



Degree Program in Marketing

Leveraging AI in Marketing to Drive Sustainable Practices: A Strategic Framework for Eco-Conscious Consumers in Italian Fashion industry and the Role of AI vs Human Recommendations

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I dedicate this thesis to my dearest mother, who has been both a mother and a father throughout my life. Her sacrifices, resilience, and endless prayers have been the foundation of my journey. It is through her strength and unwavering support that I have been able to fulfill the dream my late father once held, that I would graduate from abroad. Today, this achievement is not only mine but truly hers, and also a tribute to the memory of my father.

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Abstract

This study explores the role of artificial intelligence (AI) versus human recommendations in driving sustainable consumer behavior within the Italian fashion industry. The research aims to develop a strategic framework that enables fashion brands to engage eco-conscious consumers through data-driven personalization while promoting responsible production and consumption. Drawing on the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB), the study investigates how pro-environmental commitment (PEC) influences purchase intentions both directly and indirectly through AI- and human-generated recommendations.

A quantitative, explanatory research design was employed, using a structured questionnaire distributed to 256 respondents who prefer eco-friendly products. The data were analyzed using SPSS (Version 29) and PROCESS Macro models to test for mediation and moderation effects. Results revealed that PEC is the strongest predictor of sustainable purchase intentions, followed by AI-generated recommendations, which significantly amplify the relationship between PEC and purchase behavior. Human recommendations, while positive, showed no significant predictive effect when controlling for other variables.

The findings underscore the potential of AI-powered personalization as a strategic tool for promoting sustainable fashion, suggesting that brands should integrate AI-driven recommendation systems and align campaigns with consumers' environmental values. This research contributes to the literature by comparing the relative impact of AI versus human recommendations in sustainable marketing, offering insights for practitioners, policymakers, and scholars seeking to bridge the gap between technological innovation and environmental responsibility

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1 Research background

The role of AI in marketing has observed a significant growth, which is backed by its ability to personalise consumer experience and predict future behaviour, which has also made it a significant driver of engagement with customers. An article by Ganesh *et al.* (2024) focuses on the application of AI technologies within marketing. It talks about consumer behaviour, segmentation, and personalization. Their findings indicated that AI has helped marketers in understanding consumer preferences effectively and predicting their future behaviour, which is important for targeting eco-conscious consumers. The key insights include the fact that AI algorithms are used for enhancing segmentation accuracy as it has the capability of grouping the customers based on their eco-friendly behaviour. Machine learning is also used for predicting consumer behaviour towards green products, as it helps in analysing past behaviour of the consumers. The researchers also found out that AI helps in providing real time insights, that helps brands deliver personalised content to their customers, thus promoting sustainable products.

On the other hand, the AI application cannot be regarded as the only factor impacting consumer behaviour in sustainability, the fashion sector has been influenced much. In another stream of research, De Angelis *et al.* (2020) examined the growing importance of sustainability within the fashion sector, when it comes to responding to the increasing demand and pressures with respect to social and environmental responsibility. The researchers added that fashion sector serves as the key contributor to greenhouse gas emissions, which is more than aviation industries and international shipping industries combined. Gen Z and Millennials have realised the importance of sustainability; hence, they are interested in purchasing from the brands who are offering responsibly produced apparels.

Interestingly, psychological factors also impose a great influence over consumer behaviour, as it plays a pivotal role within sustainability choices. In contrast, Amatulli *et al.* (2019) also studied the impact of positive and negative messages on the consumer willingness to engage in the environmentally friendly behaviour. The researchers conducted 4 experiments which depicted the consequences of choosing the green products (positive framing) and those who are not choosing (negative framing). The results of the study indicated that negative framing is more successful in

persuading consumers to buy green products as well as engaging in the environmentally friendly behavior.

Another research article by Muduva and Kiwa (2025) sheds light on the green marketing that also discusses about the promotion of eco-friendly products and sustainable marketing practises. The article discusses about the best strategies which can be used for keeping eagle conscious customers engaged with the help of AI. The key insights include the fact that the success of green marketing depends on understanding consumer behaviour towards sustainability. In this, a significant role can be played by AI, as it offers inside regarding customer attitudes at a granular level. AI can also help in tracking sustainability trends over time, which helps in knowing the consumer preferences in real time. On the contrary, Dixit and Singh (2025) enunciated there are different AI tools which can be used by the marketers, some of it includes predictive analytics and NLP (natural language processing), which are used for creating personalised and eco-friendly marketing message to be delivered to consumers. Goutam *et al* (2025) also found that AI powered recommendation systems can also be used by the companies for the sake of increasing the likelihood of consumers choosing their sustainable product, as these systems offered them the alternatives to the traditional options to be chosen from. The scholarly views discuss priory have clearly indicated the importance of AI usage for sustainable marketing practices and hence, fashion sector in Italy should be examined. The research however, following this foundation delves into the deeper insights as how AI can be leveraged upon and what benefits it will be bringing forward to the fashion brands.

1.1 Research aim

The key focus of the following research is to focus on how AI has been effectively utilised within marketing strategies for promoting sustainable practices in the context of Italian fashion industry. The goal however is to come up with a strategic framework which will help brands in engaging eco-conscious consumers while at the same time encouraging responsible consumption and production patterns, and proving AI vs Human aspect. In addition to it, the area of focus is Italian fashion sector and decision of which has been stemmed from the global influence, environmental footprint and cultural competence, which makes it critical area for the overall sustainable innovation. Contrastingly, the following research is also conducted due to the urgency of addressing environmental degradation, which is caused by fashion industry, fast fashion because

fast fashion significantly contributes to waste, resource depletion and influence. Having said that, AI is significantly reshaping the way businesses used to operate and seeks to impact consumer behaviour. Moreover, the following research is important due to various reasons, for scholars, the study shall contribute the existing literature available on sustainable marketing, AI and its tools and consumer behaviour. Similarly, the research will also be an eye opener for the Italian fashion market, as it will be offering insights as to how the businesses are aligned with the business strategies and sustainability goals, while being competitive in the market. Lastly, the study will also be beneficial for the policy makers as they will be able to look after regulations and initiatives which supports digital innovation for driving environmental responsibility within the key industries.

1.2 Research Question

The research question for the current study will be as follows:

How are AI vs human recommendations used in sustainable initiatives taken by fashion companies in Italy?

The research question has been developed by considering two intersecting global trends. This includes growing concern on sustainability within fashion industry, as well as rapid adoption towards artificial intelligence throughout various industries. Moreover, fashion sector in Italy has been associated with the craftsmanship and tradition which is deeply rooted but now a significant challenge is to keep them aligned with the sustainability goals. Simultaneously, AI and its role has also been increasing and being used for optimising production, customer experiences and supply chains. Theoretically as well, the research draws on particularly, different theories, some of which includes technology acceptance model and theory of reasoned action. They are suitable as they proves consumer behaviour and acceptance of new technology, that will help in explaining AI vs human recommendations.

1.3 Research Objectives

To achieve the aim, the following research objectives has been developed:

- To study the concept of AI and sustainable marketing within Fashion Sector

- To analyse the impact of AI vs human on sustainable marketing strategies in fashion industry of Italy
- To assess how AI personalised marketing techniques imposes an impact over the consumers perceptions and decisions towards eco-friendly fashion products in Italy
- To develop a sustainable marketing framework for using AI in marketing practices, impacting sustainable initiatives and focus on communication within fashion industry of Italy

1.4 Problem statement

Many organisations functioning in the current eon is taking sustainable initiatives, as customers these days are becoming increasingly conscious. In the context of fashion retail sector of Italy, there has been observed an increased demand in the eco-conscious and sustainable products from the consumers, as they are becoming aware of the environmental impact of the purchasing decisions they are taking. As per the statistics by Ruiz (2025), 41% Italians stated that they are ready to make a significant change when it comes to adopting a sustainable lifestyle. Despite of this growing concern from consumers towards sustainability, fashion brands still struggle when it comes to effectively integrating sustainable practices within their marketing strategies. As said by Kulkarni *et al.* (2025), traditional marketing methods have failed to adequately to communicate the true impact of environmental efforts of brands, which has led to lack of trust among the customers and skepticism when it comes to sustainability claims. This is why, fashion industry tends to face this challenge aligning the profitability with sustainability, particularly, when it comes to balancing fast paced fashion cycles with the eco-consciousness.

The problem which the current study examines lies in the gap between the increasing demand towards the sustainable fashion and the ability of the industry in leveraging the technology, especially when AI has taken over for marketing the efforts in an effective way. The study also assess the comparison between AI vs human recommendations, to analyse its impact on purchase intentions. This nevertheless, results in the missed opportunities for keeping eco-conscious consumers engaged, and building the brand loyalty, and as a result driving sustainable future for fashion retail sector within Italy. The following study focuses on the pressing need for developing such a strategic framework which makes the use of AI and ensuring that marketing practices are

not only meeting the eco-conscious customers' expectations but also promoting sustainable practices in a scalable, impactful and transparent manner.

1.5 Research Significance

The research is highly significant because it seeks to address the growing need and focus on sustainable marketing practices within the fashion retail sector in Italy, which is also driven by the increased demand from eco-conscious consumers. Fashion brands, though, are facing significant challenges in terms of effective communication of the sustainable initiatives they have taken and at the same time maintaining trust and loyalty among customers. The study, however, aims to focus on the role of AI in bridging the gap by highlighting sustainable efforts and enhancing overall transparency. Research offers valuable insights for the fashion brands as it tends to depict how they can leverage AI tools for say, supply chain tracking, data analytics and targeted marketing campaigns for aligning the business strategies with the expectations of eco-conscious consumers. The following study also contributes greatly to the broader conversation on the sustainable practices within the fashion sector, advocating for the use of technological innovation for minimizing waste and reducing environmental impact of the fashion industry.

1.6 Outline of the Study

The study, however, will involve different chapters, the description of each is mentioned as below:

- **Chapter 1** introduces the study, which elucidates research objectives and aims, thus offering directions in which the study will be carried out. Also, it will offer a brief background about the study and research significance
- **Chapter 2** reviews scholarly sources and articles by examining the views of other scholars on the given topic can be examined. The articles will be extracted from renowned sources including Emerald Insight, Google Scholar, Jstor and others which have A-category articles shedding light on the topic
- **Chapter 3** offers a direction in which the study will be carried out. This involves peeling research onion layer by layer so that which research methods are to be followed can be examined and data can be collected that way.

- **Chapter 4** reports data analysis. This involves highlighting the efforts of the researcher to portray how well the research objectives are met. This also involves reviewing findings in light with literature.
- **Chapter 5** sums up the entire thesis, as it offers a full fledged conclusion of the overall study. This will also offer recommendations and will highlight the areas for future research.

2 Literature Review

2.1 Introduction

The increasing urgency of the overall climatic change as well as environmental deregulation has enabled the businesses for adopting sustainable practises throughout their operations particularly in the marketing. Consumers these days have become quite conscious when it comes to making purchases that is why they are demanding more responsibility, transparency as well as authenticity from the preferred brand. Having said that, the advent of technology has also made it possible for the businesses to be adaptive and adopt such ways which keeps its customer satisfied. Artificial intelligence, however, serves as a powerful tool which has transformed the marketing strategies in favour of sustainability. This chapter therefore explores the idea of leveraging sustainable marketing and artificial intelligence by contemplating ethical and environmental goals. The chapter will also discuss the theories that back the use of AI in sustainable marketing and its impact on the eco-conscious consumers.

2.2 AI – defined

Artificial intelligence is defined as a computer system that can perform tasks that require human intelligence, for instance, problem solving, learning, and decision making. There are various technologies associated with artificial intelligence some of which include machine learning, predictive analysis, natural language processing etc. These tools are used for various purposes which includes automation, personalization as well as data-driven insights. Within marketing, artificial intelligence can be used for the sake of processing vast amounts of data, which is used for forecasting, delivering tailored content, segment audiences etc. (Chintalapati & Pandey, 2022).

