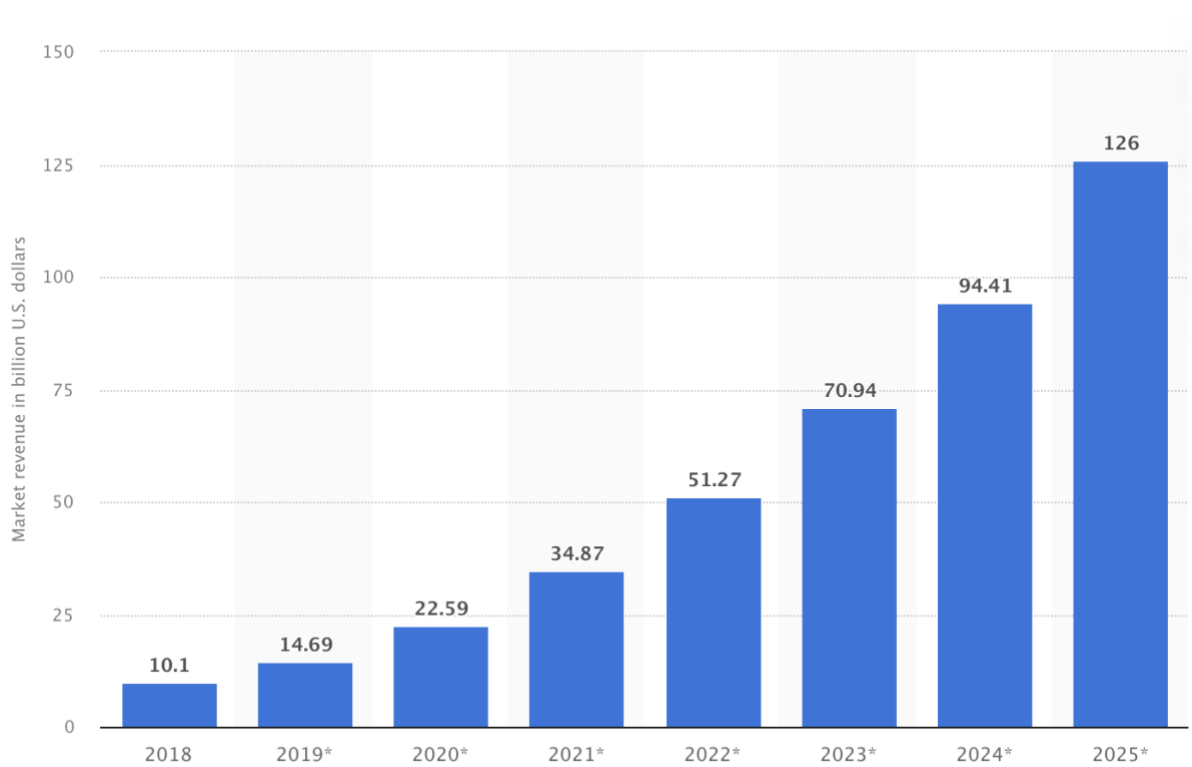


Figure 12: Artificial intelligence software market revenue worldwide from 2018 to 2025 (Statista, 2020)

2.3.1 MARTECH IN THE FASHION LUXURY INDUSTRY

MarTech in the fashion and luxury industry is increasingly being used to enhance online brand presence and offer unique customer experiences.

The fashion industry in recent years is being revolutionized by the advent of artificial intelligence at all stages, from production to marketing and sales. During 2022, these industries invested in AI reaching \$7.3 billion⁷³. Artificial intelligence in the fashion industry could be used to design and present new clothing collections, in fact, AI after analyzing the current desires of different consumer segments, through inspirations and ideas is able to create ad-hoc garments with a high approval rate of the brand's customers thanks to the collaboration of human designers with AI.

Already used by some brands such as *Gucci*, is the use of augmented reality, to “try on” garments directly from the website, virtually wearing the product in question and reducing the percentage of garments purchased online and returned after trying them on. *Gucci*, through the use of the app, has given its customers the opportunity to try on the brand's trainers to engage them directly from home by providing an interactive experience.

⁷³ Tiwari, S. and Tomar, P. (2023) “Is Artificial Intelligence (AI) the future of sustainable or green fashion?: A Review,” *Recent Progress in Science and Technology* Vol. 2, pp. 1–8. Available at: <https://doi.org/10.9734/bpi/rpst/v2/5032a>.

Lately, chatbots are also increasingly being used as online customer service and 24/7 customer support. In addition, fashion brands can use AI to predict fashion trends, and authenticate products so that they are impossible to replicate and avoid counterfeits.

2.3.2 CHATBOT TECHNOLOGY TO IMPROVE THE DIGITAL CUSTOMER EXPERIENCE

One area of MarTech that it will be explored in this research is the use of chatbots. Chatbots are increasing in number, indeed as Figure 13 below shows, from 2016 when the size of the global chatbot market was \$190.8 million it will reach \$1.25 billion by 2025⁷⁴.

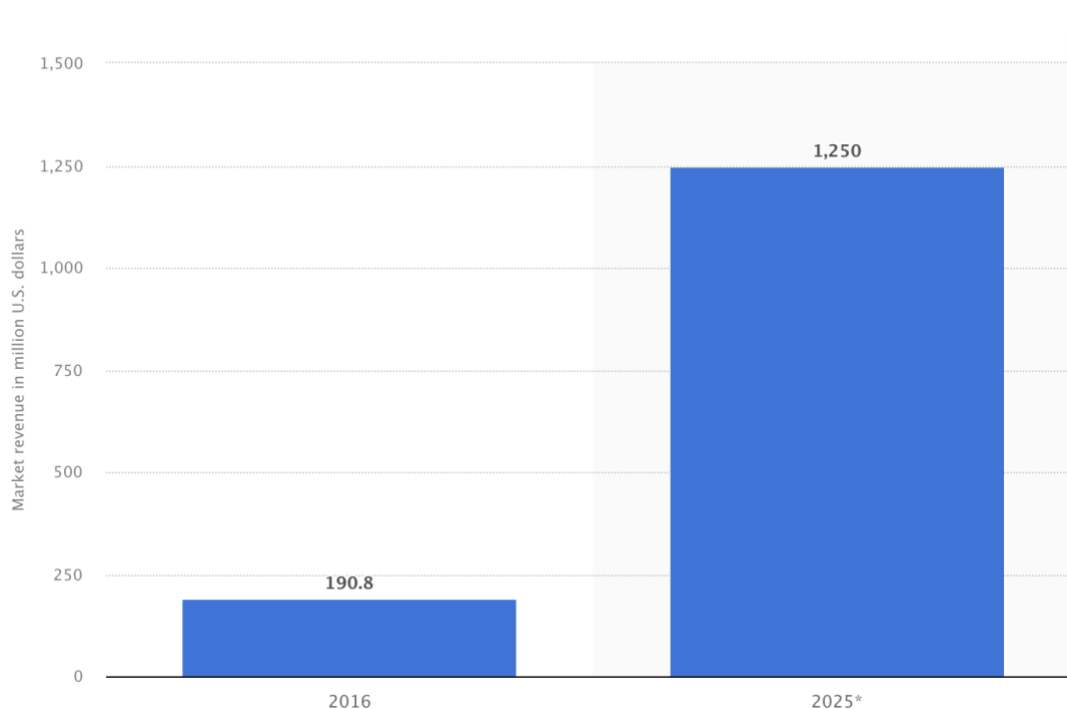


Figure 13: Chatbot market worldwide (Statista, 2022)

A chatbot is a conversational bot, educated through artificial intelligence and thus able to answer customer questions better and better over the years, simulating a sales assistant in the physical shop. Chatbots can have many uses, they can offer support to customers at any time of the day from the comfort of their own home, they can answer customer queries, collect opinions, feedback and useful data to promote products to customers.

The advantages of using chatbots are many, in fact they can⁷⁵:

⁷⁴ Research and Markets. (2022). “Size of the chatbot market worldwide from 2021 to 2030 (in million U.S. dollars)”. In Statista. Available at: <https://www.statista.com/statistics/656596/worldwide-chatbot-market/>

⁷⁵ Toffoletto, S. (2022) “Chatbot platform: Definizione E I Vantaggi, CM.com”. Available at: <https://www.cm.com/it-it/blog/13-vantaggi-offerti-dai-chatbot-di-conversazione/>

- Increase the efficiency and productivity of companies: the chatbot produces immediate and error-free answers, even handling several requests at the same time. In this way, it is possible to reduce the amount of work to human staff by making them concentrate more on other “more complicated” work.
- Improve the experience in the online channel: making the customer feel always followed and supported even when they are away at any time of the day and any day of the week, without the need for breaks or rests. The customer in this way will not have to waste time getting to the physical shop or waiting for the shop to open to make a phone call to speak to a sales assistant.
- Increase the customer retention rate: through well-educated chatbots it will be possible to create an unforgettable relationship for the customer, making them forget that they are actually conversing with a machine.
- Collect and analyze customer data, opinions and thoughts to provide them with the best possible personalized experience.
- Improve the marketing strategy.
- Offer a multilingual service to converse also with distant customers from any part of the world and help them with their specific requests.

Chatbots can therefore be proposed as a fundamental part of the digital customer experience, to entice consumers to buy even online and to reduce the loss of potential customers in the marketing funnel. However, they are not always successful with customers, so it is important to make sure that chatbots are easy to use; that they are always able to understand the language and requests of customers (even the most complex ones) so as to provide them with a useful response, able to help them in their purchasing process and furthermore, it should not be an invasive tool, which makes the customer feel pressurized. Indeed, it is the customer who must seek out and be enticed to converse with the chatbot, he must not feel oppressed or obliged to release his information, the relationship between the two must be as natural as possible.

There are different types of chatbots that can be classified according to the knowledge domain, the service provided to the customer, the objectives, the input processing and output generation, and according to human help⁷⁶.

⁷⁶ Adamopoulou, E. and Moussiades, L. (2020) “An overview of chatbot technology,” *IFIP Advances in Information and Communication Technology*, pp. 373–383. Available at: https://doi.org/10.1007/978-3-030-49186-4_31.

The first parameter, based on the knowledge domain, is based on the amount of data and thus knowledge that a chatbot can access. The more a chatbot has access to more information and data, the more training and education it has and thus will be prepared to give more accurate answers. In fact, a distinction is made between closed-domain chatbots (knowledge limited to a few topics) and open-domain chatbots (higher degree of accuracy).

The second classification parameter considers the level of intimate interaction with the customer, personality and the degree of similarity with a real human sales assistant, but obviously depends on the task the chatbot has to perform. In fact, to book restaurants or something else, there is no need for a high level of chatbot personality, on the contrary, to improve a customer's digital customer experience on a brand website, the chatbot's personality may be the key attribute that drives the customer to buy.

The classification of chatbots based on the third parameter, the objectives of the chatbot, divides chatbots into informative, conversational, activity-based and many others.

With regard to the processing of data (input) for the generation of output (response), there are rule-based models (decides the response to be given according to predefined rules), retrieval-based models (analyses the available knowledge through the use of APIs) and generative models (generates better responses based on the messages of current and previous users).

The classification of chatbots by human help instead differentiates them according to the amount of human computation in the chatbot elements⁷⁷.

The customer experience experienced after using chatbots depends on the quality of the service, the quality of the system and the quality of information⁷⁸ (Figure 14).

- Service quality has assurance, empathy and responsiveness as sub-dimensions. Indeed, the quality of service depends on the chatbot's problem-solving and communication skills, the level of understanding of the customer's problems and the timeliness with which the chatbot solves problems.
- The quality of the system depends on its response time; usability, i.e. its ease of use; reliability; availability, i.e. its limitless availability; and adaptability, i.e. its ability to adapt to changes and respond to customer queries in an up-to-date manner.

⁷⁷ Adamopoulou, E. and Moussiades, L. (2020) "An overview of chatbot technology," *IFIP Advances in Information and Communication Technology*, pp. 373–383. Available at: https://doi.org/10.1007/978-3-030-49186-4_31.

⁷⁸ Jenneboer, L., Herrando, C. and Constantinides, E. (2022) "The impact of Chatbots on Customer Loyalty: A systematic literature review," *Journal of Theoretical and Applied Electronic Commerce Research*, 17(1), pp. 212–229. Available at: <https://doi.org/10.3390/jtaer17010011>.

- The quality of information depends on its ability to provide accurate, relevant and valuable information to the customer.

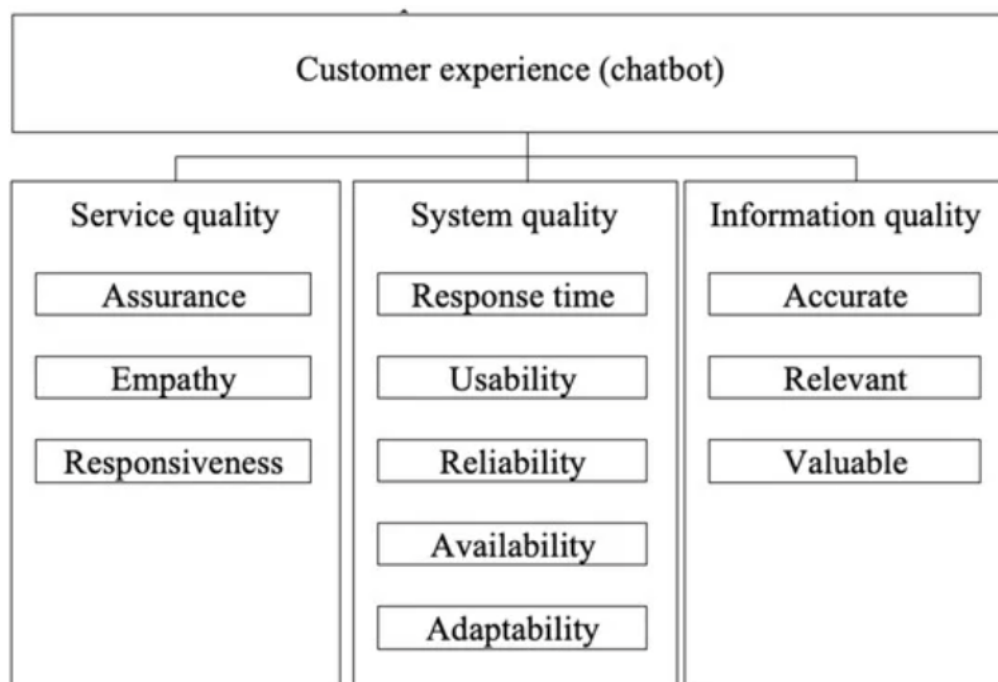


Figure 14: Customer experience (chatbot) and its dimensions (Jenneboer et al., 2022)

In the case of this study, it will be seen in the next chapter (3) how chatbots with certain characteristics are able to improve the digital customer experience in the luxury sector, despite the importance of the physical channel for this industry. It would be important to transfer a dream effect and magic typical of luxury products also to digital channels by making the moment of purchase an event in the online as well, in order to guarantee a true omnichannel shopping experience.

2.3.2.1 EFFECT ON CUSTOMER LOYALTY

Due to the advantages of chatbots described in the previous paragraph, brands that include chatbots on their websites can exploit advantages over their competitors, increase customer satisfaction and thus customer loyalty. Indeed, customers, thanks to an additional communication tool with the brand, and thanks to accurate answers to their questions, gain more trust in a specific brand.

Once the customer has a positive experience with the chatbot due to the quality of the service, the system and the information, he/she will be very satisfied with the experience he/she had, consequently he/she will have great trust in the brand in question and increase the commitment to that brand.

Thus, it is very likely that there is a positive relationship between the use of chatbots and customer loyalty and the customer satisfaction experienced when using these chatbots is the mediator⁷⁹.

Therefore, to summarize, customer satisfaction is crucial since it encourages brand loyalty and entices customers to suggest products or brands to families and friends.

2.3.2.2 METRICS FOR MEASURING THE SUCCESS OF CHATBOTS

With regard to the metrics that can be used to measure the success of chatbots, one must obviously start with customer satisfaction.

Customer satisfaction can be measured through the Net Promoter Score (NPS). NPS reveals the extent to which consumers are willing to promote for a brand or product. Consumers are surveyed and asked to rate their likelihood of recommending the product on a scale of 1 to 10. Following the survey, clients are split into:

- Promoters: customers who are pleased and willing to recommend it (who rates 9 or 10).
- Passive: customers that are satisfied with the product but unenthusiastic (who rates 7 or 8).
- Detractors: customers who are not willing to recommend it (who rates from 0 to 6).

Then, the formula related to NPS is: Percentage of Promoters – Percentage of Detractors

This system of monitoring the customer satisfaction is simple, intuitive but on the other hand it can be not specific enough because it can't explain why the customers are detractors⁸⁰.

In conclusion, The NPS score allows you to determine which customers are happy to promote your business and which ones are planning to switch to a rival.

Another metric to measure customer satisfaction is CSAT (Customer Satisfaction Score). Unlike the NPS, it is a metric that measures short-term satisfaction. CSAT, after a single transaction, assesses whether your product or service lives up to or falls short of customers' expectations. To compute it customers who vote satisfied or very satisfied must be added up.

Finally, to measure the success of chatbots, it may be useful to measure the conversion rate, i.e. the percentage of visitors to a particular brand's website who after experienced the chatbot, complete the desired objective, i.e. purchase.

⁷⁹ Jenneboer, L., Herrando, C. and Constantinides, E. (2022) "The impact of Chatbots on Customer Loyalty: A systematic literature review," *Journal of Theoretical and Applied Electronic Commerce Research*, 17(1), pp. 212–229. Available at: <https://doi.org/10.3390/jtaer17010011>.

⁸⁰ Bendle, N., Pfeifer, P., Reibstein, D., Farris, P. (2017) "Key Marketing Metrics: The 50+ metrics every manager needs to know" (2nd Edition). Pearson Education

2.4 IDENTIFICATION OF RESEARCH GAP IN PREVIOUS LITERATURE

As far as the topics of sustainability and MarTech are concerned, both have been much discussed in the existing literature and represent an active topic of study and research. The research gap lies precisely in the combination of the two, how a MarTech approach can help in leveraging the sustainability theme, satisfying the growing concern of consumers towards more ethical and responsible products.

In a world where one has to keep up with numerous changes, artificial intelligence is revolutionizing the relationship between brands and consumers, and technology is increasingly able to provide a unique experience for individuals. Indeed, the high quality and personalization of service provided by technology is increasingly enhancing the customer journey⁸¹.

AI should not only be thought of as a tool that can replace human work, but as a tool that can transform and enrich the customer experience⁸².

The key to successful online sales, therefore, is to create an effective, customized experience through the brand's website, so as to exceed customers' expectations and satisfy them to the fullest, thus creating long-term customer relationships. Informativity, entertainment, a sense of social presence and a sensory component of the customer experience are the elements that must be present on web pages to enhance the consumer experience in an excellent way⁸³.

MarTech can improve the digital consumer experience in numerous ways: marketing automation to make marketing teams more efficient preserving creativity, while providing personalization of the experience and leveraging both customer and performance data and metrics useful for more effective making campaigns.

Furthermore, in the luxury fashion industry, previous literature has not extensively analyzed consumer perception, satisfaction and purchase intention towards innovative sustainable materials; even more these factors when the purchasing experience happens in different channels, like the brand store (physical channel) or the luxury brand website (digital channel).

Thus, the contribution of this thesis is twofold:

- The first aims to demonstrate that the sale of luxury products made with innovative sustainable fibers through digital channels, such as the brand website, has a negative and minor effect on customer satisfaction and thus on the actual purchase by consumers, when compared to physical channels (H1);
- The second contribution aims to propose MarTech as an approach that can mitigate the negative relationship between the online channel and the actual purchase, analyzed above (H2).