2.3 Sustainable Marketing

Sustainable marketing is also defined by Park *et al* (2022), at the process of promoting, product services as well as brand value which are emphasised on social and environmental responsibility. Back in traditional times, traditional marketing used to prioritise short term gains, whereas sustainable marketing is focused on the long-term value creation for the society, planet and consumers. This approach however also integrates the transparent communication, eco-friendly innovation as well as ethical sourcing. The aim of sustainable marketing is to shift consumer

behaviour towards making them more conscious in their consumption patterns and at the same time making the brand competitive.

2.4 Importance of Sustainability in Marketing

According to Heath & McKechnie (2019), sustainability is no longer an option available rather it is a critical component which impacts consumer trust, long term viability as well as brand reputation. As environmental issues and the awareness is increasing at a faster pace, consumers these days are increasingly prioritising their choices to be sustainable and ethical. This shift however embeds their overall purchasing decisions and making it important for the companies to keep their values and actions aligned with the eco-conscious expectations of their customers. On the other hand, Kemper & Ballantine (2019) enunciated, sustainable marketing helps the brand to give themselves differentiated in the crowded markets by reflecting commitment towards responsible practises search as reducing the carbon footprint, supporting overall social equity and making the use of sustainable materials. Similarly, investor preferences and the regulatory pressures are also pushing the brands towards greater sustainability and transparency disclosures. And if the brands fail to adapt, they are likely to experience reputational damage, reduce share in the market and customer attrition. In addition to it, companies who have successfully embraced sustainability, have fostered strong relationship with their customers, experience increased levels of customer loyalty and attract a segment of value driven customers.

2.5 AI and Marketing

As said by Emon & Khan (2024), Artificial intelligence has, however reshaped marketing by enabling personalization, precision as well as performance at unprecedented scale. In the current times where digital transformation is taking place, AI tools have revolutionised how businesses used to operate and understand their customers. With the help of data mining and predictive analytics, AI can help brands uncover deep insights into the customer preferences, behaviours and trends. This, however, allows the marketers for crafting highly targeted campaigns, optimising messaging and timing and improving the conversion rates, these are the components which are essential in both sustainable and conventional marketing strategies. AI can significantly contribute to marketing: for instance, the use of virtual assistants and chat boards enhances the customer services but real time and allow the brand to send its customers, the personalised responses.

Moreover, recommendation engines which are powered by the machine learning can be helpful in offering product suggestions; as a result, this can improve overall user experience and increase sales. Sentiment analysis, on the other hand, is also helpful for the brands as it enables them to understand the perception of the public and be adaptive towards messaging accordingly. Let's now shed light on the integration of AI with the sustainability goals, where AI has become quite impactful (Hermann, 2023). AI can help in identifying wasteful marketing strategies, can help the brand and optimising resource allocation as well as tracking sustainability metrics in real time. AI is also helpful in helping the brands communicate their eco-friendly initiative in a comprehensive manner, by ensuring the alignment between the two, consumer expectations and claims. It also offers facilitation in the life cycle marketing, as it can predict when the consumers are likely to buy a sustainable product replacement or needs an upgrade (Darban *et al*, 2023). AI personalised marketing is defined as the use of AI in sending marketing messages, product recommendations and consumer experiences based on their preferences. The key benefits of AI personalised marketing includes strong base of customers, satisfaction and engagement as well as improved customer loyalty.

2.6 Theoretical Underpinning

Technology Acceptance Model (TAM)

Technology acceptance theory is one of the greatest theories that explains how users adopt new technologies. This theory is based on the two factors: *perceived ease of use* and *perceived usefulness*. This theory states that users are likely to adopt technology which they find helpful and offers them ease. TAM is also used for predicting user behaviour towards the innovative systems and is relevant towards understanding user acceptance towards AI in the sustainable marketing. The man behind this theory is Davis and was originated in 1989. Perceived ease of use in this story is explained as the degree to which a user considers using a particular technology would require less efforts, whereas perceived usefulness is explained as a degree to which a user considers a particular technology is likely to impact their performance (Taherdoost, 2018). This story is found relevant to the topic under consideration because, it is useful in analysing how the customers under businesses bear artificial intelligence tools within marketing, particularly when promoting the sustainable products. The AI driven marketing solutions is implemented which involves predictive

analytics for analysing waste reduction, energy efficient targeting algorithms, and personalised recommendation to the customers for eco-friendly products, when these are perceived both effective and easily usable in achieving sustainability goals, the adoption of it is likely to increase.

Theory of Planned Behaviour (TPB)

This theory was proposed by Ajzen in 1991. TPB is one of the psychological theories that explains how human behaviour is driven by behavioural intentions. There are three core components which shape these behavioural intentions, including subjective norms, perceived behavioural control and attitude towards behaviour (Sari, 2022). Attitude towards the behaviour involves the negative and positive evaluations of performing a particular behaviour. Within the given context, it is basically the positive response from the end of consumers, towards AI-driven sustainable marketing, that is making the use of AI tools for the sake of identifying eco-friendly products. In contrast, subjective norms are the perceived social pressures for performing or not performing a behaviour.

2.7 Leveraging AI for Sustainable Marketing in Retail Fashion Sector of Italy

The integration of artificial intelligence within the marketing practise has become a pivotal strategy for promoting sustainability. Consumers nowadays are prioritising environmentally conscious products as well as corporate transparency therefore, organisations are also turning towards AI not because of the efficiency rather utilising artificial intelligence for the sake of driving sustainable initiatives. The following section explores the role of AI in sustainable marketing, by focusing on win advertising, product lifecycle management and supply chain transparency (Biswas & Roy, 2018). According to Chatterjee *et al* (2021), AI has played a transformative role when it comes to sustainable product lifecycle management as it helps in the ecofriendly design, these reduction as well as resource maximisation and optimization. Dignum (2020) Stated that AI powered simulations and other related tools have helped businesses in optimising material use as well as improve the product sustainability. By implementing the predictive analytics, companies can perform better demand forecast, thereby also reducing waste and overproduction. Legend has also helped the businesses in planning the end-of-life state of the products, which includes reusing options and recycling aligned with the principles of circular economy.

Green advertising on the other hand, has revitalised through the ability of AI to target audiences based on the behavioural and psychographic data. AI technologies, however, allow the market years to tailor the messages which are in line with the sustainability values of an individual and imposes a significant impact on the green campaigns. Moreover, brands are also making the use of Geo targeted advertising that also allows them to highlight region specific initiative of sustainability, which not only improves the trust but also keeps the customers engaged. The application of these into the real world also validates the potential of AI in green marketing. Example of Unilever can be quoted here as the company has made the use of AI sentiment analysis, it has defined its messages towards biodegradable cleaning products (Dwivedi *et al*, 2021). On the other hand, IKEA has also contemplated AI driven platforms, it helped it to prioritise sustainable options which has impacted its purchase decisions at the point of sale. Patagonia however has also deployed machine learning within its e-mail marketing for promoting reuse and repair programme, which has reinforced its sustainability mission. The example discussed, clearly explains the alignment of AI with branding, consumer values and messaging around sustainability.

Similarly, supply chain transparency is also another critical area where contribution of AI has been significant when it comes to sustainability. As stated by Huang & Rust (2021), AI in conjunction with the blockchain helps in the real time tracking of materials, from its sourcing to shelves. This not only allowed the brands to verify the ethical sourcing, it also enables them to monitor the carbon emissions and detect any anomalies suggesting compliance breaches or greenwashing. There are carbon tracking tools as well which are AI powered, it helps in the product specific emission data, they are also capable of facilitating accurate environmental reporting. Just within sustainability is an important claim which is essential for the customer buy-in. Platforms which are AI driven can help in validating eco-labels, helps in monitoring environmental certifications etc. Digital labelling systems as well as chatbots used as a transparent communication tool, which keeps the customers more educated about the impact of the product. These technologies, however, help in bridging the information gap and helps in fostering the long-term brand loyalty from the end of eco conscious customers.

The fashion sector in the Italy is however known for its luxury brands as well as the global influence it has had on the overall fashion market, this very sector is also under the scrutiny regarding the sustainable practises. AI is one of the key enablers which is aligned the fashion

marketing with the eco-conscious consumer values and so do the human recommenders. Predictive analytics helps the fashion retailers in understanding the shift in the consumer sentiments, which has shaped around the sustainability also enables the brands to consider tailoring their messages and campaigns resonating with the environmentally aware customers. On the other hand, Disperati & Cianfanelli (2024) has stated Italian fashion retailers have however leveraged AI-driven personalization engines, which helps in recommending sustainable products based on consumer preferences. By going through the consumer archives which involves purchase history and their browsing patterns, AI however can also suggest eco-friendly alternatives for example organics fabrics and launching of the recycled material collections. This as a result will help in nudging consumers towards the adoption of greener choices without sacrificing their own style. Similarly, AI tools can help end dynamically addressing the campaigns for emphasizing sustainability performance of the retailers, such as transparency in supply chain disclosures, reduce carbon footprints etc. these have become increasingly important for customer loyalty within European markets.

2.8 AI vs Human Recommendations in Marketing

Artificial Intelligence (AI) has become a dominant force in digital marketing, particularly for its ability to deliver personalized recommendations at scale. AI tools leverage user behavior data, style preferences, and sustainability metrics to suggest eco-friendly products, such as items made from organic cotton or recycled polyester. Studies show that AI enhances perceived utility by offering relevant and timely suggestions, especially to consumers who are already inclined toward environmental sustainability (Shukla, 2024). These recommendations often include contextual explanations—like reduced carbon footprints—which are shown to improve decision confidence and purchase intentions (Mumtaz et al., 2025). Furthermore, Ashok and Qureshi (2025) found that AI-based fashion assistants embedded in augmented reality applications not only improve shopping experiences but also lead to higher consumer satisfaction and repeat engagement. However, trust in AI is still evolving. While many eco-conscious consumers appreciate the data-driven insights of AI, some remain skeptical about whether algorithms can fully grasp personal ethical preferences. Yet, among digitally native consumers, especially Gen Z, AI suggestions are increasingly trusted—often more than human ones—for functional and sustainability-aligned choices.

Despite the advances in AI, human advisors continue to play a pivotal role, particularly when emotional engagement and trust are required. Human recommenders, such as in-store assistants or influencers, are perceived as more capable of understanding nuanced personal and ethical considerations. According to Vetrivel et al. (2025), human agents excel in conveying empathy, building rapport, and tailoring advice to a consumer's values—attributes especially important in eco-conscious fashion, where identity and ethics often intersect. Unlike AI, human recommenders can interpret non-verbal cues, offer moral reasoning, and engage in persuasive storytelling, all of which contribute to stronger intention to purchase sustainable products. Spais and Chrysochoidis (2025) argue that human interaction enhances the credibility of green claims, making sustainability more "real" for consumers. Xie (2025) supports this view, emphasizing that human sources—especially those perceived as experts or aligned with environmental movements—hold significant sway over ethically inclined consumers, especially in contexts where greenwashing concerns are high.

Consumers with strong pro-environmental commitments—those who feel responsible for their impact on the planet—are more likely to choose sustainable products, even at higher costs. This relationship between environmental identity and eco-purchase behavior is well established in sustainability literature. Kulikova and Aliteesa (2024) found that individuals who support renewable energy, carbon footprint reduction, and recycling are significantly more inclined to act on their beliefs by purchasing eco-conscious fashion. Similarly, studies across Europe, including Italy, confirm that moral norms, perceived responsibility, and willingness to pay premiums for green products are core predictors of sustainable fashion adoption (Mumtaz et al., 2025; Spais & Chrysochoidis, 2025). The Italian fashion market, known for its luxury and craftsmanship, is also increasingly recognizing eco-ethical purchasing patterns. When AI or human recommenders align their messaging with these values, environmentally committed consumers are more likely to convert intention into action. Therefore, environmental commitment acts as a moderator, amplifying the effects of both AI- and human-powered personalized recommendations. According to Vetrivel et al. (2025), humans outperform AI in domains requiring moral sensitivity or emotional resonance, such as sustainability. Human agents can explain environmental benefits through storytelling, reinforcing brand values and perceived eco-authenticity. Xie (2025) emphasizes that consumers often trust peer recommendations or ethical experts over AI, particularly when evaluating if a product is *truly sustainable* or *greenwashed*. Shukla (2024) finds

that AI systems, when trained on consumer sustainability goals, can increase engagement and purchase likelihood, especially when consumers are offered detailed **eco-impact** information. Moreover, Mumtaz et al. (2025) found that AI assistants offering sustainable fashion suggestions based on previous buying habits or style preferences were viewed as efficient, but some consumers still questioned AI's depth in understanding ethical nuance—a key factor that may temper reliance.

2.9 Strategic Framework for Eco-Conscious Consumers

The fashion industry, which Italy is long admired globally, was also influenced and disrupted by the COVID-19 crisis. In such situations, the fashion retailers in Italy experience a drop in the sales level, international demand was also influenced and small and medium sized fashion retailers also faced major financial strain. There was a severe challenge which the fashion industry faced, some of which includes fragmentation, as the fashion sector is equipped with small and family-owned businesses, which makes it difficult for scaling, digitizing and competing globally. Another challenge was in terms of sustainability pressure where, consumers and regulators expected fashion brands to consider sustainable production, but there were many Italian brands which lagged the green practices and failed to be adaptive (McKinsey & Co, 2025). As stated by Longoni & Cian (2020), AI has and brought transformation in marketing as it has enabled hyper personalization, automation and predictive analytics. Within the sustainability context, AI can be strategically integrated within the marketing framework for enhancing green value proposition, optimising supply chains as well as reducing waste with the help of precision targeting. Some of the emerging models for a sustainable marketing framework is however aligned with the artificial intelligence capabilities with social and ecological goals, the emphasis of which is on the integration of sustainability KPI's within marketing decision making. To target eco-conscious consumers, it is essential to gain full-fledged understanding towards the behavioural psychographic data that reflects their green values. AI tools including machine learning algorithms and natural language processing can help in identifying environmentally responsible consumer segments, add these to the capability of analysing purchase history, social media and sentiment data. At one end where AI offers marketing efficiency, on the other hand it also raises some serious ethical concerns specially regarding the data privacy, transparency and algorithm bias. In sustainable marketing, these issues are however magnified due to the moral expectations of the customers who are equally conscious (Kietzmann, Paschen, & Treen, 2018).

Consumer trust is regarded as one of the critical factors in AI driven sustainability campaigns. There are mixed reviews of the scholars available on this. Some say that there are consumers who appreciate the role of AI in promoting transparency which includes dragon carbon footprints, whereas other consumers express skepticism about the decision made by the machine in the ethical domains. There are different models which helps in assessing the attitude of customers towards the AI in marketing. This also includes a model named as technology acceptance model and unified theory of acceptance and use of technology (Baruno & Indrasari, 2025). To explain this, example of different brands can be discussed here, some of which include Tesla. Tesla makes use of AI, for personalising in app and e-mail communication with its customers who prefer green products, which as a result, aligns AI driven data with energy savings incentives. Another example to be quoted here is of Patagonia which has also leveraged the use of AI for optimising its overall supply chain and has promoted its “Worn Wear” program, with the help of predictive analytics for suggesting recycling and reusable alternatives to its new products. AI has also been effectively used in creating equal conscious product recommendation because of carbon footprint analysis, user behaviour as well as material sourcing data. Within the advertising perspective, programmatic AI tools can target the users based on sustainability preferences, which are known from their browsing behaviour and predictive personas.

2.10 Research Gap

Despite the increasing interest by brands regarding the use of AI for promoting sustainability within marketing, there still exists limited research which has shed light on leveraging AI for sustainable marketing, particularly targeting the eco-friendly consumers. The research gap which the following research study explores is clear in a way, the studies reviewed have covered the domain of AI and sustainability but there is less or no focus on the fashion industry in Italy. Having said that, the following study shall unfold this gap and will be entirely focus on how fashion brands in the Italy are contemplating the use of AI for promoting sustainable and impacting the eco-conscious behaviour of the consumers positively. A study by Amatulli *et al* (2021) has also focused on assessing impact of marketing communication strategy of a luxury hotel on the consumer willingness for booking a room. The results indicated that consumers are more concerned about the dispositional environmental impact and article however contributes to the sustainable luxury tourism industry. On the other hand, De Angelis *et al* (2020) also focused on assessing the key

issue in fashion industry that is sustainability. The study's findings revealed that sustainability is appealing when consumer prefers luxury goods for personal style while those who tend to buy luxury goods for the status prefers sustainability in fast fashion brands. Considering these studies as well, they have covered the sustainability aspect in different industries but specifically analysing it in the Fashion sector of Italy is nowhere found, which however, will be the core focus of the following study.

2.11 Research Hypothesis and Conceptual Framework



Figure 1: Research framework

This study employs a parallel mediation model to examine how AI-generated and human-generated recommendations influence consumers' pro-environmental commitment. In this model, Purchase Intentions (X) serve as the independent variable, representing the consumer's intention to make a purchase, likely related to environmentally sustainable products. These purchase intentions affect the consumer's subsequent choices, which may lead to stronger pro-environmental behavior. The study introduces two parallel mediators: AI Recommendations (M1) and Human Recommendations (M2). AI-generated recommendations are typically based on data and algorithms, influencing consumers through logic and efficiency, potentially guiding them toward more sustainable products. On the other hand, Human Recommendations carry an emotional and relational aspect, with personal or social influence encouraging environmentally friendly choices. Both mediators—AI and human—independently shape the relationship between purchase intentions and Pro-environmental Commitment (Y), which represents the consumer's level of commitment to sustainable behaviour. By exploring these dynamics, the study aims to understand

which type of recommendation has a stronger impact on encouraging pro-environmental actions and how they contribute to the decision-making process.

H₁: AI-powered personalized (vs. human recommendations) increase eco-conscious consumers' purchase intention in Italy

H₂: Consumers Pro- Environmental Commitment have a positive impact on purchase intentions of eco-conscious consumers in Italy

2.12 Summary

To summarise the overall discussion conducted above, it can be said that climate change and environmental deregulation have led businesses to adopt sustainable practices, particularly in marketing. Consumers demand responsibility, transparency, and authenticity from brands. AI has revolutionized marketing by enabling hyper-personalization, automation, and predictive analytics. In sustainability, it can enhance green value propositions, optimize supply chains, and reduce waste. However, ethical concerns about data privacy and algorithm bias persist. Brands like Tesla and Patagonia use AI for personalized communication and sustainability recommendations.

3 Research Methodology

3.1 Introduction

The following study explores how the use of AI can be leveraged it wasn't the marketing strategy for driving sustainable practises and appeal eager conscious customers but in the context of Italy. The following chapter will unfold the use of these are strategies through which data will be collected. In the current scenario, what types of data will be used that is primary and secondary as it will offer insight into the effectiveness of AI driven marketing for promoting environmental responsibility. The goal, however, is to develop a strategic framework which can be used by different brands particularly in the fashion industry for keeping their eco conscious consumers engaged through AI powered marketing techniques. The research methodology is given as below:

3.2 Research Approach

Research approaches are of two types which includes inductive and deductive. Inductive approach is used well the study is based on secondary data or qualitative data or it also involves using primary data to with the help of interviews (Gupta & Gupta, 2022). For the following study, deductive approach will be used because it will help in building on the existing theories which relates to sustainability, role of AI and consumer behaviour. The research hypothesis has also been developed, which can easily be tested with the help of deductive approach, as both types of data will be collected, involving permit data with the help of surveys and secondary data through existing literature, case studies and reports. By deploying this very research approach, study seeks to offer insights into the association between the consumer sustainability choices and AI technologies based on data-driven analysis.

3.3 Research Philosophy

The research philosophies which are used in a particular research study involves positivism an interpretivism. East philosophy has its own significance and is used differently based on the topic under study. Positivist philosophy focuses on observations, quantifiable data as well as objective analysis (Verma, Verma & Abhishek, 2024). In the current scenario of AI and marketing, positivism research philosophy is suitable because it focuses on the measurable outcomes including consumer behaviour, AI driven marketing campaigns and their success in promoting

sustainability. The selective philosophy however helps in analysing the influence of AI on consumer decision making about the eco-friendly product and services. To justify this further, the research will be heavily relying on the statistical techniques for measuring the impact of AI marketing tools on the consumer behaviour, also enjoying the fact that the conclusions are rooted in the data instead of subjective opinions. The study will be utilising different statistical test, which can easily be performed when the study follows a positivism research philosophy.

3.4 Research design

The research onion model given by Saunders at al is peeled layer by layer, another important layer is of research design. Commonly used research designs are exploratory and explanatory, each has its own significance. When the researcher intends to make the use of something or wants to explore something new out of the existing phenomena, the use of exploratory design is made (Verma, Verma & Abhishek, 2024). However, if the researchers intend to explain the existing variables, and those variables are present in the existing environment in which the study is conducted, such a study uses explanatory research design. Having said that, the following study makes the use of explanatory research design as the variables explained are existing in the environment in which the study is conducted. In contrast, this is further divided into the quantitative or qualitative research design, and out of this, the following study utilises quantitative research design as questionnaire survey has been conducted from the consumers. Structured survey has been used for collecting data from the participants regarding the awareness of AI based sustainable marketing, and attitude of consumers towards eco-friendly products.

3.5 Data Collection Method

Data collection methods used in the research studies involved primary and secondary data. In the following study, both types of data have been collected. According to Dubey & Kothari (2022), primary data is the one which requires a researcher's efforts in its collection because it is not readily available however, secondary data can be searched over Internet, as it is readily available and involves reports, views of different scholars and websites. Primary data for the current study has been collected with the help of structured questionnaire, Because the sample size is 200 to 250 eco-conscious customers from the fashion industry of Italy. To shed light on the data collection through primary sources, it can be said that a liquid scale questionnaire will be used, which will

have close ended questions on variables like consumer behaviour and attitudes, use of AI in marketing which promotes sustainable practices. The factors explored in such context involves trust in AI, impact of AI on consumer purchase decisions and awareness of eco-friendly marketing. Secondary data has been collected through different sources and scholarly views. For searching research articles, the use of Google scholar and Emerald insight has been used for digging down A-category journal articles and present insights in a comprehensive manner.

3.6 Sample size and sampling Technique

Sample size in a particular research study is explained as a group of people drawn from a large population, or it is also known as subset of given population selected for the study (Dubey & Kothari, 2022). For the current research study, the sample size has been 200 to 250 customers who prefer ecofriendly products. This will help in examining to what extent fashion companies in Italy has been successful in leveraging AI for the use of sustainable marketing strategies.

On the other hand, to select many respondents from the given population, it is essential to the researchers follow a particular sampling technique. There are two types of sampling techniques which includes probability and non-probability sampling technique. Each technique has its own importance and is used differently in the research. For the following research, non-probability sampling technique has been used, because the researcher will draw a sample out of the entire population, and will assume them the true representative of the population. Similarly, non-probability sampling technique is further divided into convenient sampling, quota sampling, but the following research makes the use of convenience sampling as 200 to 250 customers will be surveyed therefore researcher will be adopting a convenience-based approach and will get the questionnaire filled on first come first basis.