⁸¹ Liu-Thompkins, Y., Okazaki, S. and Li, H. (2022) "Artificial empathy in marketing interactions: Bridging the human-ai gap in affective and Social Customer experience," *Journal of the Academy of Marketing Science*, 50(6), pp. 1198–1218. Available at: <https://doi.org/10.1007/s11747-022-00892-5>

⁸² Hoyer, W.D. et al. (2020) "Transforming the customer experience through New Technologies," *Journal of Interactive Marketing*, 51, pp. 57–71. Available at: <https://doi.org/10.1016/j.intmar.2020.04.001>

⁸³ Bleier, A., Harmeling, C.M. and Palmatier, R.W. (2018) "Creating effective online customer experiences," *Journal of Marketing*, 83(2), pp. 98–119. Available at: <https://doi.org/10.1177/0022242918809930>

2.4.1 LITERATURE IN SUPPORT OF H1

Customer satisfaction is characterized as the capacity of a characteristic of a good or service to satisfy the consumer throughout use, an assessment made after the product has been purchased, and a judgment on the experience had⁸⁴.

Customer satisfaction levels will mostly be influenced by a brand's capacity to go above and beyond expectations. Indeed, if customers perceives a value that is higher than the value they were expecting, they will be enthused about the product or service.

Evidently, satisfied customers are more likely to make subsequent purchases, increasing their level of loyalty⁸⁵. This is due to the fact that if buyers are pleased with a product, their level of trust in both the product and the brand in question will rise. If the brand has won the customer's trust, this will afterwards be very lucrative because they will readily buy back for their future purchases. In fact, a research published in the Harvard Business Review found that a 5% increase in customer loyalty can boost business revenues by as much as 95%⁸⁶.

Unfortunately, the consumer experience cannot be compared between various offline and online sales channels, particularly when talking about luxury retail.

The physical store does, in fact, play a crucial part in luxury companies because it serves as the brand's 'strength' and distinguishing feature. The reason for this is that with the greater price tag, luxury shoppers view the purchase as a true event that should be wonderful and special. The physical store is the setting where the customer and sales associate develop a personal connection, allowing for customization of the client's experience and purchase⁸⁷.

According to the Deloitte report, the physical channel of luxury brands will still account for more than 70% of revenues in 2025, confirming the distinctness of the premium brand shop and the magic effect it is able to release in the consumer experience. Additionally, 40% of luxury shoppers in 2025 will be from the younger generation (Millennials and Generation Z), and with the great frequency with which younger generations use internet channels, luxury businesses will undoubtedly need to concentrate more on this market.⁸⁸

Thus, revisiting the digital marketing strategy will undoubtedly be a top priority for luxury firms to take into account. Luxury businesses will only be able to succeed by transferring the magical effect of the customized

⁸⁴ Mittal, V. et al. (2023) "Customer satisfaction, loyalty behaviors, and firm financial performance: What 40 Years of Research tells us," Marketing Letters. Available at: <https://doi.org/10.1007/s11002-023-09671-w>.

⁸⁵ Utami, B., Hidayat, M. S., Setyariningsh. (2023). "The relationship between customer satisfaction and loyalty". Available at: <https://ijssr.ridwaninstitute.co.id/index.php/ijssr/article/download/222/365/2031>

⁸⁶ Harvard Business School. The economics of E-loyalty. HBS Working Knowledge. Available at: <https://hbswk.hbs.edu/archive/the-economics-of-e-loyalty>

⁸⁷ Bergamaschi, E. (2022). "La Nuova Normalità del Lusso: Perché i negozi fisici Sono Ancora Essenziali". CEGID. Available at: <https://www.cegid.com/it/blog/negozi-fisici-sono-essenziali-brand-del-lusso/>

⁸⁸ Deloitte. (2022). "Cresce la digitalizzazione del settore Fashion & Luxury, ma i negozi fisici si confermano strategici per i clienti". Available at: <https://www2.deloitte.com/it/it/pages/technology/articles/cresce-la-digitalizzazione-del-settore-fashion-luxury.html>

event in the physical store to the internet channel, with a singular and unrepeatable digital consumer experience⁸⁹.

On the other side, 43% of younger consumers are looking to buy from firms that are conscientious of sustainable practices, as they are becoming more aware and conscious of environmental and sustainability issues⁹⁰.

2.4.2 LITERATURE IN SUPPORT OF H2

Today, many consumers oppose online shopping⁹¹, due to this sensation gap between the physical shop and the online shop, but through the use of artificial intelligence this can be bridged. Indeed, the use of AI could help in several ways, reducing the degree of uncertainty present during the moment of online purchase⁹² and also reducing the online return rate⁹³.

MarTech, as analyzed above, can be considered as a valuable tool to diminish the existing negative relationship between online channels and customer experience in the luxury sector especially regarding the sale of innovative sustainable fibers.

MarTech can help to diminish this negative effect in several ways. One example, which is the subject of this study, is the case of chatbots. The online customer experience can be monotonous, lacking in fun and the magical component that characterizes luxury, the use of chatbots can fill these gaps, making the digital customer experience as close as possible to that of the physical store. So, although it may seem far-fetched, the ultimate goal is to make chatbots resemble store sales assistants as closely as possible.⁹⁴

In addition to providing a personalized experience even remotely, chatbots can also be useful for gathering customer information to ensure a personalized customer experience, listening to their opinions and needs, and proposing recommendations and offers that are perfect for their tastes and preferences.

Often brands don't use this solution because of the difficulty of implementation, or even because the chatbot might give many problems. Indeed, it may not work as it should and may not give what it should actually propose to the customer.

⁸⁹ Larcher, di A. (2022). "Il settore e-commerce del lusso: Dati, trend E 7 idee per incrementare Le conversioni". SaleCycle. Available at: https://www.salecycle.com/it/blog/strategia/settore-e-commerce-del-lusso/#Statistiche_e%20trend_di_consumo_nel_settore_e-commerce_del_lusso_e_della%20moda

⁹⁰ Deloitte. (2022). "Cresce la digitalizzazione del settore Fashion & Luxury, ma i negozi fisici si confermano strategici per i clienti". Available at: <https://www2.deloitte.com/it/it/pages/technology/articles/cresce-la-digitalizzazione-del-settore-fashion-luxury.html>

⁹¹ Jayaswal, P. and Parida, B. (2023) "The role of augmented reality in redefining e-tailing: A review and research agenda," *Journal of Business Research*, 160, p. 113765. Available at: <https://doi.org/10.1016/j.jbusres.2023.113765>.

⁹² Romano, B., Sands, S., Pallant, J. I. (2021). "Augmented reality and the customer journey: An exploratory study". *Australasian Marketing Journal*, 29 (4), pp. 354-363 Available at: <https://journals.sagepub.com/doi/10.1016/j.ausmj.2020.06.010>

⁹³ Deloitte Digital & Snap Inc. (2021). Snap consumer AR: Global report 2021. Available at: https://downloads.ctfassets.net/inb32lme5009/hSj5P9vzaox79vITqXZfj/d6094404212f1327e8b7d69535337941/Snap_Consumer_AR_Research_GlobalReport.pdf/

⁹⁴ Chandel, S. et al. (2018) "Chatbot: Efficient and utility-based platform". *Advances in Intelligent Systems and Computing*, pp. 109–122. Available at: https://link.springer.com/chapter/10.1007/978-3-030-01174-1_9

3 THE RESEARCH

3.1 RESEARCH QUESTION AND CONCEPTUAL MODEL

Products with innovative sustainable fibers in the luxury sector therefore have potential success, but this obviously depends on the ability of companies to guarantee the product quality and exclusivity typical of products in this industry. The company must simultaneously communicate the value of the product to consumers along with the environmental benefits associated with these garments.

Thus, after the entire review of existing literature, after identifying the gap, and to make the two contributions mentioned in the previous chapter (H1 and H2), the research question to be analyzed in this study is as follows:

When does the use of sustainable innovative fibers on luxury products sold through online channels (vs physical) negatively influence customer satisfaction and effective purchase? Does the use of MarTech decrease the negative effect of online channels on customer satisfaction and effective purchase?

As a MarTech solution, an innovative chatbot will be offered on the luxury brand's website, simulating a professional and qualified sales assistant in the physical shop. Indeed, each customer will be helped, if he or she wishes, by a virtual assistant. It will have a name and a face as if it were a real personal assistant, it will introduce the consumer to the brand's innovative products, explain their quality, value, sustainability, but it will also interact with the customer, asking for opinions, to understand what they like, what they don't like and why, to offer a better customer experience.

In addition, consumers will also be able to try these innovative products virtually, through a smart fitting room using augmented reality.

In the study, the stimulus related to the physical channel with the presence of MarTech will also be present. Indeed, through MarTech, inside the shop it is possible to learn more about the brand's innovative collection, interacting with screens that will explain to the consumer how the fashion industry still has a negative impact on the planet, the traceability of materials throughout the production process and an intelligent mirror through which you can try on garments in one second, without having to waste time changing in the fitting room.

As illustrated below in the conceptual model in Figure 15, the independent variable is online vs. physical channel in the sale of innovative sustainable luxury products; the dependent variables are customer satisfaction and relative purchase intention. This relationship can be reinforced by the presence or absence of the moderator, in this case MarTech, as a tool for a better and customized customer experience.

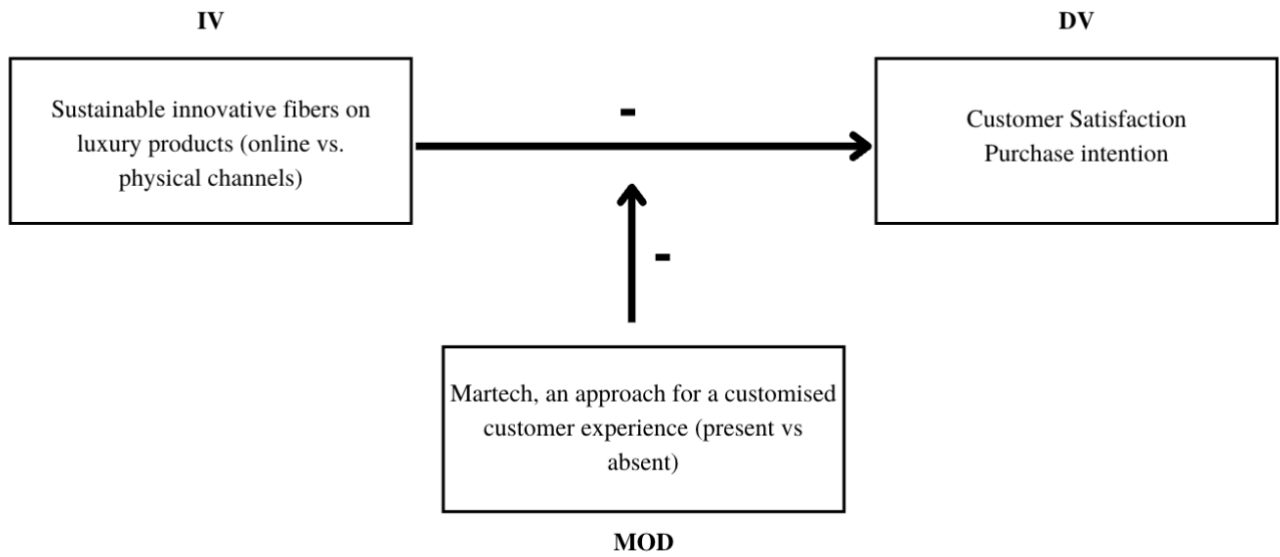


Figure 15: Conceptual Model

3.2 METHOD

The conceptual model will be tested by a quantitative research study consisting of a pre-test and a subsequent main study. It was intended to create a randomized between-subjects survey on the Qualtrics platform (where each respondent has the opportunity to try only one of four proposed experiences) and distribute it to a large convenience sample to support the thesis in a meaningful way.

A between-subject design was chosen to subsequently do a difference analysis between groups of participants who viewed different stimuli.

The type of sample selected is a convenience sample, i.e. the respondents are easily accessible persons, so the selection of units is left to the author.

The market taken into consideration is the Italian market and the target group is males and females aged between 21 and 61.

The questionnaire was mainly distributed in two social media Whatsapp and Instagram.

Finally, the results were analyzed using SPSS software.

3.2.1 THE FOUR EXPERIENCES: THE FOUR PROPOSED STIMULI

Each respondent in both the pre-test and main study was subjected to a different experience and then asked to answer questions related to the one they experienced. The study is specifically a randomized between-subject design because each respondent only experiences one stimulus, so different people experience different stimuli. The four different stimuli were presented in a randomized and uniform manner to the respondents: indeed, everyone was equally likely to be subjected to one stimulus rather than another.

As the research deals with online and physical channels in the luxury sector, first of all a luxury brand called '*Suhra*' was invented. This was for a twofold purpose: to give the respondents a scenario as realistic as possible by creating a real luxury brand, but at the same time to avoid transferring positive or negative associations into the experiment by using a known and established brand.

The four stimuli that were created and submitted to answer the research question are:

- CONDITION 1: ONLINE CHANNEL + MARTECH

In the presence of this condition, the following figure (Figure 16) with the description below is presented.

“This is the website of the luxury brand *Suhra*. As you can see in the picture, you can use a chatbot to enrich your online experience. I kindly ask you to click on the link below and try the chatbot for 1-2 minutes. After talking to the chatbot, I ask you to return to this questionnaire.”

LINK: <https://chatbot.hellotars.com/conv/-pHUgo>⁹⁵

⁹⁵ The link of the chatbot prototype has expired. To keep it visible I have posted a video of an example of a possible conversation at this link: <https://drive.google.com/file/d/1T6qtPBDS3xE4BJhtMYXUVb3G-GoQig/view?usp=sharing>
The chatbot is in Italian to facilitate the respondents.

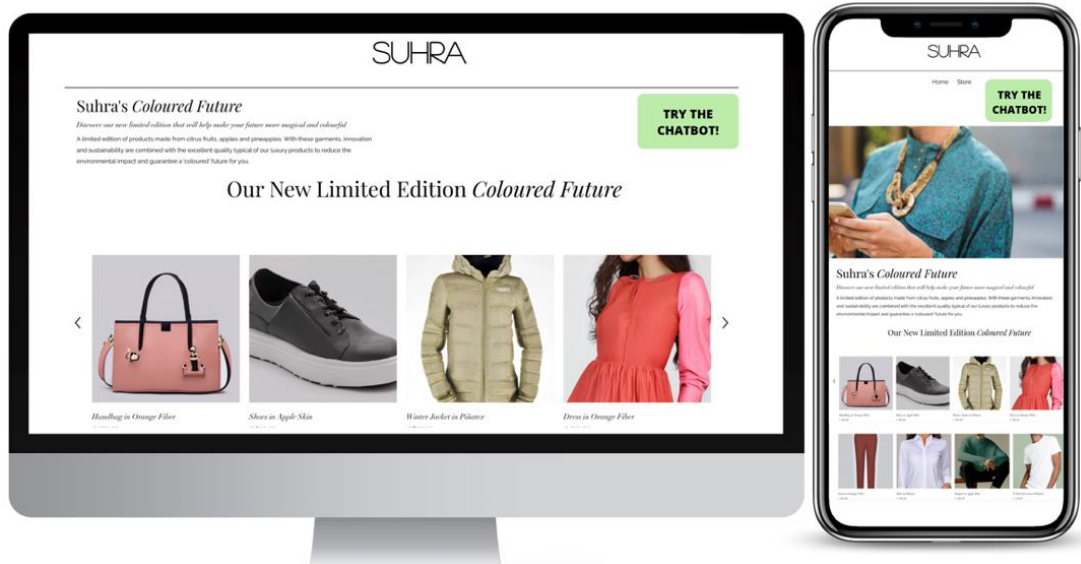


Figure 16: Pretest & Main study condition 1 – Online channel + MarTech

- **CONDITION 2: PHYSICAL CHANNEL + MARTECH**

In the presence of this condition, the following situation is described with the picture below (Figure 17).

"You are in the shop of the luxury brand *Suhra*.

As soon as you enter, you are greeted by sales assistants, who offer to take you through the shop experience and show you the high degree of technology the brand has at its disposal. Indeed, through MarTech, inside the shop you can learn about the new *Coloured Future* collection, a limited edition of garments made from citrus fruits, apples and pineapples. The screens you will be able to interact with will explain how the fashion industry still has a negative impact on the planet: it produces about 10 per cent of the total global carbon emissions. Furthermore, it will be shown how it is possible to verify the very low environmental impact of each component of the production process of these new garments through the traceability of materials. Finally, through a smart mirror you will be able to try on the garments in 1 second, without having to waste time changing!"



Figure 17: Pretest & Main study condition 2 – Physical channel + MarTech

- CONDITION 3: ONLINE CHANNEL WITHOUT MARTECH

In the presence of this condition, the following figure (Figure 18) with the description below is presented.

“This is the website of the luxury brand *Suhra*. You can see the full site in the link below. I ask you to explore the site for about a minute and then return to this questionnaire and answer the questions.”

LINK: <https://susannahsantoro.wixsite.com/suhra>

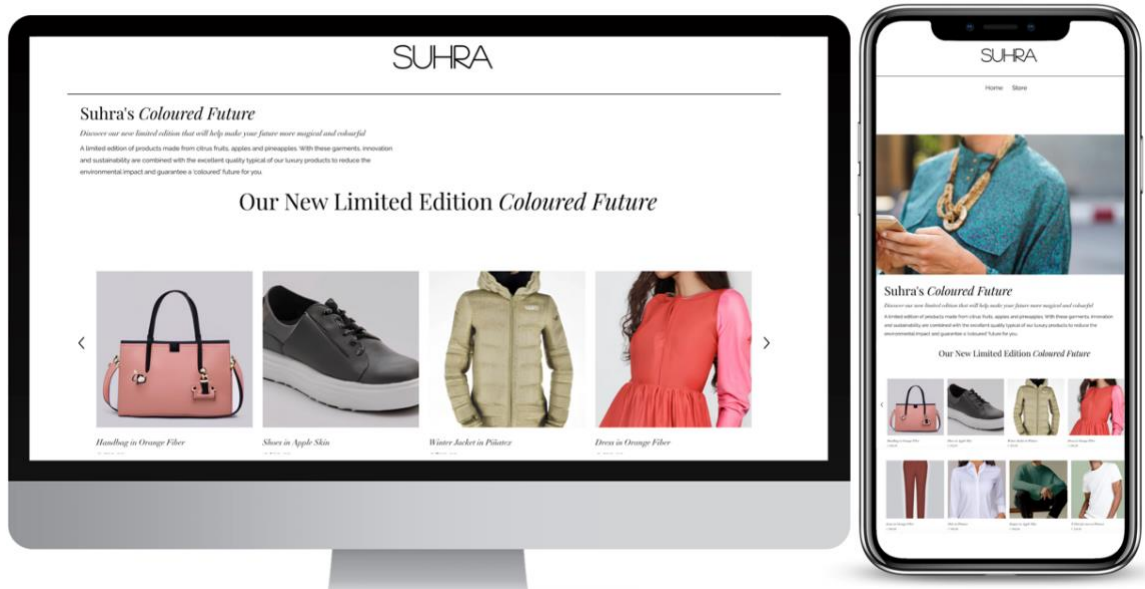


Figure 18: Pretest & Main study condition 3 – Online channel without MarTech

- CONDITION 4: PHYSICAL CHANNEL WITHOUT MARTECH

In the presence of this condition, the following situation is described with the picture below (Figure 19).

“You are in the shop of the luxury brand *Suhra*.

As soon as you enter the shop, you are warmly welcomed by the sales assistants, who offer to accompany you in this in-store experience. They tell you about the new *Coloured Future* collection, a limited edition of garments made from citrus fruits, apples and pineapples. With these garments, innovation and sustainability combine with the excellent quality typical of luxury products to reduce environmental impact and guarantee a 'colourful' future. The sales assistant will explain how the fashion industry still has a negative impact on the planet: it produces about 10% of the total global carbon emissions. Finally, you will be shown how you can verify the very low environmental impact of each component of the production process of these new garments.”



Figure 19: Pretest & Main study condition 4 – Online channel without MarTech

3.3 PRE-TEST

It is necessary to carry out a pre-test before doing the study to verify that the four conditions just described are correctly interpreted by the respondents.

Therefore, to assess whether respondents understand when they are in the physical/online channel situation and when MarTech is present or not.

After a brief introduction explaining the purpose of the study, the significance of each respondent's contribution, and assuring the anonymity of responses, a definition of MarTech has been provided at the beginning of the question to enable everyone to answer it correctly, even for those who are unfamiliar with the term.

In this pre-test the convenience sample consisted of 64 respondents, of which four did not complete the questionnaire and were therefore eliminated.

Of this number, however, 1 respondent was eliminated and was not considered for further analysis because he/she got the attention question wrong, stating that he/she saw a stimulus rather than what he/she actually experienced. Thus, the sample under study was reduced to 59 respondents.

These were divided equally between the four conditions, and in the 59 remaining responses 15 were subjected to the 'online channel with MarTech' experience, 13 to the 'physical channel with MarTech' condition, 15 to the 'online channel without MarTech' and the last 16 to the 'physical channel without MarTech' experience.

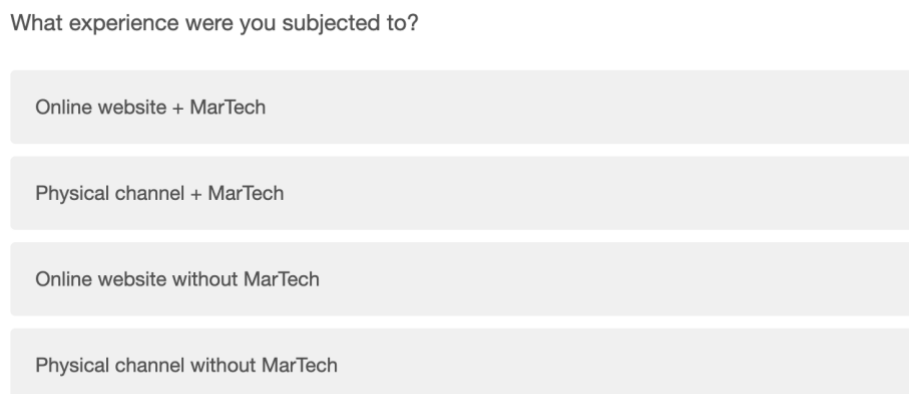
Starting with the descriptive analysis of the sample, the average age was 24.71 and the standard deviation was 6.9, varying from a minimum of 21 to a maximum of 60.

With regard to gender, on the other hand, 31 males and 28 females took part in the questionnaire, therefore the presence of the two genders is very balanced.

The pre-test was very short, in fact it consisted of five questions, two of which were socio-demographic (age and gender) to obtain information about the respondent.

As for the other three questions, the first one concerns a check on the respondent's attention. Indeed, after seeing the stimulus, the respondent had to identify which of the four experiences he had been subjected to. (Figure 20)

What experience were you subjected to?



Online website + MarTech

Physical channel + MarTech

Online website without MarTech

Physical channel without MarTech

Figure 20: Attention question in the pre-test

The other two questions (bipolar scale) were intended to check the correct understanding of the respondents, indeed, one is related to the type of channel and the other to the use or non-use of MarTech. (Figure 21)

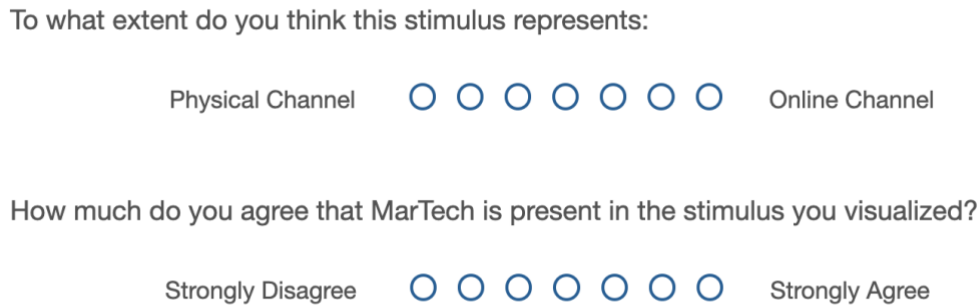


Figure 21: Manipulation check in the pre-test

3.3.1 RESULTS

In order to analyze the results of this pre-test two new dichotomous variables were created on SPSS; “Channel” (with those who tried the two conditions related to the online channel = 1 and those who instead tried the conditions related to the physical channel = 0), and “MarTech” (with those who tried the two conditions with MarTech = 1 and those who instead tried the conditions without MarTech = 0).

To analyze the pre-test, two independent sample t-tests were conducted to test whether there were significant differences between the averages of those who tried the online/offline conditions in relation to recognition of channel type and between the averages of those who tried the conditions with MarTech and without MarTech in relation to recognition of the presence or absence of MarTech.

Indeed independent sample t test is a statistical analysis that is used to compare the averages of two groups that are independent, i.e. two different samples, as in this case, samples that have been subjected to different conditions.

Concerning the first independent sample t-test, so the one in which the channel type recognition averages for the two groups (online and physical) were compared, the group exposed to the online stimuli recorded an average of 7, while the group exposed to the physical channel stimuli recorded an average of 1.24. Since the variable concerning the type of channel used was analyzed using a bipolar scale from 1 (physical channel) to 7 (online channel), it must be acknowledged that the sample was able to recognize the stimuli.

With regard to the second independent sample t-test (where the averages relating to the recognition of the presence or absence of MarTech in the shopping experience were compared), the group exposed to the conditions with MarTech recorded an average of 6.71, while the group exposed to the conditions without MarTech recorded an average of 1.10. Again, as the variable relating to the presence/absence of MarTech was analyzed using a bipolar scale from 1 (strongly disagree for the presence of MarTech) to 7 (strongly agree for the presence of MarTech), it must be acknowledged that the sample was able to recognize the stimuli.

In conclusion, for both independent sample t-tests, it was possible to verify a significant difference between the averages of the two groups since p-value was $0.001 < \alpha/2 = 0.025$.

3.4 MAIN STUDY

The main study was launched and distributed and reached a sample of 219 people, who were divided equally for the four previous stimuli. However, not all responses from these 219 respondents were taken into account, indeed 19 people did not complete the questionnaire, leaving it incomplete, and 24 failed the final attention test, stating that they saw a different condition than the one they were presented with.

Therefore 43 responses were not taken into account, and the final sample considered was reduced to 176 (80% of the total responses). (Figure 22)

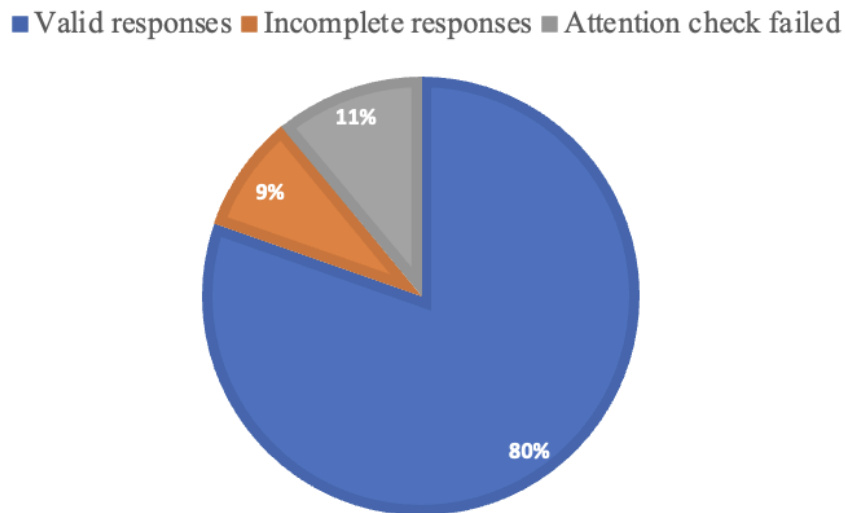


Figure 22: Sample

The survey, like the pre-test, is a survey with a 2x2 structure design. The four conditions were divided equally among the respondents and in the end considering only the 176 valid answers, 45 of these were exposed to condition 1 (26%), 46 to condition 2 (26%), 42 to condition 3 (24%) and finally 43 to the last condition (24%). (Figure 23)

■ C1: Online channel + MarTech ■ C2: Physical channel + MarTech
 ■ C3: Online channel without MarTech ■ C4: Physical channel without MarTech

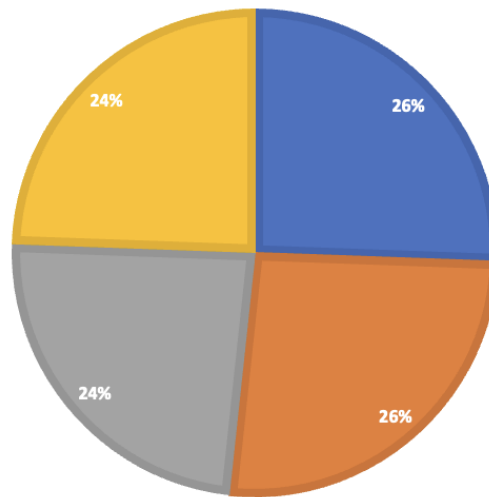


Figure 23: Division of respondents with respect to displayed stimuli

The analysis was conducted on SPSS by performing two independent sample t test and two two-way ANOVA analysis. Before talking about the questionnaire, it is therefore useful to explain what is meant by ANOVA analysis.

ANOVA analysis, also known as analysis of variance, works by checking the differences between the variances because if the variances are different, the averages will also be different. In this case, that there are four averages to compare, an independent sample t-test will not be sufficient, so an ANOVA analysis will be performed to check the moderation effect.

Specifically, the two way ANOVA is used here because there is not only one factor determining the occurrence of the dependent variable (customer satisfaction), but two factors X1 (online channel vs. physical channel) and X2 (presence/absence of MarTech).

Regarding the structure of the questionnaire, after a brief introduction, where it was explained the purpose of the research, the importance of each respondent's contribution, and after guaranteeing the anonymity of all answers, the definition of MarTech was presented so that even respondents unfamiliar with this term could take part in the questionnaire and fill it in correctly: The following definition is the one that was used in this questionnaire:

"Before we begin, it is good to know what is meant by MarTech. MarTech represents the union of marketing and technology, enabling more efficient results in marketing efforts. Among the fields of Martech are data analytics, chatbot implementation, augmented reality and task automation."

Next, respondents will see one of the four conditions that were explained earlier in the chapter 3.2.1.

Everyone will then be asked questions concerning customer satisfaction and purchase intention, the dependent variables of this study, taken from pre-validated 7 point bipolar scales (Oliver and Swan⁹⁶; Chandran and Morwitz⁹⁷) (Figure 24, Figure 25).

Could you indicate how satisfied you were with your previous experience by selecting the space that best represents your answer?

Displeased me	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	Pleased me
Disgusted with	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	Contented with
Very dissatisfied with	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	Very satisfied with
Did a poor job for me	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	Did a good job for me
Poor choice in buying from that	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	Wise choice in buying from that
Unhappy with	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	Happy with
Bad value	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	Good value
Frustrating	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	Enjoyable
Very unfavorable	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	Very favorable

Figure 24: Oliver and Swan scale for measuring customer satisfaction

How likely are you to buy the product?

Highly unlikely Highly likely

How probable is it that you will purchase the product?

Highly improbable Highly probable

How certain is it that you will purchase the product?

Highly uncertain Highly certain

What chance is there that you will buy the product?

No chance at all Very good chance

Figure 25: Chandran and Morwitz scale for measuring purchase intention

⁹⁶ Oliver, Richard L. and John E. Swan (1989a), "Consumer Perceptions of Interpersonal Equity and Satisfaction in Transactions: A Field Survey Approach," JM, 53 (April), 21-35.

⁹⁷ Chandran, Sucharita and Vicki G. Morwitz (2005), "Effects of Participative Pricing on Consumers' Cognitions and Actions: A Goal Theoretic Perspective," JCR, 32 (September), 249-259.

At the end, as in the pre-test, there is the attention control ("What experience have you been subjected to?") and socio-demographic questions such as age and gender.

3.4.1 RESULTS

Thanks to the socio-demographic questions at the end of the questionnaire, it was first possible to carry out a descriptive analysis of the sample in order to gain a better understanding of the respondents.

Regarding the gender of the respondents, there were 68 males, 107 females and 1 'Prefer not to say'. Thus, it is worth mentioning that 60.8% of the respondents were female.

With regard to age, this ranged from 21 to 61 years, with an average age of 25 years.

First of all, before analyzing the results, it is necessary to check whether the scales that were used to collect the data are reliable. Since the two scales that were included in the questionnaire were taken from the existing literature, it is not necessary to do validation, but reliability is sufficient.

To check reliability, the Cronbach Alpha is used, an index that takes a value ranging from 0 to 1 and the higher its value, the more reliable the scale will be. Scales with a Cronbach Alpha of at least 0.6 are accepted.

As far as the first scale is concerned, regarding customer satisfaction, Oliver and Swan's Cronbach alpha is 0.984, an excellent result for the scale, furthermore, if one goes to the SPSS output to see the item "Cronbach alpha if the element is eliminated" it is possible to note that all the values are less than the Cronbach alpha of before, therefore the scale is very good and requires no adjustments.

Similarly, to analyze the reliability of the second scale, used to measure purchase intention, that of Chandran and Morwitz, it can be seen that the index is 0.985, again therefore an excellent scale.

The table below summarizes the results of the two Cronbach alpha. (Table 1)

Scale	Cronbach alpha	Number of items of the scale
Customer satisfaction	0.984	9
Purchase intention	0.985	4

Table 1: Cronbach Alpha

Once the reliability of the scales has been verified, it can be possible to move on to analyze the results as the scales are already validated.

First of all, two independent sample t-test was conducted to test H1, so that the sale of luxury products made with innovative sustainable fibers through digital channels, such as the brand website, has a negative and minor effect on customer satisfaction and thus on the actual purchase by consumers, when compared to physical channels.

Therefore, it is necessary to analyze the independent variables for the two groups who tried the shopping experience without the use of MarTech. To do this, a new variable called "On_OffWithoutMarTech" was created with value 1 if respondents experienced the stimulus related to the online channel without MarTech, and value 0 if they experienced the physical channel without MarTech.

Performing two independent sample t tests, according to the results there is a significant difference between the two averages ($p < 0.001$), the group of respondents exposed to the online channel without MarTech recorded a mean satisfaction of 3.37 and purchase intention of 2.48 out of 7, while the group of respondents who tried the stimulus related to the physical channel without MarTech recorded a customer satisfaction of 5.41 and purchase intention of 5.64.

To analyze the results of the moderation effect (H2), so the presence/absence of MarTech, two two-way ANOVA was conducted, since there are two dependent variables.

In order to make the analysis more efficient, two variables were created "On_Off" related to the sales channel, where if the respondent experienced the experience in the online channel then the value will be 1 otherwise in the physical channel it will be 0, and "Mar_no" where if MarTech is present then it is equal to 1, if not then it will be equal to 0.

The table below (Table 2) summarizes the results for the average customer satisfaction (CS) of consumers.

	Online Channel	Physical Channel
MarTech	CS: 5.31 Standard deviation: 0.65	CS: 6.71 Standard deviation: 0.43
No MarTech	CS: 3.37 Standard deviation: 1	CS: 5.41 Standard deviation: 0.41

Table 2: Customer satisfaction under different conditions

From the results, it can therefore be seen that the highest average customer satisfaction is for the physical channel + MarTech stimulus and the lowest for the online channel without MarTech.

In the same way, the same table can be constructed for the second dependent variable, purchase intention (PI) (Table 3), where it can be seen that here, too, purchase intention has the highest average for those who tried the physical channel with MarTech and the lowest for the online channel without MarTech.

	Online Channel	Physical Channel
MarTech	PI: 5.32 Standard deviation: 0.84	PI: 6.57 Standard deviation: 0.61
No MarTech	PI: 2.48 Standard deviation: 1.11	PI: 5.64 Standard deviation: 0.46

Table 3: Purchase intention under different conditions

The results show that the whole model has influence on customer satisfaction ($F(3,172)=185.45$, $p < 0.001$), the type of channel (online/offline) ($F(1,172)=292.68$, $p < 0.001$) significantly influences the dependent variable and also the presence or absence of MarTech ($F(1,172)=258.12$, $p < 0.001$). Furthermore, there is a significant interaction between the online channel and the presence of MarTech on customer satisfaction ($F(1,172)=10.29$, $p=0.002$).

By applying the same logic to the second dependent variable, it is possible to conclude that the entire model has an impact on purchase intention ($F(3,172)=212.65$, $p < 0.001$), that the type of channel (online/offline) has a significant impact on the dependent variable ($F(1,172)=339.77$, $p < 0.001$), and also if MarTech is present or absent ($F(1,172)=247.51$, $p < 0.001$). Additionally, there is a significant interaction on purchase intention between the online channel and the existence of MarTech ($F(1,172)=63.26$, $p < 0.001$).

3.4 DISCUSSION

The first contribution of this study is that when compared to physical channels, the sale of luxury goods made with innovative sustainable fibers through digital ones, like the brand website, has a negative and marginal impact on customer satisfaction and, consequently, on the actual purchase by consumers (H1). The second contribution, instead, is to suggest MarTech as a strategy to mitigate the negative relationship between the online channel and the act of purchasing (H2).

Starting from the research question, the conceptual model, and from the two hypotheses that have been prefixed above, it is possible to conclude that the sale of luxury products made with innovative and sustainable fibers through the physical sales channels succeeds in guaranteeing greater consumer satisfaction than the online channels, because if the two channel types without the use of MarTech (Condition 3 and Condition 4) are taken as an example, it can be seen that on a scale of 1 to 7, those who tried the physical shop have a satisfaction score of 5.41 and those who tried the website have a satisfaction score of 3.37.

Furthermore, talking about H2, i.e. the use of MarTech to improve this situation expressed above, it can be seen that the implementation of technology is very helpful in improving the customer satisfaction score. Indeed, those who tried the online channel with the chatbot register a satisfaction score of 5.31, slightly below those who tried the physical channel without MarTech, thus registering an improvement over the online channel without MarTech of almost 2 points.

Of course, even in the two physical store situations, the average satisfaction was already high without MarTech, but for those who tried the physical store + MarTech, the average increased to a score of 6.71 out of 7. (Figure 26)

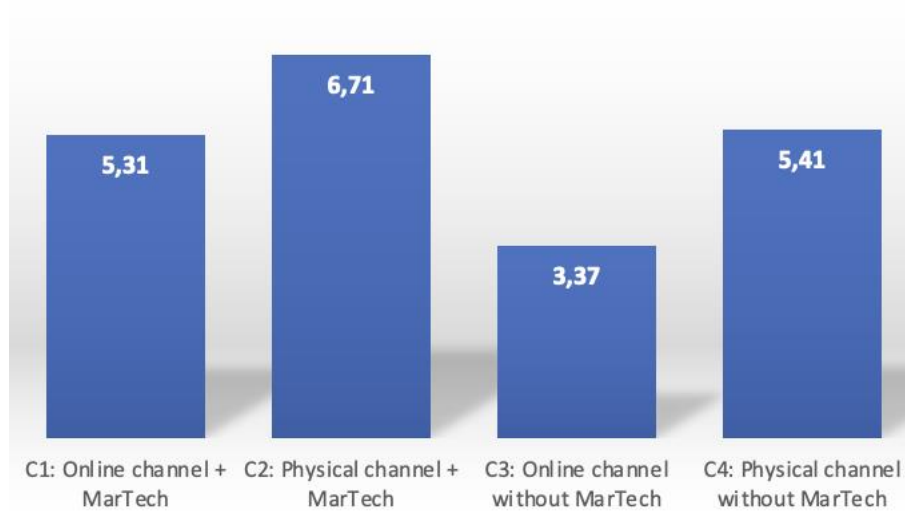


Figure 26: Customer satisfaction

The same conclusions can also be made with the second dependent variable, purchase intention. Indeed, here the difference between the online channel and the offline channel both without MarTech is remarkable (5.64 for the physical channel and 2.48 for the online channel), this goes to underline the fact that the actual purchase of a luxury product, especially if it is a product made with innovative fibers, is very rare in the online channel, the risk is really too great and consumers do not feel like taking it. With the addition of MarTech to the shopping experience the averages rise considerably, in fact the online channel from 2.48 previously rises to 5.32 (+2.84 points). (Figure 27)

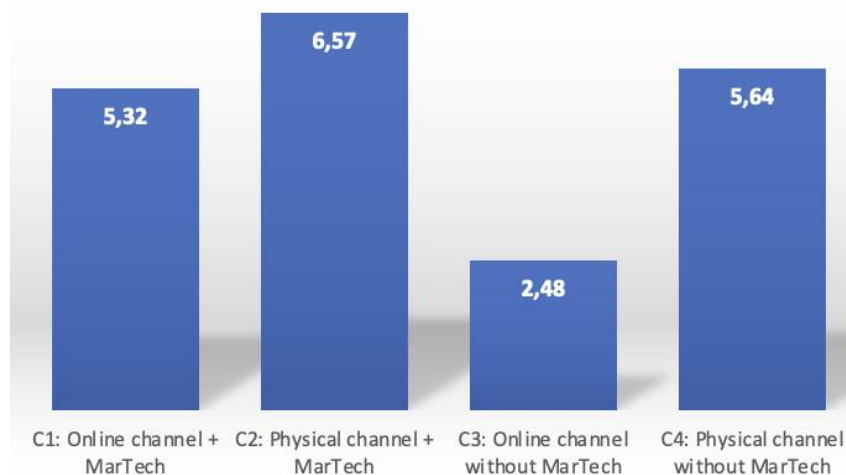


Figure 27: Purchase intention

All this therefore goes to confirm the H1 and H2 hypotheses prefixed earlier.