3.7 Data Analysis

Once the data is collected, it is essential to analyse it with the help of different techniques so that it can be presented in the comprehensive manner. In such cases, primary and secondary data are analysed differently. If the study follows quantitative research method, the data analysis involves using a statistical software and running different tests on the data collected from the respondents, whereas, if the nature of study is qualitative research, thematic analysis is being used for presenting

the secondary data. For the current research, quantitative research method is being used, therefore SPSS will be contemplated. As research has defined variables and relationship among them as well as develop the hypothesis, therefore, different statistical tests will be run, this includes reliability test, correlation test and regression analysis. However, responses will be presented in the graphical format so that news of the customers can be presented meaningfully. The following research also makes the use of secondary data, which is why, different themes are developed and presented in the literature review section.

3.8 Ethical considerations

Ethical considerations are an important part in a research study, because these considerations highlight the standard operating procedures through which a study must pass. In the given research study, the researcher will make sure that confidentiality is followed. This means that respondents' personal information shared during the survey will not be leaked or used for any other purposes except the research. Also consent of the research participants is another important consideration: Participants will be asked to sign a consent form prior to proceeding with the survey questions, so that it can be made sure that their consent is free and they are participating in the survey with their free will. The researcher will also make sure that once the data collected is used for the study purposes, it will be saved in a safe drive and will also be delete it once the research study is completed.

3.9 Summary

To conclude, it can be said that the research will be following deductive research method and will be explanatory in nature because it involves collection from the quantitative research methods. The sample size will be 200 to 250 consumers who are ecofriendly for analysing the fact how AI is leveraged in driving sustainable practises and proposing A strategic framework for the ecofriendly consumers. Moreover, the data collected shall be analysed with the help of SPSS which is a statistical software used for presenting data through statistical test.

4 Data Analysis

4.1 Introduction

This chapter presents the findings and statistical analysis of the data collected to explore how artificial intelligence (AI) can be leveraged in marketing to support sustainable practices within the Italian fashion industry. The study specifically investigates the effectiveness of AI-generated versus human-generated recommendations in influencing eco-conscious consumer behavior. In alignment with the research objectives, this chapter examines how different types of recommendations (AI vs human) affect consumer attitudes, purchase intentions, and sustainable decision-making. Additionally, it evaluates the moderating effects of eco-consciousness and trust in AI on these relationships. To capture the complexity of these interactions, the study employs PROCESS Macro models to test for moderation, mediation, and conditional effects within the proposed strategic framework. Descriptive statistics, reliability tests, and inferential analyses — including independent samples t-tests, ANOVA, and regression modeling — are used alongside PROCESS Macro Models (Model 1) to test the hypothesized relationships. These results provide valuable insights into the role of AI in sustainable fashion marketing and the psychological mechanisms that influence consumer responses. Below is the list of hypotheses being used for the research purpose.

H₁: AI-powered personalized (vs. human recommendations) increase eco-conscious consumers' purchase intention in Italy

H₂: Consumers Pro- Environmental Commitment have a positive impact on purchase intentions of eco-conscious consumers in Italy

4.2 Statistical Tools and Software

The data were analyzed using IBM SPSS Statistics (Version 29) in conjunction with the PROCESS Macro by Hayes (2022), specifically employing **Model 4** to test parallel mediation effects. The analytical procedure began with preliminary data screening, followed by descriptive statistics and reliability analysis to ensure the internal consistency of the measurement constructs. Cronbach's alpha was computed separately for each scale, confirming acceptable reliability across all

variables. The PROCESS Macro (Model 4) was employed to investigate the direct and indirect effects of purchase intentions (PI) on consumers' pro-environmental commitment (CPE), mediated by AI recommendations (AIR) and human recommendations (HR). All statistical results are presented through tables, confidence intervals, and interpretative summaries to illustrate the relationships among variables and provide empirical support for the proposed hypotheses. These findings directly inform the development of a strategic framework for leveraging AI in sustainable fashion marketing, particularly within the Italian context.

4.3 Preliminary Analysis

To prepare the dataset for analysis, the independent variable pro-environmental commitment was computed by averaging multiple items rated on a 5-point Likert scale, ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). This composite score represented each participant's level of commitment to environmental values. The key mediators, AI vs Human recommendation type, was a categorical variable indicating whether participants received AI-generated or human-generated marketing messages. To facilitate moderation analysis using the PROCESS Macro, this variable was dummy-coded such that AI recommendations were coded as 1 and human recommendations as 0. The dependent variable, purchase intentions of eco-conscious consumers, was also measured using multiple Likert-scale items, and a composite score was computed by averaging the responses. All constructs were properly labeled and coded in SPSS, and reverse-coded items (if present) were adjusted before analysis. These prepared variables were then used in descriptive statistics, reliability testing, and further inferential analyses, including moderation and mediation testing using PROCESS Macro Model 4.

4.3.1 Skewness and Kurtosis

The skewness and kurtosis values for all the items measuring constructs such as pro-environmental commitment, AI and human recommendation reliance, and purchase intentions were examined to assess normality. All skewness and kurtosis statistics fell within the acceptable range of ± 2 , as suggested by Curran et al. (1996), indicating that the data are approximately normally distributed. The skewness values across most items were slightly negative, particularly for items related to environmental concern (e.g., "I believe fashion businesses should adopt renewable energy" with skewness = -1.505), and purchase intentions (e.g., "I will be buying the recommended fashion

products” with skewness = -0.630). This slight negative skew suggests a general tendency among participants to lean toward higher levels of agreement, which is consistent with socially desirable pro-environmental attitudes. Regarding kurtosis, a few items showed moderate positive kurtosis (e.g., kurtosis = 3.117 for the item on renewable energy use by businesses), indicating that responses were slightly more peaked around the mean. However, these do not represent severe departures from normality. Given that all values remained within acceptable thresholds, the data distribution is deemed suitable for conducting parametric statistical analyses, including ANOVA, regression, and moderation analyses using the PROCESS macro.

Descriptive Statistics

	Skewness Statistic	Kurtosis Statistic
I feel personally responsible for supporting eco-conscious fashion choices.	-.981	2.145
I would pay more for the eco-friendly fashion products.	-.594	-.382
I would prefer paying more for green fashion products as I believe in reuse and recycling.	-.526	-.483
I believe fashion businesses should adopt renewable energy in their operations.	-1.505	3.117
I actively support fashion retailers who work on minimizing their carbon footprint.	-.697	-.124
AI recommenders can understand my sustainability preferences regarding fashion products?	-.590	.388

AI recommenders typically provide personalized advice to me regarding my fashion purchases?	-0.585	-0.431
How likely are you to rely on AI more than human suggestions when shopping for sustainable fashion?	-0.774	-0.218
i) How likely are you to follow the suggestions provided by the AI assistant when considering purchasing sustainable fashion products?	-1.139	1.161
ii) How likely are you to rely on AI recommendations that align with your sustainability goals?	-1.033	.824
iii) How likely are you to use the AI assistant again for offering you future fashion shopping suggestions?	-0.870	-0.109
Human recommenders can understand my sustainability preferences regarding fashion products.	.330	-0.957
Human recommenders typically provide personalized advice to me regarding my fashion purchases.	-0.080	-0.978
How likely are you to rely on human more than AI suggestions when shopping for sustainable fashion?	.153	-0.783
i) How likely are you to follow the suggestions provided by this individual when considering purchasing sustainable fashion products?	-0.116	-0.984
ii) How likely are you to rely on this individual's recommendations that align with your sustainability goals?	-0.043	-1.029
iii) How likely are you to use this assistant again for offering you future fashion shopping suggestions?	-0.376	-0.552

I will buy the recommended fashion products.	-.630	.193
My intention to purchase a particular eco-conscious fashion item will be strong.	-.831	.981
I will choose eco-friendly products over non-eco-friendly fashion products.	-1.355	3.208
The environmental impact of a fashion product influences my purchase decisions greatly.	-1.099	1.341

Table 1: Descriptive Statistics

4.4 Descriptive Analysis

To ensure the reliability and validity of the data, a careful screening process was performed. First, low-quality or incomplete responses were eliminated. A few questionnaires were excluded due to partial completion or the presence of extreme values, resulting in a final dataset of **256 valid responses** for subsequent analysis.

4.4.1 Missing Values

No missing values were identified in the dataset. This was ensured using a forced-response format in the online survey, which required participants to answer all items before proceeding. As a result, the final dataset was complete, and no data imputation procedures were necessary.

4.4.2 Outliers

Outliers were identified using the stem-and-leaf plot method in SPSS, which allowed for visual detection of unusual or extreme values. A few responses exhibiting abnormally high or inconsistent patterns were removed during the data cleaning process to maintain the integrity of the dataset. Following this screening, a total of 256 valid cases remained for further analysis, all falling within acceptable ranges for statistical testing.

4.4.3 Normality Check

Normality of the data was assessed through histograms, normal probability (P–P) plots, and examination of skewness and kurtosis values. All variables displayed skewness and kurtosis within the acceptable range of ± 2 , indicating that the data approximated a normal distribution. This satisfies the assumptions required for conducting parametric statistical procedures, including ANOVA and regression-based analyses using the PROCESS Macro. The dataset was thus deemed suitable for further inferential analysis.

4.4.4 Histogram and P-plots

The histogram of standardized regression residuals (Figure 4.1) displays an approximately normal distribution with a slight negative (left) skew. The majority of the responses are clustered around the center, with the curve forming a near-symmetrical bell shape. This suggests that participants generally reported **moderate to high purchase intentions** for sustainable fashion products. The absence of extreme deviations and the smooth distribution provide evidence in support of the **normality assumption**, which is crucial for valid results in regression and moderation analyses.

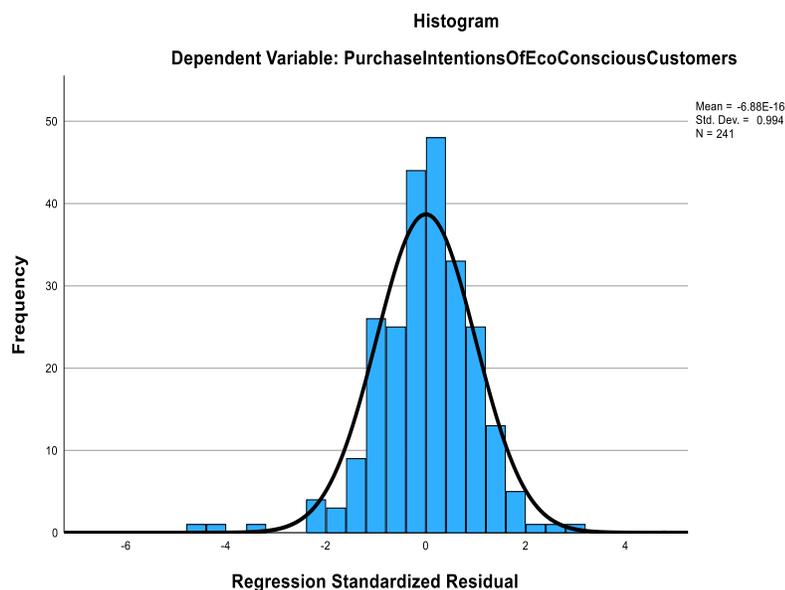


Figure 2: Histogram

The Normal P–P Plot (Figure 4.2) further confirms this conclusion. The data points align closely with the diagonal line, indicating that the standardized residuals are normally distributed. Minor deviations at the lower and upper ends are within acceptable limits, and the plot does not reveal any significant distortion in the data. This graphical evidence validates the use of parametric techniques, such as moderation analysis via regression, using the PROCESS Macro.

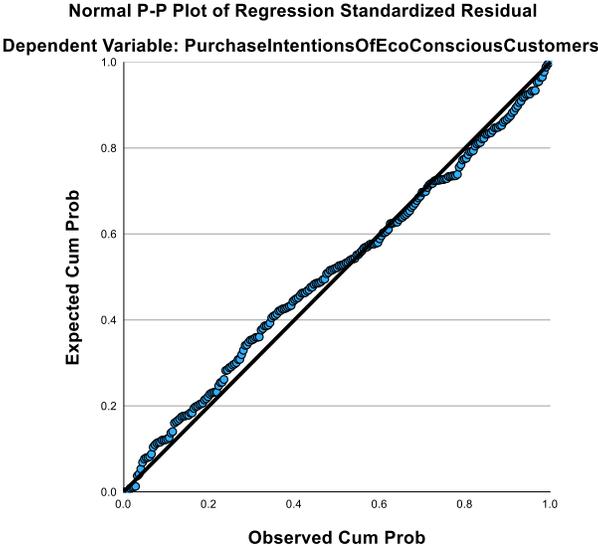


Figure 3: Normal P–P Plot

Lastly, the scatterplot of standardized residuals versus standardized predicted values (Figure 4.3) was examined to assess the assumption of linearity and homoscedasticity. The plot shows that residuals are randomly scattered around the horizontal axis, with no clear pattern or funnel-shaped distribution. This suggests that the variance of errors is homogeneous across the predicted values (i.e., no heteroscedasticity), and the relationship between variables is likely linear. While a few outliers appear in the lower left and upper right quadrants, their distribution is not systematic and does not significantly violate regression assumptions.

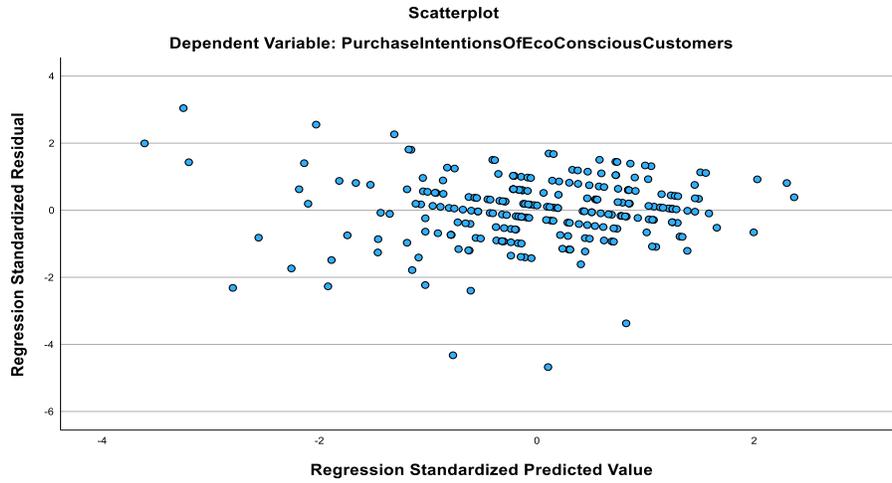


Figure 4: Scatterplot of standardized residuals versus standardized predicted

4.4.5 Regression Analysis

To investigate the predictive effects of pro-environmental commitment, AI recommendations, and human recommendations on the purchase intentions of eco-conscious consumers in the Italian fashion industry, a standard multiple regression analysis was conducted using SPSS.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.325 ^a	.606	.098	.68065

a. Predictors: (Constant), AIRvHR, PI

b. Dependent Variable: CPE

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.048	2	6.524	14.082	<.001 ^b
	Residual	110.263	238	.463		
	Total	123.311	240			

a. Dependent Variable: CPE

b. Predictors: (Constant), AIRvHR, PI

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.428	.271		8.953	<.001
	PI	.321	.067	.301	4.794	<.001
	AIRvHR	.018	.015	.074	1.175	.024

a. Dependent Variable: CPE

Table 2: Regression analysis

R^2 (R-Square) = 0.606: This means that the model explains 60.6% of the variance in CPE.

Adjusted R^2 = 0.098: The adjusted R^2 is slightly lower than R^2 and accounts for the number of predictors in the model. It suggests that the inclusion of PI and AIRvHR helps explain the variability in CPE but there's still a significant amount of unexplained variance.

Standard Error of Estimate = 0.68065: This value indicates the standard deviation of the residuals, or the average distance between the observed and predicted values of CPE. A relatively larger standard error implies a moderate level of deviation from the predicted values.

The ANOVA table shows that the overall model is statistically significant. $F\text{-value} = 14.082$ and $\text{Sig.} < 0.001$: This indicates that the model, as a whole, significantly explains the variance in CPE. In other words, at least one of the predictors (PI or AIvsHR) is contributing meaningfully to the explanation of CPE.

The coefficients table provides more detailed insight into how each predictor affects CPE:

Constant (Intercept) = 2.428: This represents the baseline or starting value of CPE when both PI and AIvsHR are zero. This means that if a consumer had no Purchase Intentions and the AIvsHR recommendation was neutral, their baseline CPE would be 2.428.

Purchase Intentions (PI):

- Unstandardized Coefficient (B) = 0.321: This indicates that for each one-unit increase in PI, CPE is expected to increase by 0.321 units, holding AIvsHR constant. This means that the more a consumer intends to purchase eco-friendly products (higher PI), the more likely they are to demonstrate pro-environmental behavior (higher CPE).
- Standardized Coefficient (Beta) = 0.301: This standardized value helps compare the relative importance of PI compared to other predictors. Since PI has the highest Beta value, it suggests that PI is the most influential predictor of CPE in the model. The effect is statistically significant ($\text{Sig.} < 0.001$), meaning PI is a strong and reliable predictor of CPE.

AI vs Human Recommendations (AIvsHR)

Unstandardized Coefficient (B) = 0.018: This coefficient shows the effect of AIvsHR on CPE. For each one-unit increase in the AIvsHR recommendation, CPE is expected to increase by 0.018 units. While this is a positive effect, the magnitude is much smaller than PI. However, it's important to note that AIvsHR has a statistically significant effect on CPE since the Sig. value is 0.0241, which is below the commonly used threshold of 0.05. This suggests that AI-generated recommendations (compared to human-generated recommendations) do influence pro-environmental commitment, though the effect is smaller.

With the significant effects of both PI and AIvsHR, the regression equation becomes:

$$CPE=2.428+0.321\times PI+0.018\times AIvsHR$$

This equation suggests that Purchase Intentions (PI) is the stronger predictor of Consumer Pro-Environmental Commitment (CPE), with each unit increase in PI leading to a 0.321-unit increase in CPE. Meanwhile, AI vs Human Recommendations (AIvsHR) also has a positive effect, but the influence is smaller, with each unit increase in AIvsHR leading to a 0.018-unit increase in CPE.

The statistically significant impact of PI on CPE shows that consumers who have stronger purchase intentions for eco-friendly products are more likely to exhibit pro-environmental behaviors. PI plays a key role in driving consumers' environmental commitment. AI vs Human Recommendations also shows a significant influence on CPE, albeit weaker than PI. This indicates that AI-generated recommendations do indeed affect consumer behavior towards more environmentally conscious choices, but their effect is not as powerful as Purchase Intentions. Overall, the analysis confirms that both PI and AIvsHR significantly contribute to explaining CPE, with PI having the larger effect. The model suggests that increasing consumers' purchase intentions and providing effective AI-generated recommendations can be effective strategies for promoting pro-environmental commitment.

4.4.6 Correlation Analysis

4.4.6.1 Correlation with Purchase Intentions

		Correlations			
		PurchaseIntentionsOfEcoConsciousCustomers	ConsumersProEnvironmentalCommitment	AIRecommendations	HumanRecommendations
PurchaseIntentionsOfEcoConsciousCustomers	Pearson Correlation	1	.322**	.205**	.144*
	Sig. (2-tailed)		<.001	.001	.025
	N	244	244	243	242
ConsumersProEnvironmentalCommitment	Pearson Correlation	.322**	1	.076	.121
	Sig. (2-tailed)	<.001		.225	.054
	N	244	256	255	254
AIRecommendations	Pearson Correlation	.205**	.076	1	.028
	Sig. (2-tailed)	.001	.225		.660
	N	243	255	255	253
HumanRecommendations	Pearson Correlation	.144*	.121	.028	1
	Sig. (2-tailed)	.025	.054	.660	
	N	242	254	253	254

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 3: Correlation

Pro-Environmental Commitment (r = .322, p < .001)

A statistically significant and positive correlation was found between pro-environmental commitment and purchase intentions. This indicates that consumers with stronger environmental values are more likely to demonstrate higher purchase intentions toward sustainable fashion. The strength of the correlation is **moderate**, supporting the hypothesized relationship between consumer values and sustainable consumption.

AI Recommendations (r = .205, p = .001):

Purchase intentions were also positively and significantly correlated with AI-generated recommendations. This suggests that exposure to AI-driven marketing communications increases the likelihood of eco-conscious consumers expressing stronger purchase intentions. Although the relationship is weaker than that of pro-environmental commitment, it remains meaningful and statistically significant.

Human Recommendations (r = .144, p = .025):

Human-generated recommendations showed a positive but relatively weak correlation with purchase intentions. While statistically significant, the small effect size implies that human recommendations are less influential in shaping purchase intentions compared to pro-environmental values and AI recommendations.

4.4.6.2 Correlation Among Independent Variables

Pro-Environmental Commitment and AI Recommendations (r = .076, p = .225):

The relationship between pro-environmental commitment and AI recommendations was positive but not statistically significant. This indicates that environmentally committed consumers are not necessarily more (or less) influenced by AI-based recommendations, suggesting the effects of AI messaging operate independently of baseline environmental values.

Pro-Environmental Commitment and Human Recommendations (r = .121, p = .054):

A weak, non-significant correlation was observed between pro-environmental commitment and human recommendations. This suggests that consumers' environmental values are not strongly aligned with the influence of human-generated marketing messages.

AI Recommendations and Human Recommendations (r = .028, p = .660):

No significant relationship was observed between AI- and human-generated recommendations. This independence implies that the effects of these two recommendation types are distinct, and one does not necessarily substitute or reinforce the other.

4.5 Demographic Analysis

	Age	
	N	%
Under 20	15	5.9%

21-30	161	62.9%
31-40	67	26.2%
41-50	10	3.9%
Above 50	3	1.2%

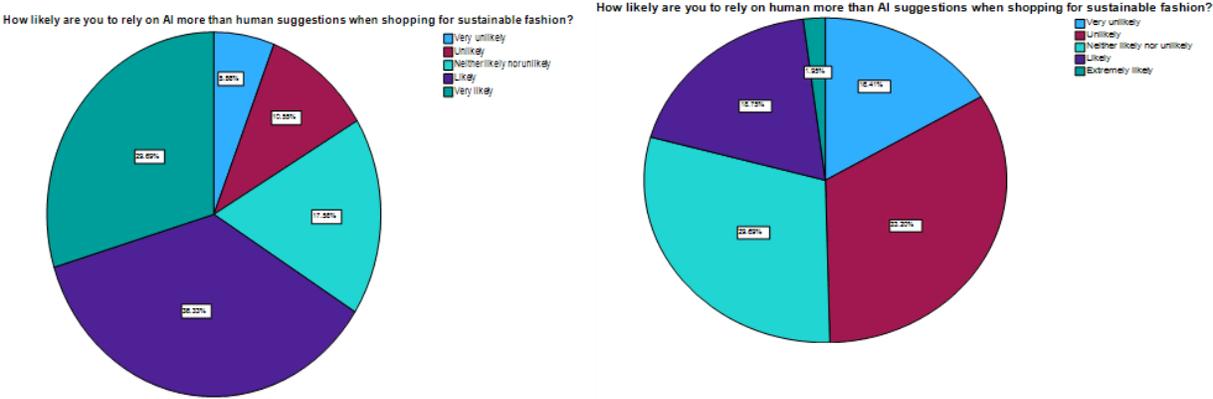
The age distribution of the respondents is presented in Table below. Most participants fell within the 21–30 age group (n = 161, 62.9%), indicating that younger adults represent the dominant consumer segment in this study. This is followed by respondents aged 31–40 years (n = 67, 26.2%), who also make up a considerable proportion of the sample. Smaller groups included participants aged under 20 (n = 15, 5.9%) and 41–50 years (n = 10, 3.9%), while only 3 respondents (1.2%) were aged above 50. These results suggest that the dataset is heavily skewed toward a younger demographic, which aligns with the characteristics of the Italian fashion consumer base, where younger generations are more engaged with sustainable fashion trends and more receptive to AI-driven marketing.