Thus, taking the research question below:

When does the use of sustainable innovative fibers on luxury products sold through online channels (vs physical) negatively influence customer satisfaction and effective purchase? Does the use of MarTech decrease the negative effect of online channels on customer satisfaction and effective purchase?

It can be argued that the online channel satisfies less than the physical channel and the use of MarTech may be able to bridge this gap.

Indeed, despite the passage of years and the invention of numerous technologies, the two shopping experiences (online vs. offline) cannot be compared. Unfortunately, this is even more true in the luxury industry, where the tried-and-true experience and the magic of the physical store, which makes the buying process a true event, are fundamental and characterizing in this industry. This, of course, is even more verified when it comes to innovative and sustainable products, as perhaps they may be perceived unfortunately as brand sidelines.

This situation can be improved through artificial intelligence, which is capable of filling some of the gaps in the online channel and even enhancing the already great experience in the physical channel.

3.5 IMPLICATIONS OF THE RESEARCH

3.5.1 THEORETICAL IMPLICATIONS

The customer experience has grown in importance as a key component of business, especially at a time when customers have higher expectations thanks to the numerous opportunities provided by technology and are consequently more demanding owing to competition.

As regards the theoretical significance of the results obtained, these go to confirm the importance of the physical experience, of the possibility of trying the products, touching them and seeing them up close, the interaction with qualified people and also confirms the uncertainty linked to the online channel experienced by consumers, where obviously these things fail.

Especially when it comes to luxury items, due to the large expense associated with them, the consumer will not be satisfied with buying via an online click, especially if they are innovative and sustainable product lines, which will have an uncertain performance.

As mentioned earlier, it can be seen that customers often perceive sustainable items as being of poorer quality, making it challenging for the brand to connect sustainability cues to luxury goods, which are instead characterized by a very high and distinctive quality.

Indeed, the consumer is more likely to buy an iconic garment of the brand, whose characteristics, quality and performance are better known, compared to a garment made with innovative fibers, especially linked to organic waste, because the value of these products could be perceived in a negative way, contaminated, dirty. Inside the physical store, a qualified sales assistant can naturally make the consumer discover all the brand's products, even the most particular ones, guiding him/her in this experience and perhaps managing to sell him/her an item that he/she would not have expected before entering the brand store.

The results show that the online customer experience is very likely to be monotonous, and this needs to be fixed because it must be emphasized that luxury customers are also increasingly turning to technology and will expect a similarly luxurious, personalized, and valuable shopping experience online.

3.5.2 PRACTICAL IMPLICATIONS

What emerges from this study is that it is necessary to increase the performance of online sales channels, to raise satisfaction and the conversion rate as much as possible to bring it closer to the physical channel. Therefore, it cannot be expected that the two channels arrive at the same results, but it would be important for luxury brands to try to equate them to the maximum in order to be able to offer a great omnichannel experience that is able to leave consumers enthusiastic, to make it possible for customers to engage with the business consistently and seamlessly across all channels. This can increase customer loyalty and the company's competitiveness in the target market.

But the online channel must not be understood only as a subsequent step to purchase the product after having tried the garment in the physical store, but rather it must perhaps be able to arouse consumer interest so much that for example it makes the person go to the physical store just to try on that product.

Indeed, it is possible to create an engaging and personalized experience for the online customer, which not only improves the user experience but also increases the probability that the customer will perform the desired action on the website, therefore the actual purchase, raising the conversion rate. A great attractive website design, (already present for luxury brands), is no longer sufficient because even if the satisfaction is not too low, the relative purchase intention will be even lower, because it is a real action that also involves a large outlay of money.

In addition, the use of technology can be very useful, the luxury brand website must also be able to tell a story, through chatbots, storytelling, capable of creating an interactive and non-passive experience.

The customer speaking with a chatbot that is as close as possible to a real person who is able to ask questions, ask you for opinions and best inform you about the brand's offers can make feel the customer a little more part of the experience he/she would have had in physical store.

Trying on clothes with augmented reality could be effective as it would increase customer engagement, making them have fun at home by trying on the luxury brand's garments.

In addition, companies need to integrate customer data from all channels and make effective use of the enormous amount of data to improve and personalize user experiences.

3.6 LIMITATIONS AND FUTURE RESEARCH

As far as limitations and thus recommendations for future research are concerned, certain shortcomings of the sample must certainly be mentioned.

Indeed, it would certainly be possible to explore the topic further with a larger number of respondents, with also a greater balance between males and females, since in the present study 61% of the respondents were female.

It would also be interesting to study the phenomenon from an international perspective by comparing different countries, because this study only has Italian respondents, indeed for this reason results cannot be generalized, due to the participants' restricted demographic makeup.

The average age could also be a new cue for future research, as in this study the average was 25 years old, but usually luxury buyers have a higher average, so expanding the questionnaire to older people could certainly be useful, to actually understand how their perception of the online channel would change, and whether they would shop through it.

In order to reflect a more genuine situation rather than a hypothetical one, future study might concentrate only on luxury purchasers and exclude people who are not accustomed to purchasing luxury goods. Targeting the sample may therefore aid in obtaining more accurate results.

Lastly, future research might benefit from exploring MarTech in a greater way, giving the chatbot or physical channel even more ways to have a unique experience through technology. Indeed, MarTech has so many fields of application as seen in Chapter 2, so experiment with more types of MarTech as realistically as possible, perhaps by actually running a real smart fitting room where respondents can actually try on products.

CONCLUSION

The topics of sustainability and MarTech (marketing technology) are much discussed and active topics in the existing literature, while the combination of the two can be considered a research gap. Indeed, the following research explored the topic of MarTech to improve the consumer experience of luxury brands and also how a MarTech approach can help harness the theme of sustainability, satisfying the growing consumer concern for more ethical and responsible products. In particular, luxury products made with innovative sustainable fibers were discussed here to assess this.

Indeed, these products may be very successful, but their importance in online channels is often not perceived, so the research question answered in this thesis is as follows: When does the use of innovative sustainable fibers on luxury products sold through online channels (as opposed to physical channels) negatively affect customer satisfaction and purchase effectiveness? Does the use of MarTech diminish the negative effect of online channels on customer satisfaction and actual purchase?

A quantitative experimental research was conducted to answer these questions. The study, launched to just over 200 people, proposed four different scenarios, both the physical channel and the online channel of an invented luxury brand named "*Suhra*" with MarTech present or absent. In the online channel without MarTech, the classic website with innovative product proposals was presented, and in the online channel with MarTech the same website but with a chatbot that respondents could find and try. While for the physical channel, two other scenarios were proposed, either of a classic luxury store where the customer is warmly welcomed by professional sales assistants or a physical store that with technology manages to entertain and increase customer engagement even more.

The following study showed that sales of luxury products made with innovative sustainable fibers through digital channels, such as the brand website, has a negative effect on customer satisfaction and purchase intention, and a smaller effect when compared to physical channels. After demonstrating this, it was seen that the use of MarTech was able to mitigate this negative relationship between the online channel and the actual purchase analyzed above. Indeed, customer satisfaction and purchase intention averages were lower for the online channel without MarTech, followed by the online channel with MarTech and the physical channel without MarTech, while the physical channel with MarTech had the highest results, demonstrating that the use of technology can increase the level of customer satisfaction (especially in the online channel where the experience can be passive and monotonous).

Artificial intelligence is revolutionizing the relationship between brands and consumers and the increasing level of technology is becoming more and more capable of delivering a unique and personalized experience to consumers. This can both improve the not-so-positive relationship between luxury brands' online sales channel and customer satisfaction and purchase intent, but also take customer satisfaction to an even higher level when they are in the physical store.

BIBLIOGRAPHY

Achabou, M. and Dekhili, S. (2013) “Luxury and Sustainable Development: Is there a match?,” *Journal of Business Research*, 66(10), pp. 1896–1903. Available at: <https://doi.org/10.1016/j.jbusres.2013.02.011>

Adamopoulou, E. and Moussiades, L. (2020) “An overview of chatbot technology,” *IFIP Advances in Information and Communication Technology*, pp. 373–383. Available at: https://doi.org/10.1007/978-3-030-49186-4_31.

Adams, R., Jeanrenaud, S., Bessant, J., Denyer, D. and Overy, P. (2018). “Sustainability-oriented innovation: a systematic review”. *International Journal of Management Reviews*, 18, pp. 180–205.

Aleem, A., Loureiro, S. M. C., Bilro, R. G. (2022) “Luxury fashion consumption: a review, synthesis and research agenda”. *Spanish Journal of Marketing*. Available at: <https://www.emerald.com/insight/content/doi/10.1108/SJME-06-2021-0105/full/html>

Ameen, N. et al. (2021) “Customer experiences in the age of Artificial Intelligence,” *Computers in Human Behavior*, 114, p. 106548. Available at: <https://doi.org/10.1016/j.chb.2020.106548>.

Athwal, N. et al. (2019) “Sustainable Luxury Marketing: A synthesis and research agenda,” *International Journal of Management Reviews*, 21(4), pp. 405–426. Available at: <https://doi.org/10.1111/ijmr.12195>.

Bawden, D. and Robinson, L. (2020) “Information overload: An introduction,” *Oxford Research Encyclopedia of Politics* [Preprint]. Available at: <https://doi.org/10.1093/acrefore/9780190228637.013.1360>.

Bendle, N., Pfeifer, P., Reibstein, D., Farris, P. (2017) “Key Marketing Metrics: The 50+ metrics every manager needs to know” (2nd Edition). Pearson Education

Bleier, A., Harmeling, C.M. and Palmatier, R.W. (2018) “Creating effective online customer experiences,” *Journal of Marketing*, 83(2), pp. 98–119. Available at: <https://doi.org/10.1177/0022242918809930>

Chandel, S. et al. (2018) “Chatbot: Efficient and utility-based platform”. *Advances in Intelligent Systems and Computing*, pp. 109–122. Available at: https://link.springer.com/chapter/10.1007/978-3-030-01174-1_9

Chandran, Sucharita and Vicki G. Morwitz (2005), “Effects of Participative Pricing on Consumers’ Cognitions and Actions: A Goal Theoretic Perspective,” *JCR*, 32 (September), 249-259.

- Davies, I.A., Lee, Z. and Ahonkai, I. (2012). "Do consumer care about ethical luxury?" *Journal of Business Ethics*, 106, pp. 37–51. Available at: <https://link.springer.com/article/10.1007/s10551-011-1071-y>
- Dekhili, S., Achabou, M.A. and Alharbi, F. (2019) "Could sustainability improve the promotion of luxury products?," *European Business Review*, 31(4), pp. 488–511. Available at: <https://doi.org/10.1108/ebr-04-2018-0083>.
- Dessart, L. and Standaert, W. (2023) "Strategic storytelling in the age of Sustainability," *Business Horizons* [Preprint]. Available at: <https://doi.org/10.1016/j.bushor.2023.01.005>.
- Dhaliwal, A., Singh, D.P. and Paul, J. (2020) "The consumer behavior of Luxury Goods: A Review and Research Agenda," *Journal of Strategic Marketing*, pp. 1–27. Available at: <https://doi.org/10.1080/0965254x.2020.1758198>.
- Gifford, R. (2011). "The Dragons of Inaction: Psychological Barriers That Limit Climate Change Mitigation and Adaptation", *American Psychologist* Available at: https://www.researchgate.net/publication/254734365_The_Dragons_of_Inaction_Psychological_Barriers_That_Limit_Climate_Change_Mitigation_and_Adaptation
- Girod, S. (2021). "Luxury Is Learning To Deal With The Contradictions Of Sustainability". *Forbes*. Available at: <https://www.forbes.com/sites/stephanegirod/2021/07/01/luxury-is-learning-to-deal-with-the-contradictions-of-sustainability/?sh=62791bc52667>
- Goodwin, S. et al. (2006) "CMS/CMS: Content Management System/Change Management Strategies," *Library Hi Tech*, 24(1), pp. 54–60. Available at: <https://doi.org/10.1108/07378830610652103>.
- Hoyer, W.D. et al. (2020) "Transforming the customer experience through New Technologies," *Journal of Interactive Marketing*, 51, pp. 57–71. Available at: <https://doi.org/10.1016/j.intmar.2020.04.001>
- Jayaswal, P. and Parida, B. (2023) "The role of augmented reality in redefining e-tailing: A review and research agenda," *Journal of Business Research*, 160, p. 113765. Available at: <https://doi.org/10.1016/j.jbusres.2023.113765>.

Jenneboer, L., Herrando, C. and Constantinides, E. (2022) “The impact of Chatbots on Customer Loyalty: A systematic literature review,” *Journal of Theoretical and Applied Electronic Commerce Research*, 17(1), pp. 212–229. Available at: <https://doi.org/10.3390/jtaer17010011>.

Keller, E. et al. (2022) “A systematic review of the psychological distance of climate change: Towards the development of an evidence-based construct,” *Journal of Environmental Psychology*, 81, p. 101822. Available at: <https://doi.org/10.1016/j.jenvp.2022.101822>.

Kiron, M.I. and Mazharul Islam Kiron. *Textile Learner* (2023) “Sustainable Fibers Features, Properties, Application, Advantages and Market”. Available at: <https://textilelearner.net/sustainable-fibers-an-overview/>

Lacroix, K., Gifford, R. and Chen, A. (2019) “Developing and validating the dragons of inaction psychological barriers (DIPB) scale,” *Journal of Environmental Psychology*, 63, pp. 9–18. Available at: <https://doi.org/10.1016/j.jenvp.2019.03.001>.

Liu-Thompkins, Y., Okazaki, S. and Li, H. (2022) “Artificial empathy in marketing interactions: Bridging the human-ai gap in affective and Social Customer experience,” *Journal of the Academy of Marketing Science*, 50(6), pp. 1198–1218. Available at: <https://doi.org/10.1007/s11747-022-00892-5>

Mittal, V. et al. (2023) “Customer satisfaction, loyalty behaviors, and firm financial performance: What 40 Years of Research tells us,” *Marketing Letters*. Available at: <https://doi.org/10.1007/s11002-023-09671-w>.

Oliver, Richard L. and John E. Swan (1989a), “Consumer Perceptions of Interpersonal Equity and Satisfaction in Transactions: A Field Survey Approach,” *JM*, 53 (April), 21-35.

Osburg, VS., Davies, I., Yoganathan, V. et al. (2021) “Perspectives, Opportunities and Tensions in Ethical and Sustainable Luxury: Introduction to the Thematic Symposium”. *J Bus Ethics* 169, 201–210. Available at: <https://doi.org/10.1007/s10551-020-04487-4>

Parimi, S. (2021). “Marketing & Technology – an emerging field of excellence”. *Academy of Marketing Studies Journal. Suppl. Special Issue 2*, 25, 1-2. Available at <https://www.proquest.com/scholarly-journals/marketing-technology-emerging-field-excellence/docview/2524418271/se-2>

Park, H.J. and Lin, L.M. (2020) “Exploring attitude–behavior gap in sustainable consumption: Comparison of recycled and upcycled fashion products,” *Journal of Business Research*, 117, pp. 623–628. Available at: <https://doi.org/10.1016/j.jbusres.2018.08.025>

Ranfagni, S. and Ozuem, W. (2022) “Luxury and sustainability: Technological pathways and potential opportunities,” *Sustainability*, 14(9), p. 5209. Available at: <https://doi.org/10.3390/su14095209>.

Robbins, T.W. and Costa, R.M. (2017) “Habits,” *Current Biology*, 27(22). Available at: <https://doi.org/10.1016/j.cub.2017.09.060>.

Romano, B., Sands, S., Pallant, J. I. (2021). "Augmented reality and the customer journey: An exploratory study". *Australasian Marketing Journal.*, 29 (4), pp. 354-363 Available at: <https://journals.sagepub.com/doi/10.1016/j.ausmj.2020.06.010>

Roper, S., Caruana, R., Medway, D. and Murphy, P. (2013). “Constructing luxury brands: exploring the role of consumer discourse”. *European Journal of Marketing*, 47, pp. 375–400. Available at: <https://www.emerald.com/insight/content/doi/10.1108/03090561311297382/full/html>

SanMiguel, P. et al. (2021) “How to communicate sustainability: From the corporate web to e-commerce. the case of the Fashion Industry,” *Sustainability*, 13(20), p. 11363. Available at: <https://doi.org/10.3390/su132011363>.

Tiwari, S. and Tomar, P. (2023) “Is Artificial Intelligence (AI) the future of sustainable or green fashion?: A Review,” *Recent Progress in Science and Technology Vol. 2*, pp. 1–8. Available at: <https://doi.org/10.9734/bpi/rpst/v2/5032a>.

Todor, R. D. (2016). "Marketing automation". *Bulletin of the Transilvania University of Braşov Series V: Economic Sciences. Vol. 9 (58) No. 2 - 2016*. Available at: http://webbut2.unitbv.ro/Bulletin/Series%20V/BULETIN%20I/10_Todor.pdf

Utami, B., Hidayat, M. S., Setyariningsh. (2023). “The relationship between customer satisfaction and loyalty”. Available at: <https://ijssr.ridwaninstitute.co.id/index.php/ijssr/article/download/222/365/2031>

Widloecher, P. (2010). *!Luxe Et Développement Durable: Je T’aime, Moi Non Plus?*. Luxefrancais.

Zimmerling, A. and Chen, X. (2021) “Innovation and possible long-term impact driven by COVID-19: Manufacturing, personal protective equipment and digital technologies,” *Technology in Society*, 65, p. 101541. Available at: <https://doi.org/10.1016/j.techsoc.2021.101541>.

SITOGRAPHY

Altiant. (2022). Consumer opinions on the luxury brands' adoption of sustainable luxury policies in Europe from 4th quarter 2021 to 4th quarter 2022 [Graph]. In Statista. Available at: <https://www.statista.com/statistics/1290833/consumers-view-on-sustainable-luxury-europe/?locale=en>

Altiant. (2023). “Shopping channel preference for luxury brand and service purchases in Europe from 1st quarter to 4th quarter 2022”. In Statista. Available at: <https://www.statista.com/statistics/1235046/luxury-shopping-channels-europe/>

Bergamaschi, E. (2022). “La Nuova Normalità del Lusso: Perché i negozi fisici Sono Ancora Essenziali”. CEGID. Available at: <https://www.cegid.com/it/blog/negozi-fisici-sono-essenziali-brand-del-lusso/>

Camurati, di F. (2022) “Il lusso è pioniere nell'adozione di nuove tecnologie”. Milanofinanza news, MF Milano Finanza. Milano Finanza. Available at: https://www.milanofinanza.it/news/il-lusso-e-pioniere-nell-adozione-di-nuove-tecnologie-202209142028058419?refresh_cens

Cotton. (2022). WWF. World Wildlife Fund. Available at: <https://www.worldwildlife.org/industries/cotton>

Deloitte. (2022). “Cresce la digitalizzazione del settore Fashion & Luxury, ma i negozi fisici si confermano strategici per i clienti”. Available at: <https://www2.deloitte.com/it/it/pages/technology/articles/cresce-la-digitalizzazione-del-settore-fashion-luxury.html>

Deloitte Digital & Snap Inc. (2021). Snap consumer AR: Global report 2021. Available at: https://downloads.ctfassets.net/inb32lme5009/hSj5P9vzaox79vITqXZfj/d6094404212f1327e8b7d69535337941/Snap_Consumer_AR_Research_GlobalReport.pdf/

Digital Sales, Lean Evolution (2022) “Report state of martech 2022: Dati, innovazione e infinite opportunità. Digital Sales: I nuovi processi di Vendita - CRM - Sales intelligence.” Digital Sales srl. Available at: <https://www.digital-sales.it/blog/report-state-of-martech-2022-dati-innovazione-e-infinite-opportunita>

D'Arpizio, C. et al. (2021) “Luxco 2030: A Vision of Sustainable Luxury”, Bain & Company. Available at: <https://www.bain.com/insights/luxco-2030-a-vision-of-sustainable-luxury/>

Ferragamo Orange Fiber. (2017) Ferragamo Group. Available at <https://group.ferragamo.com/it/news/2017/orange+fiber/orange+fiber>

Harvard Business School. The economics of E-loyalty. HBS Working Knowledge. Available at: <https://hbswk.hbs.edu/archive/the-economics-of-e-loyalty>

“Hugo Boss: Scarpe Vegane in Pelle d'ananas: Innovazione (2018) HUGO BOSS | Scarpe Vegane in pelle d'ananas” | Innovazione. Available at: <https://www.hugoboss.com/it/uomo-scarpe-vegane/>

H&M. “Conscious exclusive 2019” (2019) Available at: <https://about.hm.com/news/general-news-2019/conscious-exclusive-2019.html>

Ipsos. (2020). “Do you agree that luxury brands are more respectful of the environment than other brands in the apparel, fashion, accessories industry?” [Graph]. In Statista. Retrieved from <https://www.statista.com/statistics/1120732/opinions-on-sustainability-of-luxury-brands-in-italy/?locale=en>

Larcher, di A. (2022). “Il settore e-commerce del lusso: Dati, trend E 7 idee per incrementare Le conversioni”. SaleCycle. Available at: https://www.salecycle.com/it/blog/strategia/settore-e-commerce-del-lusso/#Statistiche_e%20trend_di_consumo_nel_settore_e-commerce_del_lusso_e_della%20moda

Miliardo Yida. (2021). “Piñatex, Il Tessuto vegetale Che Nasce Dagli Scarti dell'ananas”. Available at: <https://www.miliardoyida.com/pinatex-il-tessuto-vegetale-che-nasce-dagli-scarti-dell-ananas/>

Omdia. (2020). “Revenues from the artificial intelligence (AI) software market worldwide from 2018 to 2025 (in billion U.S. dollars)” [Graph]. In Statista. Available at <https://www.statista.com/statistics/607716/worldwide-artificial-intelligence-market-revenues/>

Orange Fiber (2022) Orange Fiber. Available at: <https://orangefiber.it/it/who-we-are/>

Paulsmith.com. Available at: <https://www.paulsmith.com/uk/info/materials>

PWC (2023). Available at: <https://www.pwc.com/it/it/industries/retail-consumer/assets/docs/pwc-ReFiber-sostenibile.pdf>

Research and Markets. (2022). “Size of the chatbot market worldwide from 2021 to 2030 (in million U.S. dollars)”. In Statista. Available at: <https://www.statista.com/statistics/656596/worldwide-chatbot-market/>

Salesforce Italia. “Customer relationship management”. Available at: <https://www.salesforce.com/it/learning-centre/crm/what-is-crm/>

Symbola (2021) “Frumat”. Available at: <https://www.symbola.net/approfondimento/frumat/>

Statista. (2022). Luxury apparel market value worldwide from 2020 to 2031 (in billion U.S. dollars) [Graph]. In Statista. Retrieved from <https://www.statista.com/statistics/941156/luxury-apparels-market-value-worldwide/>

Statista. (2022). Retail e-commerce sales worldwide from 2014 to 2026 (in billion U.S. dollars) [Graph]. In Statista. Retrieved from <https://www.statista.com/statistics/379046/worldwide-retail-e-commerce-sales/>

Statista. (2022). “Luxury Goods - In-depth Market Insights & Data Analysis”. Available at: <https://www.statista.com/study/61582/in-depth-report-luxury-goods/>

Statista. (2023). Most common offline purchases by type in Italy in 2022 [Graph]. In Statista. Retrieved from <https://www.statista.com/forecasts/1000849/most-common-offline-purchases-by-type-in-italy?locale=en>

TelnetData (2021). "Negozio fisico e online: Quando L'Unione fa la forza!" Telnet Data. Available at: <https://www.telnetdata.it/e-commerce/la-coesistenza-di-negozi-online-e-fisici/>

Textile Exchange. (2022). “Distribution of textile fibers production worldwide in 2021, by type” [Graph]. In Statista. Retrieved from <https://www.statista.com/statistics/1250812/global-fiber-production-share-type/>

The Fashion Pact. Available at: <https://www.thefashionpact.org/?lang=en>

Toffoletto, S. (2022) “Chatbot platform: Definizione E I Vantaggi, CM.com”. Available at: <https://www.cm.com/it-it/blog/13-vantaggi-offerti-dai-chatbot-di-conversazione/>

Village, C. (2020) “Advantages and Disadvantages of Online Shopping Perceived by Consumers”, Digital Marketing Blog - Communication Village. Available at: <https://www.communicationvillage.com/blogs/2017/10/20/vantaggi-e-svantaggi-acquisto-online/#:~:text=One%20of%20the%20main%20advantages%20for%20time%20to%20dedicate%20to%20shopping.>

Zalando Corporate Website. (2021) Attitude-behavior gap report. Available at:
<https://corporate.zalando.com/en/our-impact/sustainability/sustainability-reports/attitude-behavior-gap-report#consumer-attitudes-seven-key-themes>

APPENDIX 1 – THE SURVEY – PRE-TEST

Start of Block: INTRODUCTION

Hi, I am a marketing student at Luiss University and I am conducting a study for my master's thesis. I realize how valuable your time is, which is why I have made this survey take only 3 minutes. Your answers will remain completely anonymous. Thank you for investing your time in my research, your help is really valuable!

Start of Block: SCENARIO TEXT

In a moment, I will show you a stimulus. Afterwards, you will be asked to answer some questions related to what you have seen.

Start of Block: DEFINITION

Before we begin, it is good to know what is meant by MarTech. MarTech represents the union of marketing and technology, enabling more efficient results in marketing efforts. Among the fields of MarTech are data analysis, chatbot implementation, augmented reality and task automation.

Start of Block: SCENARIO

Start of Block: ATTENTION

What experience have you been subjected to?

- Online Channel + MarTech (1)
- Physical Channel + MarTech (2)
- Online Channel without MarTech (3)
- Physical Channel without MarTech (4)

Start of Block: MANIPULATION

To what extent do you think this stimulus represents:

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	
Physical Channel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Online Channel

How much do you agree or disagree that MarTech is present in the visualized stimulus?:

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	
Strongly disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly agree

Start of Block: DEMOGRAPHIC

The study is almost over, you will now be asked to answer a few final questions about yourself.

What is your age? _____

What is your gender?

- Male (1)
- Female (2)
- Prefer not to say (3)

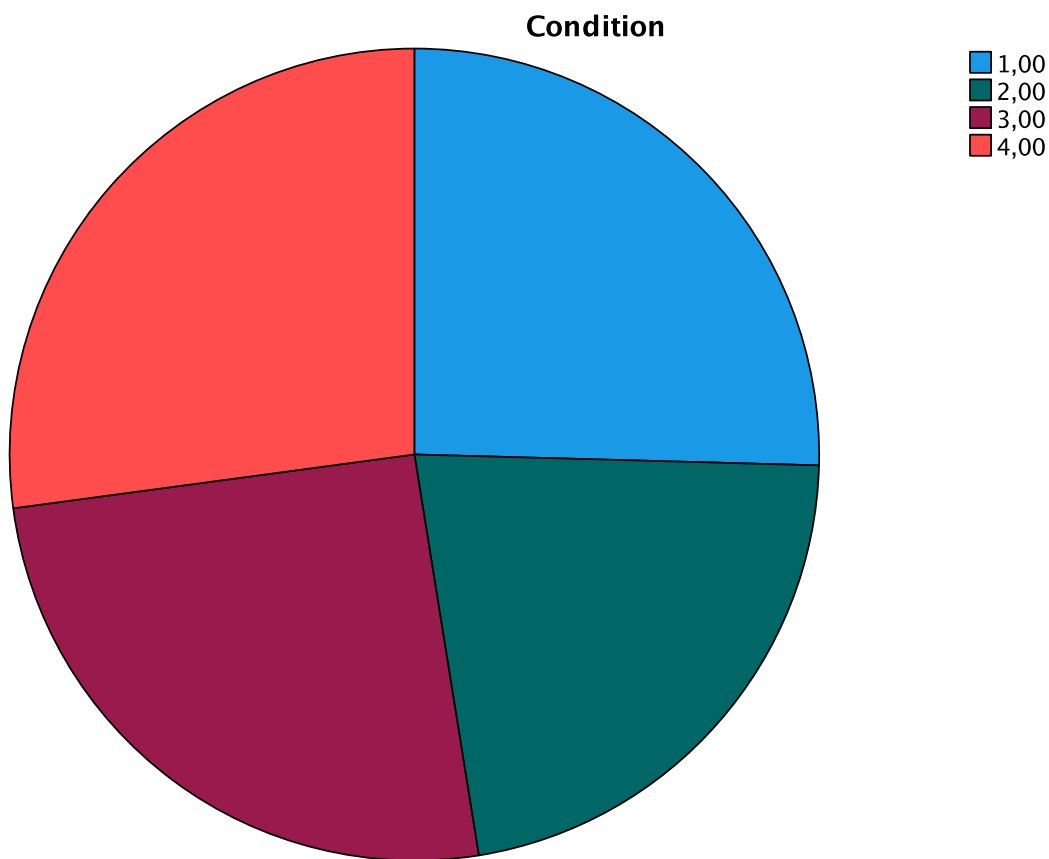
Statistiche

Condition

N	Valido	59
	Mancante	0

Condition

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1,00	15	25,4	25,4	25,4
	2,00	13	22,0	22,0	47,5
	3,00	15	25,4	25,4	72,9
	4,00	16	27,1	27,1	100,0
	Totale	59	100,0	100,0	



Statistiche descrittive

	N	Minimo	Massimo	Media	Deviazione std.
Qual è la tua età?	59	21	60	24,71	6,928
Numero di casi validi (listwise)	59				

Statistiche

Qual è la tua età?

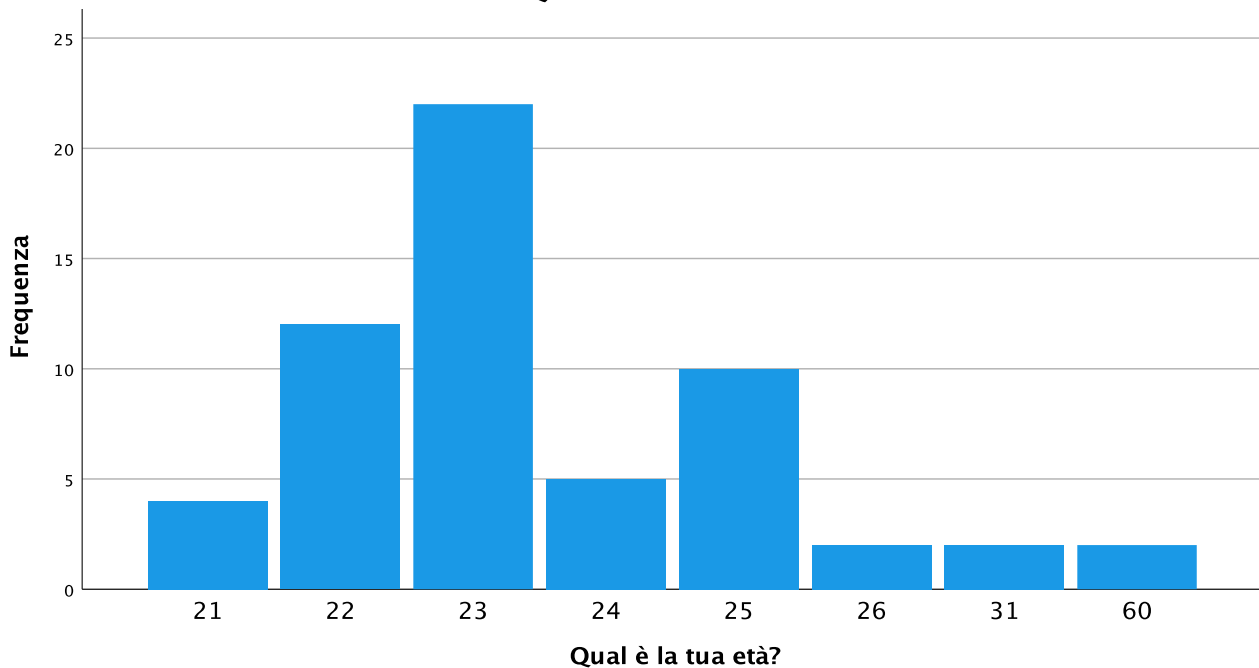
N	Valido	59
---	--------	----

Mancante 0

Qual è la tua età?

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	21	4	6,8	6,8	6,8
	22	12	20,3	20,3	27,1
	23	22	37,3	37,3	64,4
	24	5	8,5	8,5	72,9
	25	10	16,9	16,9	89,8
	26	2	3,4	3,4	93,2
	31	2	3,4	3,4	96,6
	60	2	3,4	3,4	100,0
	Totale	59	100,0	100,0	

Qual è la tua età?



Statistiche

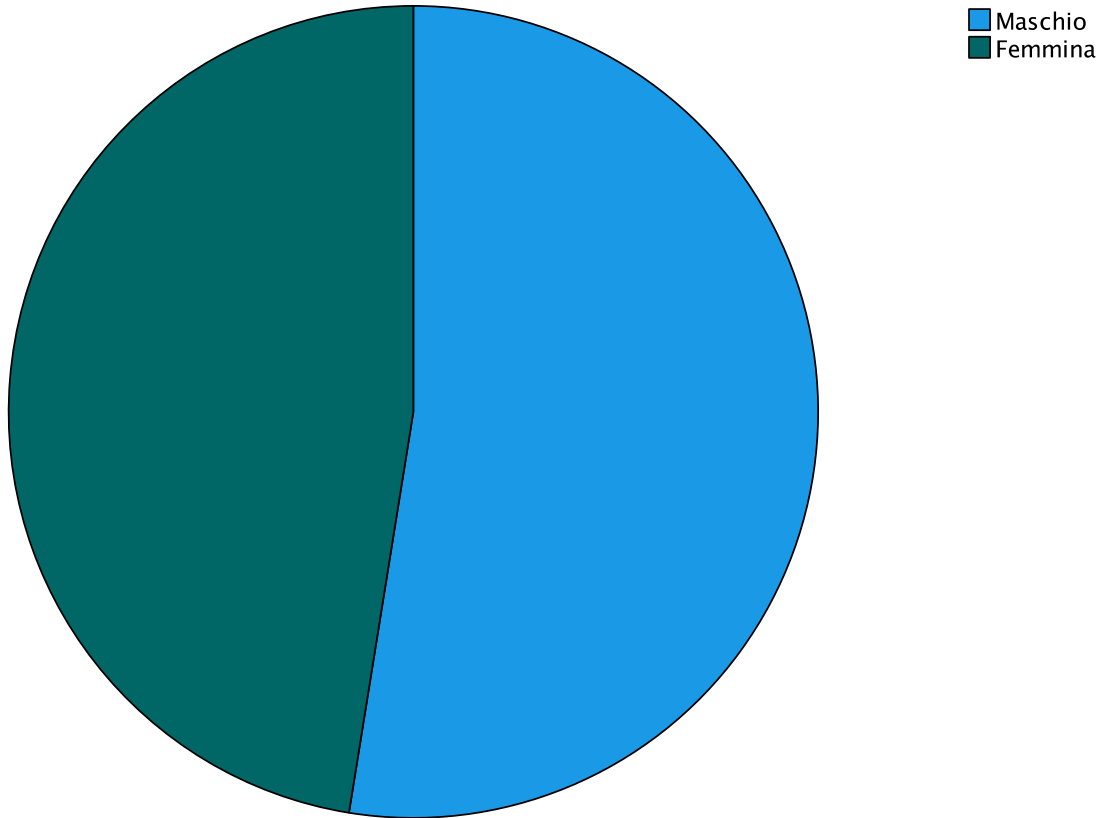
Qual è il tuo genere?

N	Valido	59
	Mancante	0

Qual è il tuo genere?

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	Maschio	31	52,5	52,5	52,5
	Femmina	28	47,5	47,5	100,0
	Totale	59	100,0	100,0	

Qual è il tuo genere?



INDEPENDENT SAMPLE T TEST – CHANNEL

Statistiche gruppo

	channel	N	Media	Deviazione std.	Errore standard della media
In che misura ritieni che questo stimolo rappresenti - Canale Fisico:Canale Online	,00	29	1,24	,988	,183
	1,00	30	7,00	,000	,000

Test campioni indipendenti

		Test di Levene per l'eguaglianza delle varianze		Test t per l'eguaglianza delle medie							
		F	Sign.	t	gl	Significatività		Differenza della media	Differenza errore std.	Intervallo di confidenza della differenza di 95%	
						P unilaterale	P bilaterale			Inferiore	Superiore
In che misura ritieni che questo stimolo rappresenti - Canale Fisico:Canale Online	Varianze uguali presunte	7,915	,007	-31,947	57	<,001	<,001	-5,759	,180	-6,120	-5,398
	Varianze uguali non presunte			-31,400	28,000	<,001	<,001	-5,759	,183	-6,134	-5,383

Dimensioni effetto campioni indipendenti

Standardizza tore ^a	Stima del punto	Intervallo di confidenza 95%
-----------------------------------	--------------------	---------------------------------

				Inferiore	Superiore
In che misura ritieni che questo stimolo rappresenti - Canale Fisico:Canale Online	D di Cohen	,692	-8,319	-9,921	-6,708
	Correzione di Hedges	,701	-8,209	-9,789	-6,619
	Delta di Glass

a. Il denominatore utilizzato per stimare le dimensioni dell'effetto.

D di Cohen utilizza la deviazione standard raggruppata.

La correzione Hedges utilizza la deviazione standard raggruppata, più un fattore di correzione.

Il delta di Glass utilizza la deviazione standard del campione del gruppo di controllo.