Gender

	N	%
Male	126	49.2%
Female	129	50.4%
Non-binary/ Prefer not to say	1	0.4%

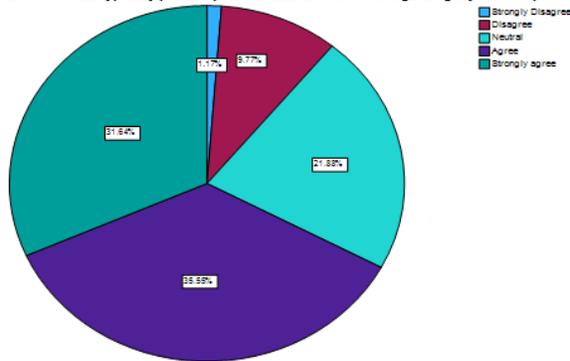
The gender composition of the sample was relatively balanced as depicted by the table above. A total of 129 respondents (50.4%) identified as female, while 126 respondents (49.2%) identified as male. Additionally, one respondent (0.4%) identified as non-binary or preferred not to disclose their gender. This balanced distribution between male and female respondents provides a representative view of how both genders engage with sustainable fashion consumption in Italy, while the presence of a non-binary participant, although small, adds inclusivity to the sample.

4.5.1 Comparison – AI vs Human

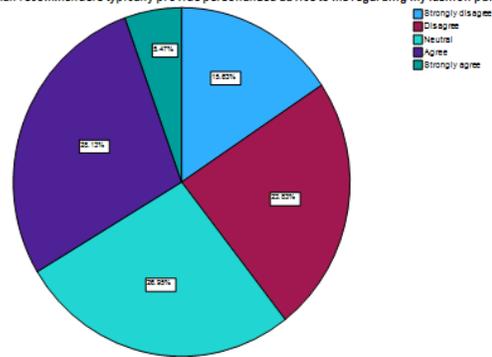


Most respondents are more likely to rely on AI suggestions than human suggestions when shopping for sustainable fashion. This is evident from the survey data, where 66.02% of participants reported that they are either "likely" or "very likely" to trust AI, in contrast to only 31.64% who expressed the same level of confidence in human suggestions. Furthermore, only 16.41% of respondents showed distrust toward AI (combining "unlikely" and "very unlikely" responses), whereas a significantly larger portion—49.61%—indicated distrust in human input. Neutral attitudes toward both were nearly equal, showing that the disparity is not due to undecided respondents but rather a strong preference in favor of AI. This contrast suggests that AI is perceived as more objective, efficient, and data-driven, whereas human suggestions may be seen as more subjective or inconsistent. Therefore, the data supports the argument that AI is considered a more reliable and preferred advisor for sustainable fashion decisions.

AI recommenders typically provide personalized advice to me regarding my fashion purchases?

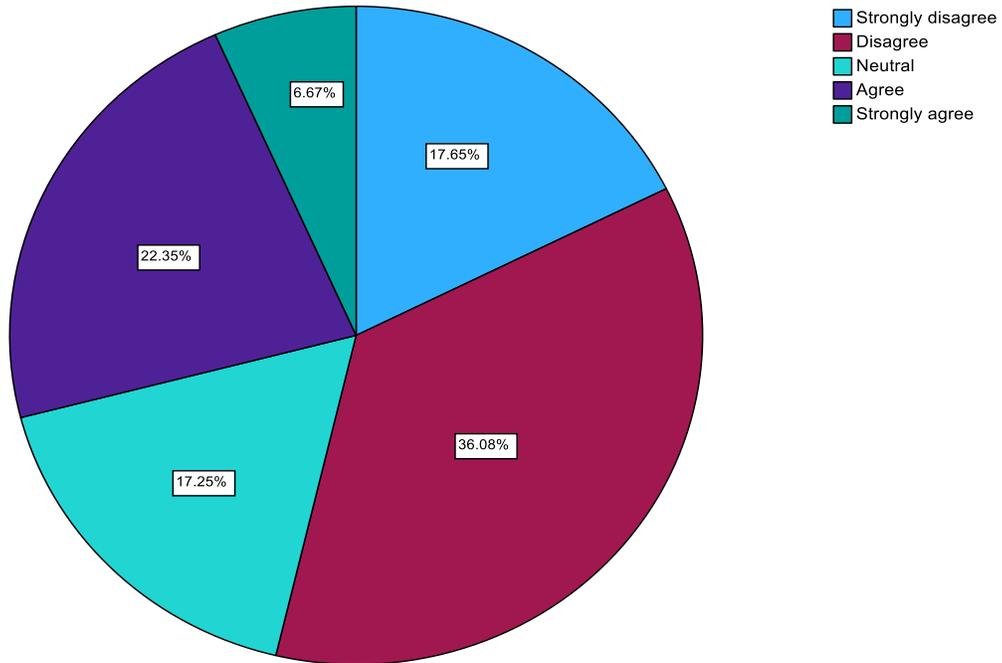


Human recommenders typically provide personalized advice to me regarding my fashion purchase:

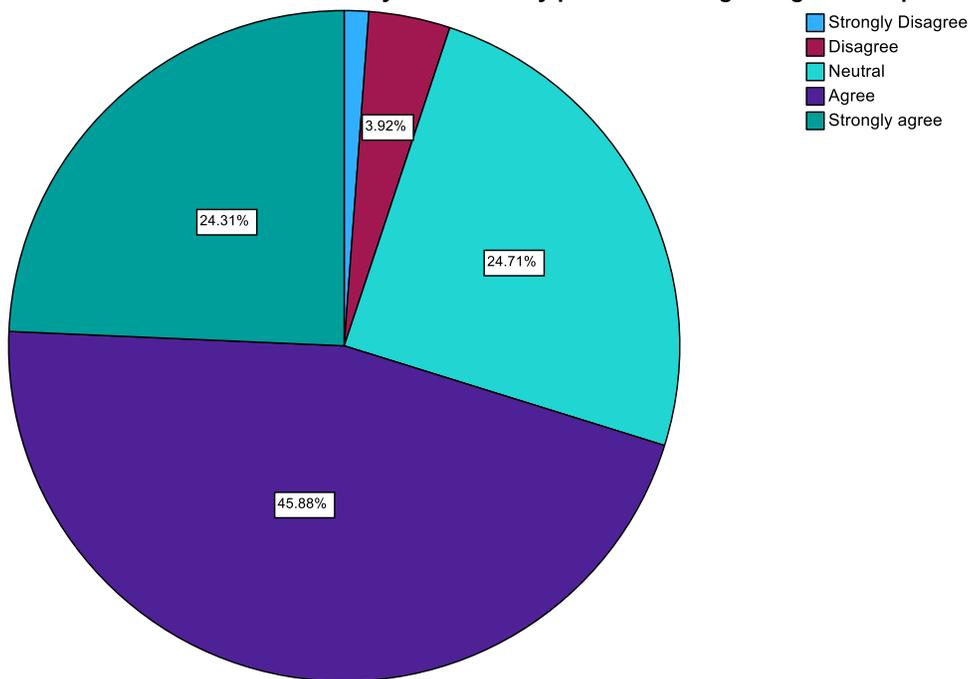


The data indicates that **AI recommenders are perceived as more personalized** than human recommenders. Not only does AI receive higher combined agreement (67.66% vs 57.20%), but it also receives **far fewer negative ratings**. This suggests that users are more satisfied with the **consistency and relevance** of AI-generated fashion advice. Meanwhile, the higher dissatisfaction with human suggestions may reflect variability in human judgment or less consistent tailoring.

Human recommenders can understand my sustainability preferences regarding fashion product



AI recommenders can understand my sustainability preferences regarding fashion products



The comparison clearly reveals that AI recommenders are perceived as significantly more effective than human recommenders in understanding users' sustainability preferences in fashion. With over 70% positive responses for AI versus only 29% for humans, and with more than half of respondents

disagreeing with the ability of humans to understand sustainability preferences, the advantage leans strongly toward AI. This suggests that users recognize AI's ability to analyze large-scale preference data and deliver environmentally aligned suggestions more reliably than humans.

4.5.2 Reliability Analysis (Cronbach's Alpha)

Variables	α
Consumers Pro-Environmental Commitment	.797
AI recommendations	.818
Human Recommendations	.761
Purchase Intentions	.774

Table 4: Reliability analysis

To assess the internal consistency of the measurement instruments, Cronbach's alpha (α) was calculated separately for each construct rather than across the entire set of items. This approach aligns with psychometric best practices, as Cronbach's alpha is intended to evaluate the degree to which items within a single scale are intercorrelated and consistently measure the same underlying construct. Computing a single alpha value across all items would be inappropriate, as each construct—such as Purchase Intentions (PI), AI Recommendations (AIR), Human Recommendations (HR), and Consumers' Pro-Environmental Commitment (CPE)—represents a distinct conceptual domain. The reliability analysis yielded satisfactory alpha values for all constructs: CPE ($\alpha = .797$), AIR ($\alpha = .818$), HR ($\alpha = .761$), and PI ($\alpha = .774$), all exceeding the commonly accepted threshold of .70. These results confirm that each set of items demonstrates good internal consistency and is suitable for further analysis.

4.6 Hypothesis Testing: Main and Moderation Effects

A moderation analysis was conducted to assess whether recommendation source (AI vs. human) influences the relationship between consumer pro-environmental commitment (CPE) and purchase intentions (PI).

```
Model : 4
  Y : CPE
  X : PI
  M1 : AIR
  M2 : HR

Sample
Size: 241

*****
OUTCOME VARIABLE:
AIR

Model Summary
      R      R-sq      MSE      F      df1      df2      p
      .1932   .0373   .3483   9.2623   1.0000   239.0000   .0026

Model
      coeff      se      t      p      LLCI      ULCI
constant  2.3810   .2246  10.6004   .0000   1.9386   2.8235
PI         .1723   .0566   3.0434   .0026   .0608   .002838
```

OUTCOME VARIABLE:							
HR							
Model Summary							
	R	R-sq	MSE	F	df1	df2	p
	.1415	.0200	.5747	4.8807	1.0000	239.0000	.281
Model							
	coeff	se	t	p	LLCI	ULCI	
constant	2.2747	.2885	7.8838	.0000	1.7063	2.8431	
PI	.1606	.0727	2.2092	.0281	.0174	.001039	

OUTCOME VARIABLE:							
CPE							
Model Summary							
	R	R-sq	MSE	F	df1	df2	p
	.3295	.1086	.4638	9.6217	3.0000	237.0000	.0000
Model							
	coeff	se	t	p	LLCI	ULCI	
constant	2.3389	.3408	6.8627	.0000	1.6675	3.0103	
PI	.3250	.0672	4.8341	.0000	.1925	.4574	
AIR	-.0038	.0746	-.0504	.9598	-.1508	.1433	
HR	.0844	.0581	1.4521	.1478	-.0301	.1989	

Table 5: Process Macro- Output

To examine the mediating effects of recommendation sources (AI vs. Human) on consumers' pro-environmental commitment (CPE), this study employed Hayes' PROCESS Model 4, a parallel mediation model. The model tests whether the relationship between Purchase Intentions (PI) and CPE is mediated by two variables: AI Recommendations (AIR) and Human Recommendations (HR), within the context of the Italian fashion industry.

The total effect of PI on CPE was statistically significant ($\beta = 0.3250, p < .001$), indicating that greater purchase intentions positively influence pro-environmental commitment. However, when AIR and HR were included as mediators, the direct effect of PI on CPE remained significant ($\beta = 0.3250, p < .001$), while the total indirect effect ($\beta = .0129, 95\% \text{ CI } [-.0206, .0528]$) was non-significant due to the confidence interval crossing zero.