INDEPENDENT SAMPLE T TEST – MARTECH

Statistiche gruppo

	martech	N	Media	Deviazione std.	Errore standard della media
Quanto sei d'accordo o meno sul fatto che il MarTech sia presente nello stimolo visualizzato? - Fortemente in disaccordo:Fortement e d'accordo	,00	31	1,10	,396	,071
	1,00	28	6,71	,937	,177

Test campioni indipendenti

		Test di Levene per l'eguaglianza delle varianze		Test t per l'eguaglianza delle medie							
		F	Sign.	t	gl	Significatività		Differenza della media	Differenza errore std.	Intervallo di confidenza della differenza di 95%	
						P unilaterale	P bilaterale			Inferiore	Superiore
Quanto sei d'accordo o meno sul fatto che il MarTech sia presente nello stimolo visualizzato? - Fortemente in disaccordo:Fortement e d'accordo	Varianze uguali presunte	4,515	,038	-30,512	57	<,001	<,001	-5,618	,184	-5,986	-5,249
	Varianze uguali non presunte			-29,431	35,587	<,001	<,001	-5,618	,191	-6,005	-5,230

Dimensioni effetto campioni indipendenti

		Standardizza tore ^a	Stima del punto	Intervallo di confidenza 95%	
				Inferiore	Superiore
Quanto sei d'accordo o meno sul fatto che il MarTech sia presente	D di Cohen	,706	-7,955	-9,493	-6,407
	Correzione di Hedges	,716	-7,850	-9,368	-6,322

nello stimolo visualizzato? - Fortemente in disaccordo:Fortemente d'accordo	Delta di Glass	,937	-5,994	-7,657	-4,318
---	----------------	------	--------	--------	--------

a. Il denominatore utilizzato per stimare le dimensioni dell'effetto.

D di Cohen utilizza la deviazione standard raggruppata.

La correzione Hedges utilizza la deviazione standard raggruppata, più un fattore di correzione.

Il delta di Glass utilizza la deviazione standard del campione del gruppo di controllo.

APPENDIX 3 – THE SURVEY – MAIN STUDY

Start of Block: INTRODUCTION

Hi, I am a marketing student at Luiss University and I am conducting a study for my master's thesis. I realize how valuable your time is, which is why I have made this survey take only 5 minutes. Your answers will remain completely anonymous. Thank you for investing your time in my research, your help is really valuable!

Start of Block: SCENARIO TEXT

In a moment, I will show you a stimulus. Next, you will be asked to answer some questions related to what you have seen.

Start of Block: DEFINITION

Before we begin, it is good to know what is meant by MarTech. MarTech represents the union of marketing and technology, enabling more efficient results in marketing efforts. Among the fields of MarTech are data analysis, chatbot implementation, augmented reality and task automation.

Start of Block: SCENARIO

Start of Block: CUSTOMER SATISFACTION

Could you indicate how satisfied you were with your previous experience by selecting the space that best represents your answer?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	
Displeased me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Pleased me
Disgusted with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Contented with
Very dissatisfied with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very satisfied with
Did a poor job for me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Did a good job for me
Poor choice in buying from that	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Wise choice in buying from that
Unhappy with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Happy with

Bad value	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Good value
Frustrating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Enjoyable
Very unfavorable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very favorable

Start of Block: PURCHASE INTENTION

How likely are you to buy the product?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	
Highly unlikely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Highly likely

How probable is it that you will purchase the product?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	
Highly improbable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Highly probable

How certain is it that you will purchase the product?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	
Highly uncertain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Highly certain

What chance is there that you will buy the product?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	
No chance at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very good chance

Start of Block: ATTENTION

What experience have you been subjected to?

- Online Channel + MarTech (1)
- Physical Channel + MarTech (2)
- Online Channel without MarTech (3)

Physical Channel without MarTech (4)

Start of Block: DEMOGRAPHIC

The study is almost over, you will now be asked to answer a few final questions about yourself.

What is your age? _____

What is your gender?

Male (1)

Female (2)

Prefer not to say (3)

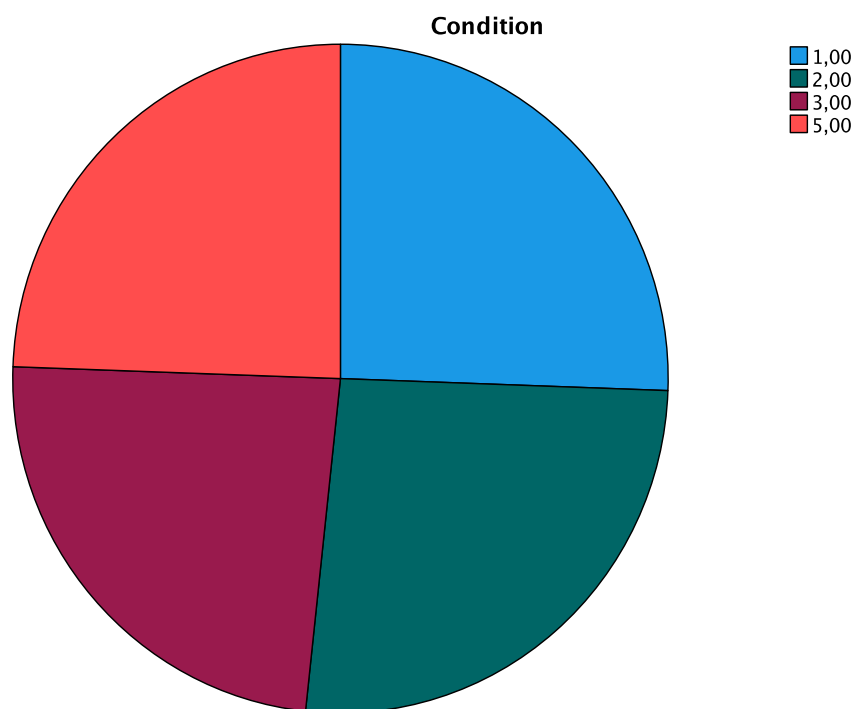
Statistics

Condition

N	Valido	176
	Mancante	0

Condition

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1,00	45	25,6	25,6	25,6
	2,00	46	26,1	26,1	51,7
	3,00	42	23,9	23,9	75,6
	5,00	43	24,4	24,4	100,0
	Totale	176	100,0	100,0	



FREQUENCY - GENDER

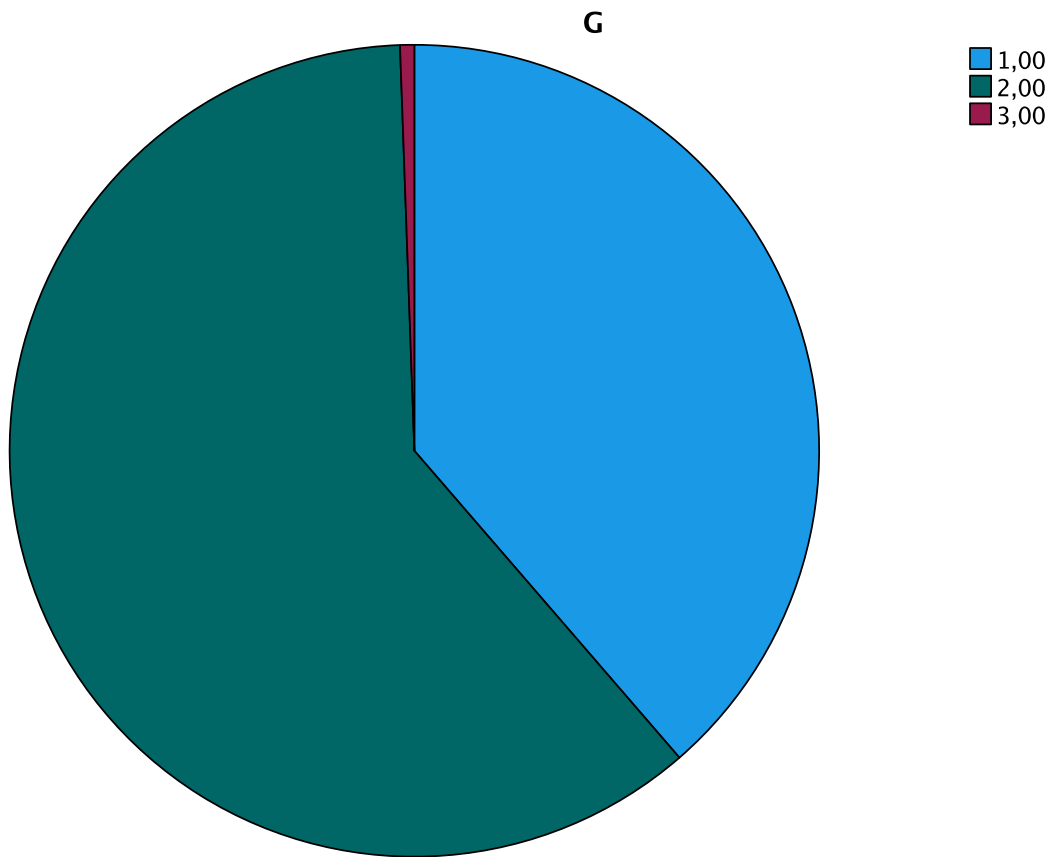
Statistics

N	Valido	176
	Mancante	0

G

		Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido	1,00	68	38,6	38,6	38,6
	2,00	107	60,8	60,8	99,4
	3,00	1	,6	,6	100,0

Totale	176	100,0	100,0
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Statistiche descrittive

	N	Minimo	Massimo	Media	Deviazione std.
Qual è la tua età?	176	21	61	25,03	5,960
Numero di casi validi (listwise)	176				

Statistiche

Qual è la tua età?

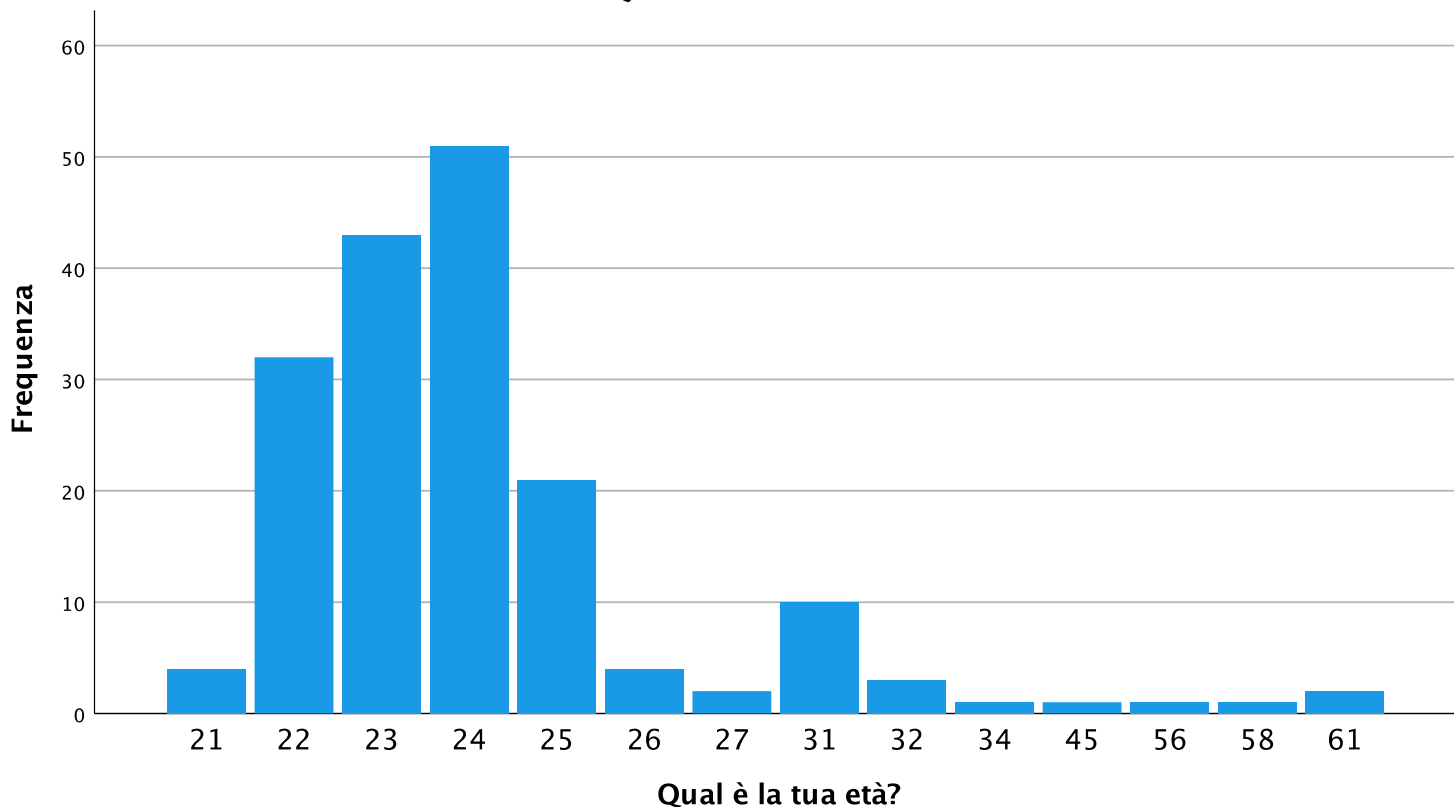
N	Valido	176
	Mancante	0

Qual è la tua età?

	Frequenza	Percentuale	Percentuale valida	Percentuale cumulativa
Valido 21	4	2,3	2,3	2,3
22	32	18,2	18,2	20,5
23	43	24,4	24,4	44,9
24	51	29,0	29,0	73,9
25	21	11,9	11,9	85,8

26	4	2,3	2,3	88,1
27	2	1,1	1,1	89,2
31	10	5,7	5,7	94,9
32	3	1,7	1,7	96,6
34	1	,6	,6	97,2
45	1	,6	,6	97,7
56	1	,6	,6	98,3
58	1	,6	,6	98,9
61	2	1,1	1,1	100,0
Totale	176	100,0	100,0	

Qual è la tua età?



RELIABILITY – CUSTOMER SATISFACTION SCALE

Riepilogo elaborazione casi

		N	%
Casi	Valido	176	100,0
	Escluso ^a	0	,0
	Totale	176	100,0

a. Eliminazione listwise basata su tutte le variabili nella procedura.

Statistiche di affidabilità

Alpha di Cronbach	N. di elementi
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Statistiche degli elementi

	Media	Deviazione std.	N
Potresti indicare quanto sei stato soddisfatto dell'esperienza che hai provato in precedenza, selezionando lo spazio che meglio rappresenta la sua risposta. - Mi ha deluso:Mi ha fatto piacere	5,21	1,484	176
Potresti indicare quanto sei stato soddisfatto dell'esperienza che hai provato in precedenza, selezionando lo spazio che meglio rappresenta la sua risposta. - Mi ha disgustato:Ne sono contento	5,27	1,379	176
Potresti indicare quanto sei stato soddisfatto dell'esperienza che hai provato in precedenza, selezionando lo spazio che meglio rappresenta la sua risposta. - Fortemente non soddisfatto:Fortemente soddisfatto	5,15	1,502	176
Potresti indicare quanto sei stato soddisfatto dell'esperienza che hai provato in precedenza, selezionando lo spazio che meglio rappresenta la sua risposta. - È un lavoro scadente per me:È un buon lavoro per me	5,17	1,460	176
Potresti indicare quanto sei stato soddisfatto dell'esperienza che hai provato in precedenza, selezionando lo spazio che meglio rappresenta la sua risposta. - Pessima scelta di acquisto:Ottima scelta di acquisto	5,16	1,449	176

Potresti indicare quanto sei stato soddisfatto dell'esperienza che hai provato in precedenza, selezionando lo spazio che meglio rappresenta la sua risposta. - Fortemente scontento:Fortemente contento	5,26	1,421	176
Potresti indicare quanto sei stato soddisfatto dell'esperienza che hai provato in precedenza, selezionando lo spazio che meglio rappresenta la sua risposta. - Bassissimo valore:Altissimo valore	5,27	1,487	176
Potresti indicare quanto sei stato soddisfatto dell'esperienza che hai provato in precedenza, selezionando lo spazio che meglio rappresenta la sua risposta. - Frustrante:Piacevole	5,36	1,459	176
Potresti indicare quanto sei stato soddisfatto dell'esperienza che hai provato in precedenza, selezionando lo spazio che meglio rappresenta la sua risposta. - Fortemente negativo:Fortemente positivo	5,32	1,370	176

Statistiche elemento-totale

	Media scala se viene eliminato l'elemento	Varianza scala se viene eliminato l'elemento	Correlazione elemento-totale corretta	Alpha di Cronbach se viene eliminato l'elemento
Potresti indicare quanto sei stato soddisfatto dell'esperienza che hai provato in precedenza, selezionando lo spazio che meglio rappresenta la sua risposta. - Mi ha deluso:Mi ha fatto piacere	41,97	118,376	,929	,982

Potresti indicare quanto sei stato soddisfatto dell'esperienza che hai provato in precedenza, selezionando lo spazio che meglio rappresenta la sua risposta. - Mi ha disgustato:Ne sono contento	41,90	120,979	,913	,983
Potresti indicare quanto sei stato soddisfatto dell'esperienza che hai provato in precedenza, selezionando lo spazio che meglio rappresenta la sua risposta. - Fortemente non soddisfatto:Fortemente soddisfatto	42,02	118,159	,924	,983
Potresti indicare quanto sei stato soddisfatto dell'esperienza che hai provato in precedenza, selezionando lo spazio che meglio rappresenta la sua risposta. - È un lavoro scadente per me:È un buon lavoro per me	42,01	118,977	,926	,982
Potresti indicare quanto sei stato soddisfatto dell'esperienza che hai provato in precedenza, selezionando lo spazio che meglio rappresenta la sua risposta. - Pessima scelta di acquisto:Ottima scelta di acquisto	42,02	119,583	,912	,983
Potresti indicare quanto sei stato soddisfatto dell'esperienza che hai provato in precedenza, selezionando lo spazio che meglio rappresenta la sua risposta. - Fortemente scontento:Fortemente contento	41,92	119,411	,938	,982
Potresti indicare quanto sei stato soddisfatto dell'esperienza che hai provato in precedenza, selezionando lo spazio	41,90	118,008	,940	,982

che meglio rappresenta la sua risposta. - Bassissimo valore:Altissimo valore				
Potresti indicare quanto sei stato soddisfatto dell'esperienza che hai provato in precedenza, selezionando lo spazio che meglio rappresenta la sua risposta. - Frustrante:Piacevole	41,82	119,155	,920	,983
Potresti indicare quanto sei stato soddisfatto dell'esperienza che hai provato in precedenza, selezionando lo spazio che meglio rappresenta la sua risposta. - Fortemente negativo:Fortemente positivo	41,85	120,241	,947	,982

RELIABILITY – PURCHASE INTENTION SCALE

Riepilogo elaborazione casi

		N	%
Casi	Valido	176	100,0
	Escluso ^a	0	,0
	Totale	176	100,0

a. Eliminazione listwise basata su tutte le variabili nella procedura.

Statistiche di affidabilità

Alpha di Cronbach	N. di elementi
,985	4

Statistiche degli elementi

	Media	Deviazione std.	N
Quanto è possibile che acquisterai il prodotto? - Altamente impossibile:Altamente possibile	5,11	1,803	176
Quanto è probabile che acquisterai il prodotto? - Altamente improbabile:Altamente probabile	4,99	1,745	176

Quanto è certo che acquisterai il prodotto? - Altamente incerto:Altamente certo	4,99	1,757	176
Che possibilità ci sono di acquistare il prodotto? - Nessuna possibilità:Tante possibilità	5,12	1,671	176

Statistiche elemento-totale

	Media scala se viene eliminato l'elemento	Varianza scala se viene eliminato l'elemento	Correlazione elemento-totale corretta	Alpha di Cronbach se viene eliminato l'elemento
Quanto è possibile che acquisterai il prodotto? - Altamente impossibile:Altamente possibile	15,10	25,864	,953	,983
Quanto è probabile che acquisterai il prodotto? - Altamente improbabile:Altamente probabile	15,22	26,227	,969	,978
Quanto è certo che acquisterai il prodotto? - Altamente incerto:Altamente certo	15,22	26,311	,954	,982
Che possibilità ci sono di acquistare il prodotto? - Nessuna possibilità:Tante possibilità	15,09	26,952	,971	,978

INDEPENDENT SAMPLE T TEST – CUSTOMER SATISFACTION (H1)

Statistiche gruppo

	On_OffWithoutMar Tech	N	Media	Deviazione std.	Errore standard della media
mean	,00	43	5,4186	,41633	,06349
1	1,00	42	3,3704	1,00964	,15579

Test campioni indipendenti											
		Test di Levene per l'eguaglianza delle varianze			Test t per l'eguaglianza delle medie					Intervallo di confidenza della differenza di 95%	
		F	Sign.	t	gl	Significatività P unilaterale	Significatività P bilaterale	Differenza della media	Differenza errore std.	Inferiore	Superiore
mean1	Varianze uguali presunte	9,906	,002	12,278	83	<,001	<,001	2,04823	,16682	1,71644	2,38002
	Varianze uguali non presunte			12,175	54,288	<,001	<,001	2,04823	,16823	1,71099	2,38548

Dimensioni effetto campioni indipendenti

		Standardizzatore ^a	Stima del punto	Intervallo di confidenza 95%	
				Inferiore	Superiore
mean	D di Cohen	,76893	2,664	2,072	3,246
1	Correzione di Hedges	,77597	2,640	2,054	3,217
	Delta di Glass	1,00964	2,029	1,412	2,633

a. Il denominatore utilizzato per stimare le dimensioni dell'effetto.