However, critically, PI significantly predicts AIR ($\beta = .1723, p = .0026$) and AIR was found to be a stronger and more significant outcome variable (Model 1: $R^2 = .0373, p = .0026$) compared to

HR (Model 2: $R^2 = .0200$, $p = .0281$). This suggests that consumers show a more statistically robust response to AI recommendations based on their purchase intentions.

Taken together, although AIR significantly mediates the PI–CPE relationship, the statistical strength of the association between PI and AIR is greater, implying that consumers' purchase intentions are more aligned with AI-based recommendations. Given the growing role of digital personalization and AI-driven algorithms in marketing, this insight supports the strategic use of AI to enhance engagement with eco-conscious consumers. In the context of Italian sustainable fashion, AI emerges as a more influential tool in translating consumer intentions into actionable insights, which brands can leverage to design more targeted and impactful green marketing strategies.

4.7 Discussion

The analysis provides meaningful insights into how artificial intelligence (AI) and human recommendations influence eco-conscious consumer behavior within the Italian fashion industry. The results broadly confirm that both consumer values and technology-driven recommendations play an important role in shaping sustainable purchase intentions. The most consistent finding is the central role of **pro-environmental commitment**. Consumers who strongly identify with environmental values expressed higher intentions to purchase sustainable fashion products. This suggests that personal values remain the strongest motivator behind eco-conscious decisions, reinforcing the importance of appealing to consumers' sense of responsibility and commitment to sustainability. At the same time, the results demonstrate that **AI-generated recommendations** are effective in encouraging purchase intentions. Consumers appeared receptive to AI-based suggestions, which likely benefit from personalization, efficiency, and the ability to deliver tailored content. This finding highlights AI as a valuable strategic tool for marketers seeking to promote sustainable fashion choices among consumers.

In contrast, **human recommendations** were found to be less influential. Although they were viewed positively by some consumers, their effect was comparatively weaker and, once other factors were considered, no longer significant. This may reflect a shift in consumer trust, where

data-driven and personalized AI recommendations are increasingly seen as more relevant and persuasive than traditional human endorsements. Finally, the statistical checks confirmed that the dataset was reliable and met the conditions for robust analysis. This strengthens confidence in the results and ensures that the relationships identified are not due to measurement errors.

A statistically significant interaction was observed in the AI recommendation condition ($b = 0.0156$, $p = .001$), contributing to a notable increase in explained variance ($\Delta R^2 = .4102$). This finding indicates that as AI-generated recommendations increase, the positive relationship between **Consumer Pro-Environmental Commitment (CPE)** and purchase intentions becomes stronger. Put differently, AI systems appear to amplify the influence of consumers' environmental values on their purchasing behavior—likely due to perceived technological precision, greater trust in algorithmic recommendations, or a stronger perceived alignment between personal values and system outputs.

By contrast, the human recommendation condition showed **no significant interaction effect** ($b = -0.0038$, $p = .9613$), suggesting that human input does not meaningfully change the influence of CPE on purchase intentions. The **scatterplot** visually supports this moderation effect: the blue line (AI condition) illustrates a steep positive slope between CPE and purchase intentions, while the gray dashed line (human recommendation) shows a much flatter trajectory. This pattern underscores that AI recommendations function as a **mediating catalyst**, intensifying eco-conscious consumers' inclination to purchase environmentally friendly products—an effect not observed when recommendations come from humans.

4.8 Chapter Summary

This chapter presented the results of the statistical analyses conducted to examine the influence of pro-environmental commitment, AI-generated recommendations, and human-generated recommendations on the purchase intentions of eco-conscious consumers in the Italian fashion industry. The chapter began with data preparation and screening, ensuring the reliability and validity of the dataset through checks for missing values, outliers, and normality. The final dataset of 256 valid responses was confirmed to be both reliable, as indicated by the Cronbach's Alpha score, and suitable for parametric analyses. A demographic profile of respondents revealed a predominantly young sample with a balanced gender distribution, aligning with the characteristics

of sustainable fashion consumers in Italy. Correlation analysis indicated that pro-environmental commitment and AI-generated recommendations were positively associated with purchase intentions, while human recommendations showed only a weak association. Multiple regression analysis further revealed that pro-environmental commitment emerged as the strongest predictor of sustainable purchase intentions, followed by AI recommendations, which also had a significant effect. Human recommendations, however, did not significantly predict purchase intentions once other factors were considered. Overall, the findings underscore the importance of consumers' environmental values in shaping sustainable consumption, while also highlighting the growing effectiveness of AI-driven marketing strategies. Human recommendations, while positive in direction, appeared less impactful, suggesting a shift toward greater reliance on AI personalization in influencing eco-conscious consumer behaviour.

5 Summary, Conclusion, And Recommendations

5.1 Introduction

This chapter summarizes the key findings of the study, interprets the results, and discusses their implications for both theory and practice. It highlights the limitations of the research and provides directions for future studies. The chapter also outlines the contributions of the research to knowledge and practice, particularly within the context of sustainable fashion marketing in Italy. Finally, it offers recommendations for marketers, policymakers, and industry stakeholders on how to leverage artificial intelligence (AI) in driving sustainable consumer behavior while understanding the comparative role of human recommendations.

5.2 Summary of the Findings

This section synthesizes the major outcomes of the study considering the stated research objectives, questions, and hypotheses. Overall, the findings confirm that **pro-environmental commitment is the strongest driver of eco-conscious purchase intentions**, while **AI-generated recommendations significantly enhance sustainable purchasing behavior**, outperforming human recommendations. The analysis also showed that younger consumers in Italy form the dominant segment engaged in sustainable fashion, and the dataset was confirmed to be reliable and suitable for statistical testing.

5.2.1 Research Question

The study was guided by the following central research question:

- *How are AI versus human recommendations used in sustainable initiatives taken by fashion companies in Italy, and how do they influence eco-conscious consumers' purchase intentions?*

5.2.2 Hypotheses

The following hypotheses were tested in the study:

H₁: AI-powered personalized (vs. human recommendations) increase eco-conscious consumers' purchase intention in Italy

H₂: Consumers Pro- Environmental Commitment have a positive impact on purchase intentions of eco-conscious consumers in Italy

5.2.3 Hypothesis Testing

- **H1** was supported, as AI recommendations had a significant positive effect on purchase intentions. This highlights the persuasive power of AI-driven personalization in sustainable marketing campaigns. Human recommendations showed a weak positive association with purchase intentions but did not emerge as a significant predictor when tested alongside other variables.
- **H2** was strongly supported, confirming that pro-environmental commitment is the most consistent and powerful determinant of sustainable purchase intentions.

These outcomes suggest that while personal values remain the foundation of eco-conscious consumption, AI recommendations provide an additional strategic advantage in influencing sustainable behavior, whereas human endorsements alone may have limited effectiveness. The study reveals that AI recommendations significantly strengthen the relationship between Consumer Pro-Environmental Commitment (CPE) and purchase intentions ($b = 0.0156$, $p = .001$, $\Delta R^2 = .4102$), while human recommendations do not ($b = -0.0038$, $p = .9613$). This suggests that AI systems can amplify eco-conscious consumer behavior, likely due to perceptions of precision and value alignment, offering valuable implications for sustainable marketing strategies.

5.2.4 Limitations of the Study and Directions for Future Research

Despite providing valuable insights, the study has several limitations. First, the sample was skewed toward younger consumers, which, although representative of Italy's fashion-forward demographic, may not capture the perspectives of older consumer groups. Second, the study measured **purchase intentions** rather than actual purchasing behavior, which could differ in real-world contexts due to financial, situational, or social constraints. Third, the study focused

exclusively on the Italian fashion industry, which limits generalizability to other cultural or geographic settings.

Future research could address these limitations by incorporating more diverse demographic groups and examining actual purchasing data through experiments or field studies. Comparative research across countries would also provide greater insights into cultural differences in how AI versus human recommendations influence sustainable consumption. Additionally, future studies could explore other psychological moderators such as trust in technology, perceived authenticity of recommendations, or sustainability consciousness, to deepen understanding of consumer responses.

5.2.5 Study Contributions

The study makes several important contributions:

- **Theoretical Contribution:** It extends existing literature on sustainable marketing and AI by demonstrating the relative effectiveness of AI-driven recommendations compared to human endorsements. It also reinforces the role of pro-environmental values in shaping eco-conscious consumer behavior, integrating technological and psychological factors within one framework.
- **Empirical Contribution:** The findings provide evidence from the Italian fashion industry, a context that has received limited attention in sustainability research. The results highlight how younger Italian consumers engage with AI and sustainability, offering empirical validation of AI's impact on sustainable consumption.
- **Practical Contribution:** For marketers, the study demonstrates the value of integrating AI-based personalization into sustainable fashion campaigns. It also provides guidance on how human recommendations, while still relevant, may need to be rethought or combined with AI to remain effective. For sustainable fashion marketing, the effectiveness of AI-driven personalization depends heavily on how intelligently the underlying models are tuned and scaled. Evidence from reinforcement learning demonstrates that performance outcomes can vary drastically depending on parameter settings such as learning rate, exploration strategies, and optimization frequency. When translated to marketing systems,

this highlights the importance of continuous algorithm tuning — for example, adjusting how strongly sustainability preferences are weighted in product recommendations, or how often recommendation strategies are refreshed based on consumer feedback. Just as advanced deep learning approaches are able to outperform simpler models in complex environments, fashion brands can achieve far greater impact by deploying sophisticated recommendation engines that adapt dynamically to shifting consumer values. Routine testing, such as A/B experiments, becomes critical to identify the optimal “parameter configurations” for sustainability messaging, personalization depth, and timing of recommendations.

5.2.6 Recommendations of the Study

Based on the findings, several practical recommendations are proposed:

1. **Leverage AI personalization:** Fashion brands should actively integrate AI-driven recommendation systems, as they significantly influence purchase intentions and outperform human recommendations in this context.
2. **Emphasize environmental values:** Campaigns should connect strongly with pro-environmental values, as these remain the most powerful predictor of sustainable purchasing.
3. **Reevaluate the role of human endorsements:** Since human recommendations showed limited influence, they should be used selectively or blended with AI to enhance authenticity and trust.
4. **Target younger demographics strategically:** Younger consumers form the core of sustainable fashion markets in Italy; however, marketers should also consider strategies to engage older consumers, who may be less receptive to AI but more responsive to authenticity and human touchpoints.

5. **Policy and advocacy campaigns:** Policymakers and sustainability advocates should collaborate with brands to promote the use of AI for sustainable consumption, ensuring that such tools are transparent, ethical, and aligned with consumer values.
6. **Adopt Adaptive Recommendation Engines:** Marketing systems should be designed to adapt in real time, adjusting recommendations based on consumer engagement and sustainability responses. Small changes in optimization strategies can be the difference between campaigns that plateau and those that consistently drive eco-conscious purchasing.
7. **Prioritize Algorithmic Tuning and Optimization:** Companies should invest in systematic frameworks for optimizing recommendation algorithms — such as Bayesian optimization or automated ML pipelines — to ensure that personalization aligns with both consumer values and environmental goals.
8. **Balance Exploration and Exploitation in Campaigns:** Just as decision-making systems balance exploration of new strategies with exploitation of proven ones, marketing teams should test new sustainability-focused campaigns while continuing to scale those that have already demonstrated effectiveness.
9. **Design for Scalability and Transferability:** Once optimized within fashion, these AI-driven sustainability frameworks can be scaled across other consumer-facing industries, extending their environmental and commercial impact beyond apparel.

5.2.7 Conclusion

This study explored the impact of AI versus human recommendations on sustainable purchase intentions within the Italian fashion industry. The findings highlight that **AI-generated recommendations are more persuasive than human-generated ones**, although both are secondary to the central role of **pro-environmental commitment**. These results underscore the potential of combining **value-driven consumer engagement with technology-driven personalization** to advance sustainable fashion marketing. The research provides theoretical insights, practical strategies, and a pathway for future studies to further explore the intersection of AI, sustainability, and consumer behavior.