D di Cohen utilizza la deviazione standard raggruppata.

La correzione Hedges utilizza la deviazione standard raggruppata, più un fattore di correzione.

Il delta di Glass utilizza la deviazione standard del campione del gruppo di controllo.

INDEPENDENT SAMPLE T TEST – PURCHASE INTENTION (H1)

Statistiche gruppo

	On_OffWithoutMar Tech	N	Media	Deviazione std.	Errore standard della media
mean	,00	43	5,6453	,46366	,07071
2	1,00	42	2,4881	1,11113	,17145

Test campioni indipendenti											
		Test di Levene per l'eguaglianza delle varianze			Test t per l'eguaglianza delle medie					Intervallo di confidenza della differenza di 95%	
		F	Sign.	t	gl	Significatività P unilaterale	Significatività P bilaterale	Differenza della media	Differenza errore std.	Inferiore	Superiore
mean2	Varianze uguali presunte	20,426	<,001	17,167	83	<,001	<,001	3,15725	,18391	2,79146	3,52305
	Varianze uguali non presunte			17,024	54,591	<,001	<,001	3,15725	,18546	2,78552	3,52898

Dimensioni effetto campioni indipendenti

		Standardizzatore ^a	Stima del punto	Intervallo di confidenza 95%	
				Inferiore	Superiore
	D di Cohen	,84773	3,724	3,012	4,428

mean	Correzione di	,85549	3,691	2,985	4,387
2	Hedges				
	Delta di Glass	1,11113	2,841	2,090	3,581

a. Il denominatore utilizzato per stimare le dimensioni dell'effetto.

D di Cohen utilizza la deviazione standard raggruppata.

La correzione Hedges utilizza la deviazione standard raggruppata, più un fattore di correzione.

Il delta di Glass utilizza la deviazione standard del campione del gruppo di controllo.

TWO WAY ANOVA – CUSTOMER SATISFACTION (H2)

Fattori tra soggetti

	N
On_Off ,00	89
1,00	87
Mar_no ,00	85
1,00	91

Statistiche descrittive

Variabile dipendente: mean1

On_Off	Mar_no	Medio	Deviazione std.	N
,00	,00	5,4186	,41633	43
	1,00	6,7150	,43989	46
	Totale	6,0886	,77853	89
1,00	,00	3,3704	1,00964	42
	1,00	5,3136	,65789	45
	Totale	4,3755	1,28891	87
Totale	,00	4,4065	1,28272	85
	1,00	6,0220	,89706	91
	Totale	5,2418	1,36346	176

Test di Levene di eguaglianza delle varianze dell'errore^{a, b}

		Statistica di Levene	gl1	gl2	Sig.
mean1	Basato sulla media	7,672	3	172	<,001
	Basato sulla mediana	5,345	3	172	,002
	Basato sulla mediana e con il grado di libertà adattato	5,345	3	96,151	,002
	Basato sulla media ritagliata	7,102	3	172	<,001

Verifica l'ipotesi nulla che la varianza dell'errore della variabile dipendente sia uguale tra i gruppi.^{a, b}

a. Variabile dipendente: mean1

b. Disegno: Intercetta + On_Off + Mar_no + On_Off * Mar_no

Test di effetti tra soggetti

Variabile dipendente: mean1

Origine	Somma dei quadrati di tipo III	df	Media quadratica	F	Sig.	Eta quadrato parziale	Parametro noncent.	Potenza osservata ^b
Modello corretto	248,502 ^a	3	82,834	185,451	<,001	,764	556,354	1,000
Intercetta	4760,907	1	4760,907	10658,867	<,001	,984	10658,867	1,000
On_Off	130,730	1	130,730	292,683	<,001	,630	292,683	1,000
Mar_no	115,295	1	115,295	258,125	<,001	,600	258,125	1,000
On_Off * Mar_no	4,596	1	4,596	10,291	,002	,056	10,291	,891
Errore	76,826	172	,447					
Totale	5161,173	176						
Totale corretto	325,328	175						

a. R-quadrato = ,764 (R-quadrato adattato = ,760)

b. Calcolato utilizzando alfa = ,05

TWO WAY ANOVA – PURCHASE INTENTION (H2)

Fattori tra soggetti

		N
On_Off	,00	89
	1,00	87
Mar_no	,00	85
	1,00	91

Statistiche descrittive

Variabile dipendente: mean2

On_Off	Mar_no	Medio	Deviazione std.	N
,00	,00	5,6453	,46366	43
	1,00	6,5761	,61885	46
	Totale	6,1264	,71918	89
1,00	,00	2,4881	1,11113	42
	1,00	5,3222	,84380	45
	Totale	3,9540	1,72681	87
Totale	,00	4,0853	1,79763	85
	1,00	5,9560	,96795	91
	Totale	5,0526	1,70642	176

Test di Levene di eguaglianza delle varianze dell'errore^{a, b}

		Statistica di Levene	gl1	gl2	Sig.
mean2	Basato sulla media	8,033	3	172	<,001
	Basato sulla mediana	6,995	3	172	<,001
	Basato sulla mediana e con il grado di libertà adattato	6,995	3	143,090	<,001
	Basato sulla media ritagliata	8,061	3	172	<,001

Verifica l'ipotesi nulla che la varianza dell'errore della variabile dipendente sia uguale tra i gruppi.^{a, b}

a. Variabile dipendente: mean2

b. Disegno: Intercetta + On_Off + Mar_no + On_Off * Mar_no

Test di effetti tra soggetti

Variabile dipendente: mean2

Origine	Somma dei quadrati di tipo III	df	Media quadratica	F	Sig.	Eta quadrato parziale	Parametro noncent.	Potenza osservata ^b
Modello corretto	401,367 ^a	3	133,789	212,659	<,001	,788	637,976	1,000
Intercetta	4408,280	1	4408,280	7006,996	<,001	,976	7006,996	1,000
On_Off	213,761	1	213,761	339,775	<,001	,664	339,775	1,000
Mar_no	155,715	1	155,715	247,510	<,001	,590	247,510	1,000
On_Off * Mar_no	39,800	1	39,800	63,263	<,001	,269	63,263	1,000
Errore	108,210	172	,629					
Totale	5002,563	176						
Totale corretto	509,576	175						

a. R-quadrato = ,788 (R-quadrato adattato = ,784)

b. Calcolato utilizzando alfa = ,05

SUMMARY

Despite important focus and efforts spent on innovation, the fashion industry has failed to reduce its environmental impact over the past years. Unfortunately, it still has an undue negative impact on the planet: in rough terms, it produces 10% of the total global carbon emissions and the 30% of those emissions goes to impact ocean health⁹⁸. Indeed, most fashion items are created using non-biodegradable synthetic materials that unfortunately end up in landfills at the end of their life cycle⁹⁹. These environmentally harmful consequences can be explained through the large usage of polyester, a non-biodegradable synthetic fiber that seriously impacts the environment by releasing toxic parts. Polyester is the fiber most used in fashion industry, used in 54% of fashion garments. But also cotton, at 22%, despite its natural origin could be harmful to the environment due to pesticides and fertilizers usage¹⁰⁰.

One might think the luxury fashion industry as more sustainable due to the greater durability of the products, and the greater care in production where quality outweighs quantity.

In reality, sustainability and luxury have a relationship that can be described as complicated: indeed, companies have to find the right balance between a real commitment to sustainability and luxury's quality and exclusivity. The aim is to combine these two seemingly contrasting worlds, luxury and sustainability. At first glance, they seem to be two distant concepts due to their apparently conflicting definitions: luxury is exclusivity, high quality due to fine raw materials while sustainability is inclusiveness, prudence, moderation intended to respect the planet's limited resources. So, luxury and sustainability may be seemingly at odds, but nevertheless these two worlds can coexist in a single product, even if the luxury industry is still far from it.

The sustainable element in this sector must not be overlooked precisely because it could positively affect its expansion. It is true that it constitutes only a small part of the garment industry, but it actually contributes and will continue to contribute to the deterioration of the environmental situation. It is worth mentioning the important role that luxury companies play in promoting and communicating high human values and their influence on people's behavior, therefore their attention to sustainability can result in a huge impact¹⁰¹.

Innovative sustainable fibers usage is one of the ways to help the improvement of the current situation by decreasing environmental impact.

These fabrics are mostly made from food industry waste, used to create materials with minimal environmental impact. The textiles made from fruits like oranges, pineapples, apples, and many more are among the most well-known and they could provide the following advantages: a decrease in waste production, carbon

⁹⁸ Notaro, E. (2021) "Moda E Inquinamento: Le 7 Linee Guida di one Ocean Foundation", *Luxury&Finance*. Available at: <https://www.luxuryandfinance.it/articoli/moda-inquinamento-7-linee-guida-2021-02-11-13-40>

⁹⁹ Pucker, K. P. (2022). "The Myth of Sustainable Fashion". *Harvard Business Review*. Available at: <https://hbr.org/2022/01/the-myth-of-sustainable-fashion>

¹⁰⁰ Textile Exchange. (2022). "Distribution of textile fibers production worldwide in 2021, by type" [Graph]. In Statista. Retrieved from <https://www.statista.com/statistics/1250812/global-fiber-production-share-type/>

¹⁰¹ Osburg, VS., Davies, I., Yoganathan, V. et al. (2021) "Perspectives, Opportunities and Tensions in Ethical and Sustainable Luxury: Introduction to the Thematic Symposium". *J Bus Ethics* 169, 201–210. Available at: <https://doi.org/10.1007/s10551-020-04487-4>

emissions, and water contamination. Additionally, these cutting-edge materials give luxury firms the chance to stand out from rivals and develop items that are original and one-of-a-kind¹⁰².

But here comes the first problem: there is often a big discrepancy between an individual's intention and his or her actual behavior¹⁰³.

Especially in luxury fashion industry, although most people agree that sustainability is an essential issue, when given the choice between two solutions, one more sustainable and one less sustainable, individuals are likely to be more inclined to choose the less sustainable option¹⁰⁴.

This is because, although everyone wants to behave sustainably, as this is a critical issue and everyone wants to have a livable future, the intentions of individuals rarely match their actions. In fact, attitudes more often predict intentions rather than actions, which are predicted to a lesser extent¹⁰⁵.

It is possible to say that there are psychological barriers that sometimes prevent people from acting in the most responsible way. These ‘dragons of inaction’¹⁰⁶ can occur for many reasons, for example: the belief and perception that "my" change is unnecessary; information overload; unsustainable actions becoming habits; tokenism; hope and trust in technology; temporal separation and dimensional distance.

Even those who are more attentive and sensitive to these issues will certainly pay more attention to everyday purchases rather than to few luxury purchases. Indeed, during a luxury purchase there is a perception that it will have virtually zero impact on the environment.

This gap between attitude and behavior must be reduced or closed as soon as possible if this industry is to become more sustainable¹⁰⁷.

Indeed, consumers must be helped by the brand to make this effort, pushing the move from intention to action. To make this change real, company and consumer must work and take the step together. In order to reduce this gap, the task of the brand is to make sustainable proposals appear more attractive in the eyes of consumers, make consumers feel part of the journey and show, speak a sustainable language that is easily understood so that the consumer can learn with minimal effort; incentivizing them to buy the right things, focusing on

¹⁰² Kiron, M.I. and Mazharul Islam Kiron. Textile Learner (2023) “Sustainable Fibers Features, Properties, Application, Advantages and Market”. Available at: <https://textilelearner.net/sustainable-fibers-an-overview/>

¹⁰³ Girod, S. (2021). “Luxury Is Learning To Deal With The Contradictions Of Sustainability”. Forbes. Available at: <https://www.forbes.com/sites/stephane Girod/2021/07/01/luxury-is-learning-to-deal-with-the-contradictions-of-sustainability/?sh=62791bc52667>

¹⁰⁴ Gifford, R. (2011). "The Dragons of Inaction: Psychological Barriers That Limit Climate Change Mitigation and Adaptation", American Psychologist Available at: https://www.researchgate.net/publication/254734365_The_Dragons_of_Inaction_Psychological_Barriers_That_Limit_Climate_Change_Mitigation_and_Adaptation

¹⁰⁵ Park, H.J. and Lin, L.M. (2020) “Exploring attitude–behavior gap in sustainable consumption: Comparison of recycled and upcycled fashion products,” Journal of Business Research, 117, pp. 623–628. Available at: <https://doi.org/10.1016/j.jbusres.2018.08.025>

¹⁰⁶ Gifford, R. (2011). "The Dragons of Inaction: Psychological Barriers That Limit Climate Change Mitigation and Adaptation", American Psychologist Available at: https://www.researchgate.net/publication/254734365_The_Dragons_of_Inaction_Psychological_Barriers_That_Limit_Climate_Change_Mitigation_and_Adaptation

¹⁰⁷ Zalando Corporate Website. (2021) Attitude-behavior gap report. Available at: <https://corporate.zalando.com/en/our-impact/sustainability/sustainability-reports/attitude-behavior-gap-report#consumer-attitudes-seven-key-themes>

sustainable quality. All this to make people take sustainable actions even in times of leisure where they naturally do not want to think too much about the consequences of their actions, to make it easy to change towards a correct purchasing model.

The described phenomenon, the gap between intention and actual purchase, may occur even more in online sales channels than in the brand's physical shop. There may be a different result between the two channels due to shortcomings in the online channel, resulting in an experience unfortunately of different intensity.

It has to be acknowledged that offline sales offer a tactile experience that is virtually impossible to replicate in the digital channel. Especially in the luxury industry, it is thought that physical shops cannot be replaced, even in the long term. But this difference in experience can be reduced by offering extra services in the online channel, by fulfilling other customer desires, so that customers can experience almost as much satisfaction as in the shop.

The four fundamental aspects that in-store shopping offers - and that make one think that the online is still far from replacing the physical one - are the human relationship, the instantaneous delivery of the product, being able to see touch and experience the product, and the possibility of receiving immediate answers to one's questions¹⁰⁸.

Two of them, human relations and the immediate help and answers from qualified salespeople, can be addressed by online channels through the use of technology. Through artificial intelligence and the proper use of chatbots, increasingly used today, the customer could be satisfied and convinced to buy even without having to go to the physical store. Through artificial intelligence and chatbots - also adding live chat when needed - the customer can discuss, ask questions and remove any kind of doubt with a qualified virtual (sometimes even real) seller.

The third of them, being able to see and touch the product, is also a key aspect for consumers, sometimes essential for making the purchase decision, especially if it costs a large sum. Here again, the use of technology, with augmented reality, can help consumers try on garments directly from their homes via their device's camera. It is true that the situation is not comparable with actually trying on the product and being able to feel it on, but this could be a first step to bring the customer closer to the product. In addition, the customer - after trying on the garment in augmented reality - may feel convinced to buy it if aware of excellent efficiency in the return management: if after trying it he/she does not like it, he/she can feel free to return it through a quick and easy process. This way customers are certainly more inclined to take the risk and thus buy the product, even having only tried it virtually.

Creating a website alone is no longer enough. Even for the luxury industry, the online channel must no longer be underestimated considering it a secondary channel, but it must still be able to offer a unique consumer experience, increasing human interactions in order to provide real emotions.

¹⁰⁸ TelnetData (2021). "Negozio fisico e online: Quando L'Unione fa la forza!" Telnet Data. Available at: <https://www.telnetdata.it/e-commerce/la-coesistenza-di-negozi-online-e-fisici/>

The actual preferred experience in the physical channel rather than online is even more verified in luxury shopping. Despite the enormous rise of digital channels in the fashion and luxury industries, consumers still favor physical stores. This is because the experience, and the 'dream effect' provided by physical stores, are the factors most sought after by luxury consumers.¹⁰⁹ In luxury, once inside the physical shop, the buying process is a true event, with attention to detail. Companies in this industry aim to create the magic, an emotional value. Indeed, the customer not only buys a product of incomparable quality and exclusivity, but also the entire baggage of emotions associated with the experience linked to it.

It can be argued that this behavior will be even truer when it comes to products with innovative and sustainable fibers in the luxury industry. It is true that as consumers become increasingly aware of the environmental problems associated with production, the latter is becoming more ethical and therefore sustainable, but it is often more difficult to be successful with these products. It is easier for a consumer, finding himself in the shop, to be impressed by the innovative offer, because he/she can see it with his own eyes, he/she can touch it, try it on, and the qualified salespeople can explain the entire production process, showing the quality and value that these products can have.

For a luxury consumer buying online, it is therefore more difficult to buy the sustainable innovative fiber solution: he/she may lack the 'dream effect' mentioned earlier. Moreover, it has been discovered that customers have an incorrect view of the quality of sustainable luxury goods, who are thought to be of lower value than non-sustainable luxury goods. This false notion, of course, has a negative impact on consumers' decisions to buy sustainable goods from luxury retailers.¹¹⁰

When buying a luxury item, consumers often look for things that offer long-term value and don't need to be replaced frequently or even repaired. What about the quality and long-term worth of products manufactured with novel fibers? It might be less certain, customers do not have many references and reviews on these products, because they are rarer and newer. This is an essential issue to address.

This could be especially true for customers who buy high-end clothing less frequently. For this type of consumer, they are less likely to worry about the environmental consequences, leaving out the sustainable element. Other customers are willing to take greater risks when buying luxury goods, particularly if they want something exceptional, distinctive and unique to help them stand out from the crowd. In this situation, the risk might be viewed as a chance to get a special and priceless item that would raise their perception of status and distinction.

So, the luxury brand's duty is to try to spread the message of a product that encompasses exclusivity, originality, uniqueness and high quality, while contributing to the health of our world and get the message

¹⁰⁹ Deloitte. (2022). "Cresce la digitalizzazione del settore Fashion & Luxury, ma i negozi fisici si confermano strategici per i clienti". Available at: <https://www2.deloitte.com/it/it/pages/technology/articles/cresce-la-digitalizzazione-del-settore-fashion-luxury.html>

¹¹⁰ Dekhili, S., Achabou, M.A. and Alharbi, F. (2019) "Could sustainability improve the promotion of luxury products?," *European Business Review*, 31(4), pp. 488–511. Available at: <https://doi.org/10.1108/eb-04-2018-0083>.

across to the consumer that they have the opportunity to be a protagonist of this change by wearing unique pieces.

To summarize, the consumer may be more inclined to take no risks and choose a less sustainable but safer solution that still satisfies his/her wishes. Since we are in luxury, the cost of the product is certainly high, with a too high purchase risk and uncertain benefits. The consumer is likely to buy online only if it is a classic, better-known product that he already knows.

Therefore, the research question that this study aims to answer is the following:

When does the use of sustainable innovative fibers on luxury products sold through online channels (vs physical) negatively influence customer satisfaction and effective purchase? Can the use of MarTech decrease the negative effect and current limitations of online channels on customer satisfaction and effective purchase?

This thesis aims to make its contribution by proposing the use of MarTech as an approach to improve the digital customer experience, providing the consumer with a personalized experience also in online channels, to improve the relationship between the online channel and customer satisfaction and actual purchase, even in situations such as the sale of innovative sustainable products.

MarTech is a broad field that has been growing rapidly in recent years. It aims to improve the results of marketing investments through innovation and the use of Information Technology, although it faces barriers to actual success, mainly due to the skills gap between marketing and IT professionals.

An overall luxury 4.0 model is evolving, and it is distinguished not only by the expansion of the online sales channel but also by the digitalization of the complete consumer purchase journey in the luxury industry.

The most sought-after technology right now is artificial intelligence (AI), which enhances consumer experiences, and enables firms to satisfy a larger audience. Due to their capacity to improve the whole shopping experience and produce high-quality content for digital marketing, immersive technologies like virtual and augmented reality (VR/AR) are also being employed more frequently¹¹¹.

Technology may enhance consumer satisfaction during the purchasing process as well as inform and illustrate the sustainable production process in a more engaging way, increasing the level of transparency and involvement as a crucial component of a successful sustainable strategy. Specifically, thanks to the traceability of the supply chain, the consumer will be able to see the complete production process, from raw materials to final goods. This lessens the likelihood of "greenwashing", a type of deceptive marketing that advertises sustainable actions and guarantees sustainable benefits when these activities are not actually carried out.

¹¹¹ Statista. (2022). "Luxury Goods - In-depth Market Insights & Data Analysis". Available at: <https://www.statista.com/study/61582/in-depth-report-luxury-goods/>

Traditional content in the websites, such photos, videos, has been found to be insufficient to hold the interest of premium brand devotees. Contrarily, if the information is dynamic and engaging, consumers are more likely to respond to a marketing message.

As a MarTech solution, an innovative chatbot will be offered on the luxury brand's website, simulating a professional and qualified sales assistant in the physical shop: each customer will be helped, if he or she wishes, by a virtual assistant (with the ability to switch to live chat when predefined alerts about the potential importance of the purchase occur). It will have a name and a face as if it were a real personal assistant, it will introduce the consumer to the brand's innovative products, explain their quality, value, sustainability, but it will also interact with the customer, asking for opinions, to understand what they like, what they don't like and why, to offer a better customer experience.

In addition, consumers will also be able to try these innovative products virtually, through a smart fitting room using augmented reality.

In the study, the stimulus related to the physical channel with the presence of MarTech will also be present. Indeed, through MarTech, inside the shop it is possible to learn more about the brand's innovative collection, interacting with screens that will explain to the consumer how the fashion industry still has a negative impact on the planet, the traceability of materials throughout the production process and an intelligent mirror through which you can try on garments in one second, without having to waste time changing in the fitting room.

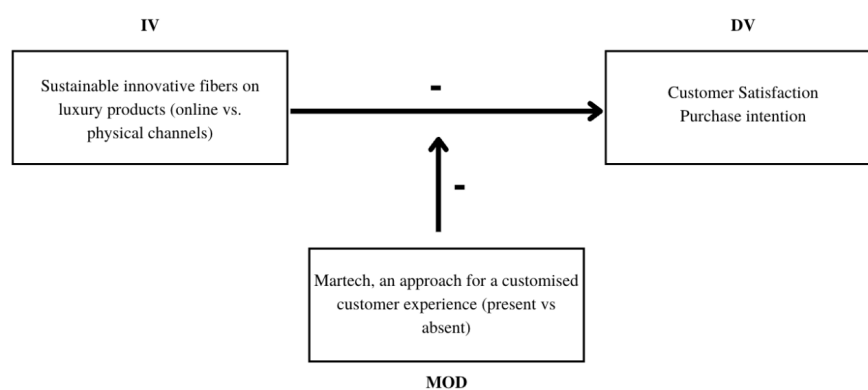


Figure 1: The Conceptual Model

Regarding the conceptual model, the independent variable is online vs. physical channel in the sale of innovative sustainable luxury products; the dependent variables are customer satisfaction and relative purchase intention. This relationship can be reinforced by the presence or absence of the moderator, in this case MarTech, as a tool for a better and customized customer experience.

Thus, the contribution of this thesis is twofold:

- The first aims to demonstrate that the sale of luxury products made with innovative sustainable fibers through digital channels, such as the brand website, has a negative and minor effect on customer satisfaction and thus on the actual purchase by consumers, when compared to physical channels (H1);

- The second contribution aims to propose MarTech as an approach that can mitigate the negative relationship between the online channel and the actual purchase, analyzed above (H2).

The conceptual model was tested by a quantitative research study consisting of a pre-test and a subsequent main study. It was intended to create a randomized between-subjects survey on the Qualtrics platform (where each respondent has the opportunity to try only one of four proposed experiences) and distribute it to a large convenience sample to support the thesis in a meaningful way.

The market taken into consideration is the Italian one and the target group is males and females aged between 21 and 61. Finally, the results were analyzed using SPSS software.

Each respondent in both the pre-test and main study was subjected to a different experience and then asked to answer questions related to the one they experienced. The study is specifically a randomized between-subject design because each respondent only experiences one stimulus, so different people experience different stimuli.

As the research deals with online and physical channels in the luxury sector, first of all a luxury brand called 'Suhra' was invented. This was for a twofold purpose: to give the respondents a scenario as realistic as possible by creating a real luxury brand, but at the same time to avoid transferring positive or negative associations into the experiment by using a known and established brand.

The four stimuli that were created and submitted to answer the research question are:

- **CONDITION 1: ONLINE CHANNEL + MARTECH**

In the presence of this condition, the following figure (Figure 2) with the description below is presented.

“This is the website of the luxury brand *Suhra*. As you can see in the picture, you can use a chatbot to enrich your online experience. I kindly ask you to click on the link below and try the chatbot for 1-2 minutes. After talking to the chatbot, I ask you to return to this questionnaire.”

LINK: <https://chatbot.hellotars.com/conv/-pHUgo/>¹¹²

¹¹² The link of the chatbot prototype has expired. To keep it visible I have posted a video of an example of a possible conversation at this link: <https://drive.google.com/file/d/1T6qtPBDS3xE4BJhtMYXUVb3G-GoQig/view?usp=sharing>
The chatbot is in Italian to facilitate the respondents.

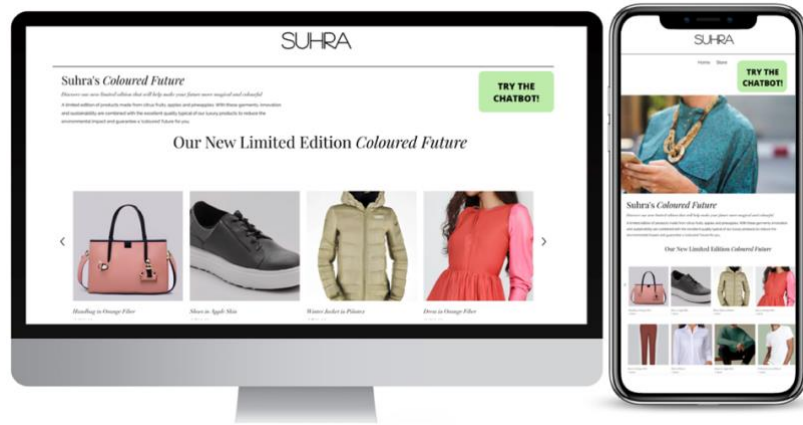


Figure 2: Pretest & Main study condition 1 – Online channel + MarTech

- CONDITION 2: PHYSICAL CHANNEL + MARTECH

In the presence of this condition, the following situation is described with the picture below (Figure 3).

"You are in the shop of the luxury brand *Suhra*.

As soon as you enter, you are greeted by sales assistants, who offer to take you through the shop experience and show you the high degree of technology the brand has at its disposal. Indeed, through MarTech, inside the shop you can learn about the new *Coloured Future* collection, a limited edition of garments made from citrus fruits, apples and pineapples. The screens you will be able to interact with will explain how the fashion industry still has a negative impact on the planet: it produces about 10 per cent of the total global carbon emissions. Furthermore, it will be shown how it is possible to verify the very low environmental impact of each component of the production process of these new garments through the traceability of materials. Finally, through a smart mirror you will be able to try on the garments in 1 second, without having to waste time changing!"



Figure 3: Pretest & Main study condition 2 – Physical channel + MarTech

- CONDITION 3: ONLINE CHANNEL WITHOUT MARTECH

In the presence of this condition, the following figure (Figure 4) with the description below is presented.

“This is the website of the luxury brand *Suhra*. You can see the full site in the link below. I ask you to explore the site for about a minute and then return to this questionnaire and answer the questions.”

LINK: <https://susannahsantoro.wixsite.com/suhra>

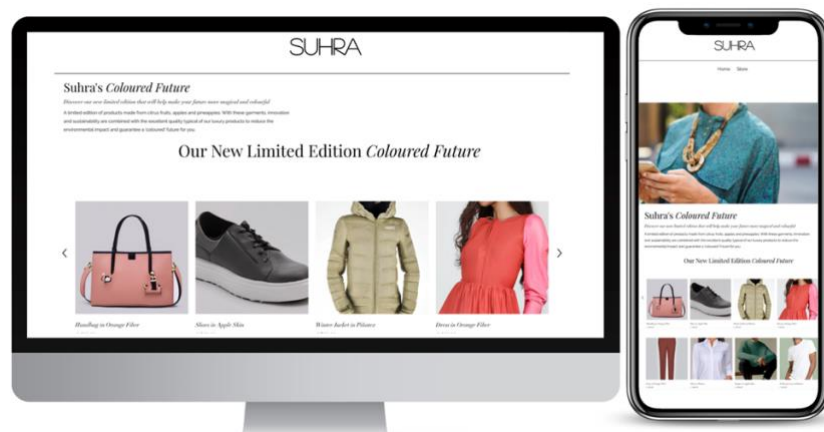


Figure 4: Pretest & Main study condition 3 – Online channel without MarTech

- CONDITION 4: PHYSICAL CHANNEL WITHOUT MARTECH

In the presence of this condition, the following situation is described with the picture below (Figure 5).

“You are in the shop of the luxury brand *Suhra*.

As soon as you enter the shop, you are warmly welcomed by the sales assistants, who offer to accompany you in this in-store experience. They tell you about the new *Coloured Future* collection, a limited edition of garments made from citrus fruits, apples and pineapples. With these garments, innovation and sustainability combine with the excellent quality typical of luxury products to reduce environmental impact and guarantee a 'colourful' future. The sales assistant will explain how the fashion industry still has a negative impact on the planet: it produces about 10% of the total global carbon emissions. Finally, you will be shown how you can verify the very low environmental impact of each component of the production process of these new garments.”



Figure 5: Pretest & Main study condition 4 – Online channel without MarTech

The main study was launched and distributed and reached a sample of 219 people. However, not all responses from these 219 respondents were taken into account, indeed 19 people did not complete the questionnaire, leaving it incomplete, and 24 failed the final attention test, stating that they saw a different condition than the one they were presented with.

Therefore 43 responses were not taken into account, and the final sample considered was reduced to 176 (80% of the total responses).

Starting from the research question, the conceptual model, and from the two hypotheses that have been prefixed above, it is possible to conclude that the sale of luxury products made with innovative and sustainable fibers through the physical sales channels succeeds in guaranteeing greater consumer satisfaction than the online channels, because if the two channel types without the use of MarTech (Condition 3 and Condition 4) are taken as an example, it can be seen that on a scale of 1 to 7, those who tried the physical shop have a satisfaction score of 5.41 and those who tried the website have a satisfaction score of 3.37.

Furthermore, talking about H2, i.e. the use of MarTech to improve this situation expressed above, it can be seen that the implementation of technology is very helpful in improving the customer satisfaction score. Indeed, those who tried the online channel with the chatbot register a satisfaction score of 5.31, slightly below those who tried the physical channel without MarTech, thus registering an improvement over the online channel without MarTech of almost 2 points.

Of course, even in the two physical store situations, the average satisfaction was already high without MarTech, but for those who tried the physical store + MarTech, the average increased to a score of 6.71 out of 7. (Figure 6)

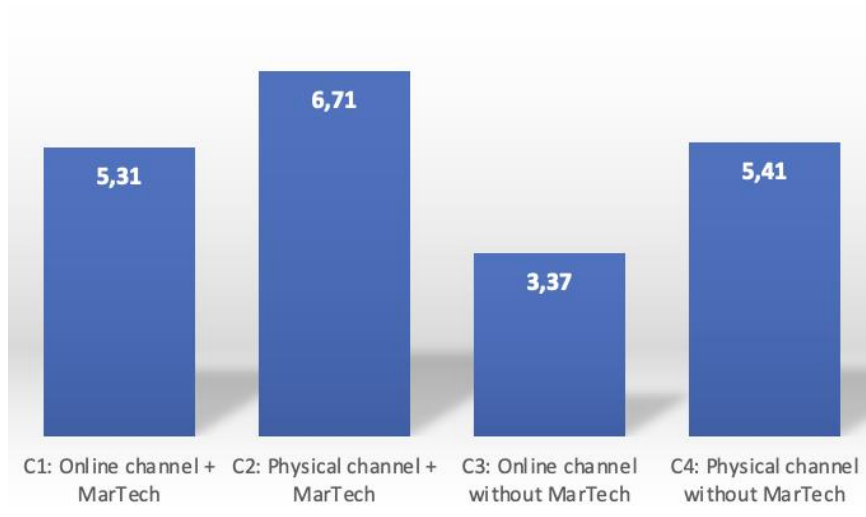


Figure 6: Customer satisfaction

The same conclusions can also be made with the second dependent variable, purchase intention. Indeed, here the difference between the online channel and the offline channel both without MarTech is remarkable (5.64 for the physical channel and 2.48 for the online channel), this goes to underline the fact that the actual purchase of a luxury product, especially if it is a product made with innovative fibers, is very rare in the online channel, the risk is really too great and consumers do not feel like taking it. With the addition of MarTech to the shopping experience the averages rise considerably, in fact the online channel from 2.48 previously rises to 5.32 (+2.84 points). (Figure 7)

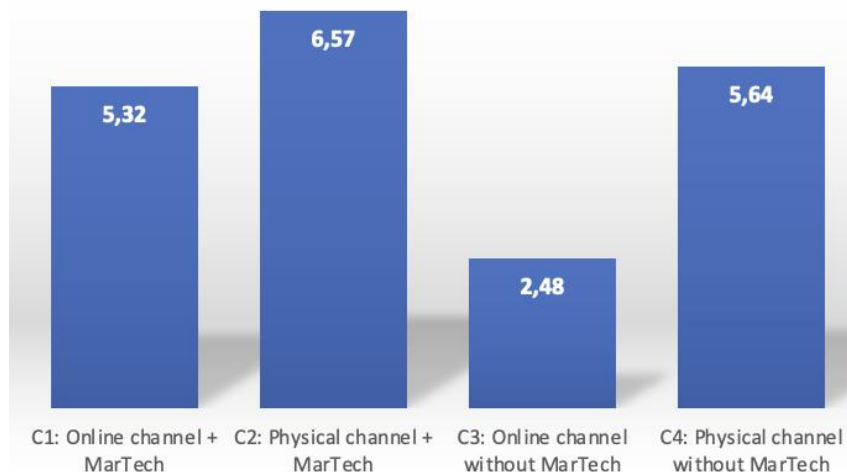


Figure 7: Purchase intention

All this therefore goes to confirm the H1 and H2 hypotheses prefixed earlier: it can be argued that the online channel satisfies less than the physical channel and the use of MarTech may be able to bridge this gap. Indeed, despite the passage of years and the invention of numerous technologies, the two shopping experiences (online vs. offline) cannot be compared. Unfortunately, this is even more true in the luxury industry, where

the tried-and-true experience and the magic of the physical store, which makes the buying process a true event, are fundamental and characterizing in this industry. This, of course, is even more verified when it comes to innovative and sustainable products, as perhaps they may be perceived unfortunately as brand sidelines. This situation can be improved through artificial intelligence, which is capable of filling some of the gaps in the online channel and even enhancing the already great experience in the physical channel.

As regards the theoretical significance of the results obtained, these go to confirm the importance of the physical experience, of the possibility of trying the products, touching them and seeing them up close, the interaction with qualified people and also confirms the uncertainty linked to the online channel experienced by consumers, where obviously these things fail.

Especially when it comes to luxury items, due to the large expense associated with them, the consumer will not be satisfied with buying via an online click, especially if they are innovative and sustainable product lines, which will have an unproven performance.

Inside the physical store, a qualified sales assistant can naturally make the consumer discover all the brand's products, even the most particular ones, guiding him/her through this experience and perhaps managing to sell him/her an item that he/she would never have thought of buying before entering the brand store.

The results show that the online customer experience is very likely to be monotonous, and this needs to be fixed because also luxury customers are increasingly turning to technology and will expect a similarly luxurious, personalized, and valuable shopping experience online.

What emerges from this study is that it is necessary to increase the performance of online sales channels, to raise satisfaction and the conversion rate as much as possible to bring it closer to the physical channel. Likely, it cannot be expected that the two channels arrive at the same results, but it would be important for luxury brands to try to equate them to the maximum in order to be able to offer a great omnichannel experience that is able to leave consumers enthusiastic, to make it possible for customers to engage with the business consistently and seamlessly across all channels. This can increase customer loyalty and the company's competitiveness in the target market.

It is essential to set that the online channel must not be understood as an additional way to purchase the garment after it was tried on in the physical store, but rather must be able at least to arouse the consumer's interest, so much so that, for example, it has to push the consumer to go to the physical store to try that product, if he/she feels compelled to try it before buying it.

But it is possible to create an engaging and personalized experience for the online customer which not only improves the user experience but increases the probability that the customer will perform the desired action on the website, therefore the actual purchase, raising the conversion rate. A great attractive website design (already present for luxury brands) is no longer enough because even if the satisfaction will be not too low, the purchase intention will be lower being it a real action that involves a large outlay of money.

As stated, the use of technology can be very valuable. The luxury brand website must be able to tell a story, creating a non-passive and interactive experience powered by technology, with chatbots at the forefront.

The customer who talks to a chatbot as close as possible to a real person - asking for questions, giving opinions and best informing about the brand's offerings - can make the customer feel a little more part of the experience they would have had in a physical store.

Trying on clothes with augmented reality will be effective as it will increase customer engagement, making them have fun trying on the luxury brand's garments at home.

In addition, companies need to integrate customer data from all channels and make effective use of the enormous amount of data to improve and personalize user experiences.

Artificial intelligence is revolutionizing the relationship between brands and consumers and the increasing level of technology is becoming more and more capable of delivering a unique and personalized experience to consumers. This can both improve the not-so-positive relationship between luxury brands' online sales channel and customer satisfaction and purchase intent, but also take customer satisfaction to an even higher level when they are in the physical store.

As far as limitations and thus recommendations for future research are concerned, certain shortcomings of the sample must certainly be mentioned.

Indeed, it would certainly be possible to explore the topic further with a larger number of respondents, with a greater balance between males and females, and effective clusters of potential luxury customers. It would also be interesting to study the phenomenon from an international perspective by comparing different countries, because this study only has Italian respondents, indeed for this reason results cannot be generalized, due to the participants' restricted demographic makeup.

The average age could also be a new cue for future research, as in this study the average was 25 years old, but usually luxury buyers have a higher average, so expanding the questionnaire could certainly be useful to actually understand how their perception of the online channel would change and whether they would shop through it.

In order to reflect a more real rather than hypothetical situation, future studies should focus only on buyers of luxury goods and exclude people who are not used to buying luxury goods. Targeting the sample may therefore aid in obtaining more accurate results.

Lastly, future research might benefit from exploring MarTech in a greater way, exploring even more ways to get a unique experience through technology. MarTech has so many fields of application, as seen in Chapter 2, so further usage of MarTech could be thought, as an example by targeting a realistic smart fitting room where respondents can try on products.