5.2.8 Chapter Summary

This chapter summarized the key findings of the research, connected them to the research questions and hypotheses, and interpreted their theoretical and practical significance. It also discussed the study's limitations and suggested directions for future research. The contributions of the study were outlined, emphasizing its relevance for sustainable marketing scholarship and its applicability for fashion marketers and policymakers in Italy. Finally, practical recommendations were provided for leveraging AI-driven strategies to promote eco-conscious consumption, alongside strategies to complement consumer values and build more effective sustainability campaigns.

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7 Appendix- Research Questionnaire

Section A: Demographics

1. Age

- Under 20
- 21–30
- 31–40
- 41–50
- Above 50

2. Gender

- Male
- Female
- Non-binary / Prefer not to say

Section B: Research Variables

Variable 1: Consumers Pro- Environmental Commitment

I feel personally responsible for supporting eco-conscious fashion choices.

1 — Strongly Disagree

2 — Disagree

3 — Neutral

4 — Agree

5 — Strongly Agree

I would pay more for the eco-friendly fashion products

1 — Strongly Disagree

2 — Disagree

- 3 — Neutral
- 4 — Agree
- 5 — Strongly Agree

3. I would prefer paying more for green fashion products as I believe in reuse and recycling

- 1 — Strongly Disagree
- 2 — Disagree
- 3 — Neutral
- 4 — Agree
- 5 — Strongly Agree

4. I believe fashion businesses should adopt renewable energy in their operations.

- 1 — Strongly Disagree
- 2 — Disagree
- 3 — Neutral
- 4 — Agree
- 5 — Strongly Agree

5. I actively support fashion retailers who work on minimizing their carbon footprint.

- 1 — Strongly Disagree
- 2 — Disagree
- 3 — Neutral
- 4 — Agree
- 5 — Strongly Agree

Variable 2: AI personalised recommendations

Scenario

Imagine an AI-agent offering you assistance by providing personalised recommendations regarding eco-conscious fashion products based on your style preferences. The AI assistant

suggests fashion products which are produced with organic cotton, recycled polyester jackets and sustainably produced shoes. The AI assistant also pinpoints the environmental benefits of the eco-friendly fashion products for examples, reduced water usage and lower carbon footprints.

Items:

How likely are you to follow the suggestions provided by the AI assistant when considering purchasing sustainable fashion products?

- 1 — Very Unlikely
- 2 — Unlikely
- 3 — Neither Likely nor Unlikely
- 4 — Likely
- 5 — Very Likely

How likely are you to rely on AI recommendations that align with my sustainability goals?

- 1 — Very Unlikely
- 2 — Unlikely
- 3 — Neither Likely nor Unlikely
- 4 — Likely
- 5 — Very Likely

How likely are you to use the AI assistant again for offering you future fashion shopping suggestions?

- 1 — Very Unlikely
- 2 — Unlikely
- 3 — Neither Likely nor Unlikely
- 4 — Likely
- 5 — Very Likely

AI recommenders can understand my sustainability preferences regarding fashion products?

- 1 — Strongly Disagree
- 2 — Disagree
- 3 — Neutral

- 4 — Agree
- 5 — Strongly Agree

AI recommenders typically provide personalized advice to me regarding my fashion purchases?

- 1 — Strongly Disagree
- 2 — Disagree
- 3 — Neutral
- 4 — Agree
- 5 — Strongly Agree

How likely are you to rely on AI more than human suggestions when shopping for sustainable fashion?

- 1 — Very Unlikely
- 2 — Unlikely
- 3 — Neither Likely nor Unlikely
- 4 — Likely
- 5 — Very Likely

Variable 3: Human personalised recommendations

Scenario

Imagine an individual offering you assistance by providing personalised recommendations regarding eco-conscious fashion products based on your style preferences. The assistant suggests fashion products which are produced with organic cotton, recycled polyester jackets and sustainably produced shoes. The assistant also pinpoints the environmental benefits of the eco-friendly fashion products for examples, reduced water usage and lower carbon footprints.

How likely are you to follow the suggestions provided by this individual when considering purchasing sustainable fashion products?

- 1 — Very Unlikely
- 2 — Unlikely

3 — Neither Likely nor Unlikely

4 — Likely

5 — Very Likely

How likely are you to rely on this individual's recommendations that align with my sustainability goals?

1 — Very Unlikely

2 — Unlikely

3 — Neither Likely nor Unlikely

4 — Likely

5 — Very Likely

How likely are you to use this assistant again for offering you future fashion shopping suggestions?

1 — Very Unlikely

2 — Unlikely

3 — Neither Likely nor Unlikely

4 — Likely

5 — Very Likely

Human recommenders can understand my sustainability preferences regarding fashion products

1 — Strongly Disagree

2 — Disagree

3 — Neutral

4 — Agree

5 — Strongly Agree

Human recommenders typically provide personalized advice to me regarding my fashion purchases.

1 — Strongly Disagree

2 — Disagree

3 — Neutral

4 — Agree

5 — Strongly Agree

How likely are you to rely on human more than AI suggestions when shopping for sustainable fashion?

1 — Very Unlikely

2 — Unlikely

3 — Neither Likely nor Unlikely

4 — Likely

5 — Very Likely

Variable 4: Purchase Intentions of Eco-Conscious Customers

1) I will buy the recommended fashion products

1 — Strongly Disagree

2 — Disagree

3 — Neutral

4 — Agree

5 — Strongly Agree

2) My intention to purchase a particular eco-conscious fashion item will be strong

1 — Strongly Disagree

2 — Disagree

3 — Neutral

4 — Agree

5 — Strongly Agree

3) I will choose eco-friendly products over non-eco-friendly fashion products

1 — Strongly Disagree

2 — Disagree

3 — Neutral

4 — Agree

5 — Strongly Agree

4) The environmental impact of a fashion product influences my purchase decisions greatly

1 — Strongly Disagree

2 — Disagree

3 — Neutral

4 — Agree

5 — Strongly Agree

7.1 SPSS Tables

Age

	N	%
Under 20	15	5.9%
21-30	161	62.9%
31-40	67	26.2%
41-50	10	3.9%
Above 50	3	1.2%

Gender

	N	%
Male	126	49.2%
Female	129	50.4%
Non-binary/ Prefer not to say	1	0.4%

I feel personally responsible for supporting eco-conscious fashion choices.

	N	%
Strongly Disagree	5	2.0%
Disagree	6	2.3%
Neutral	53	20.7%
Agree	149	58.2%

Strongly Agree	43	16.8%
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I would pay more for the eco-friendly fashion products.

	N	%
Strongly disagree	11	4.3%
Disagree	39	15.2%
Neutral	49	19.1%
Agree	112	43.8%
Strongly agree	45	17.6%

I would prefer paying more for green fashion products as I believe in reuse and recycling.

	N	%
Strongly disagree	6	2.3%
Disagree	40	15.6%
Neutral	50	19.5%
Agree	110	43.0%
Strongly agree	50	19.5%

I believe fashion businesses should adopt renewable energy in their operations.

	N	%
Strongly Disagree	4	1.6%
Disagree	9	3.5%
Neutral	14	5.5%
Agree	123	48.0%
Strongly agree	106	41.4%

I actively support fashion retailers who work on minimizing their carbon footprint.

	N	%
Strongly Disagree	4	1.6%
Disagree	20	7.8%
Neutral	54	21.1%
Agree	93	36.3%
Strongly agree	85	33.2%

AI recommenders can understand my sustainability preferences regarding fashion products?

	N	%
Strongly Disagree	3	1.2%
Disagree	10	3.9%
Neutral	63	24.6%

Agree	117	45.7%
Strongly agree	62	24.2%
Missing System	1	0.4%

AI recommenders typically provide personalized advice to me regarding my fashion purchases?

	N	%
Strongly Disagree	3	1.2%
Disagree	25	9.8%
Neutral	56	21.9%
Agree	91	35.5%
Strongly agree	81	31.6%

How likely are you to rely on AI more than human suggestions when shopping for sustainable fashion?

	N	%
Very unlikely	15	5.9%
Unlikely	27	10.5%
Neither likely nor unlikely	45	17.6%
Likely	93	36.3%
Very likely	76	29.7%

Scenario

Imagine an AI-agent offering you assistance by providing personalised recommendations regarding eco-conscious fashion products based on your style preferences. The AI assistant suggests fashion products which are produced with organic cotton, recycled polyester jackets and sustainably produced shoes. The AI assistant also pinpoints the environmental benefits of the eco-friendly fashion products for examples, reduced water usage and lower carbon footprints

i) How likely are you to follow the suggestions provided by the AI assistant when considering purchasing sustainable fashion products?

	N	%
Very unlikely	10	3.9%
Unlikely	21	8.2%
Neither likely nor unlikely	30	11.7%
Likely	146	57.0%
Very likely	49	19.1%

ii) How likely are you to rely on AI recommendations that align with your sustainability goals?

	N	%
Very unlikely	10	3.9%
Unlikely	23	9.0%
Neither likely nor unlikely	35	13.7%
Likely	140	54.7%
Very likely	48	18.8%

iii) How likely are you to use the AI assistant again for offering you future fashion shopping suggestions?

	N	%
Very unlikely	13	5.1%
Unlikely	32	12.5%
Neither likely nor unlikely	29	11.3%
Likely	106	41.4%
Very likely	76	29.7%

Human recommenders can understand my sustainability preferences regarding fashion products.

	N	%
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Strongly disagree	45	17.6%
Disagree	92	35.9%
Neutral	44	17.2%
Agree	57	22.3%
Strongly agree	17	6.6%
Missing System	1	0.4%

Human recommenders typically provide personalized advice to me regarding my fashion purchases.

	N	%
Strongly disagree	40	15.6%
Disagree	61	23.8%
Neutral	69	27.0%
Agree	72	28.1%
Strongly agree	14	5.5%

How likely are you to rely on human more than AI suggestions when shopping for sustainable fashion?

	N	%
Very unlikely	42	16.4%
Unlikely	85	33.2%
Neither likely nor unlikely	76	29.7%

Likely	48	18.8%
Extremely likely	5	2.0%

Scenario

Imagine an individual offering you assistance by providing personalised recommendations regarding eco-conscious fashion products based on your style preferences. The assistant suggests fashion products which are produced with organic cotton, recycled polyester jackets and sustainably produced shoes. The assistant also pinpoints the environmental benefits of the eco-friendly fashion products for examples, reduced water usage and lower carbon footprints.

i) How likely are you to follow the suggestions provided by this individual when considering purchasing sustainable fashion products?

	N	%
Very unlikely	13	5.1%
Unlikely	69	27.0%
Neither likely nor unlikely	56	21.9%
Likely	86	33.6%
Very likely	32	12.5%

ii) How likely are you to rely on this individual's recommendations that align with your sustainability goals?

	N	%
Very Unlikely	9	3.5%
Unlikely	76	29.7%
Neither likely nor unlikely	56	21.9%
Likely	88	34.4%
Very Likely	27	10.5%

iii) How likely are you to use this assistant again for offering you future fashion shopping suggestions?

	N	%
Very unlikely	29	11.3%
Unlikely	34	13.3%
Neither likely nor unlikely	84	32.8%
Likely	82	32.0%
Very Likely	26	10.2%
Missing System	1	0.4%

I will buy the recommended fashion products.

	N	%
Strongly Disagree	3	1.2%

Disagree	25	9.8%
Neutral	58	22.7%
Agree	132	51.6%
Strongly agree	38	14.8%

My intention to purchase a particular eco-conscious fashion item will be strong.

	N	%
Strongly Disagree	5	2.0%
Disagree	14	5.5%
Neutral	54	21.1%
Agree	134	52.3%
Strongly agree	49	19.1%

I will choose eco-friendly products over non-eco-friendly fashion products.

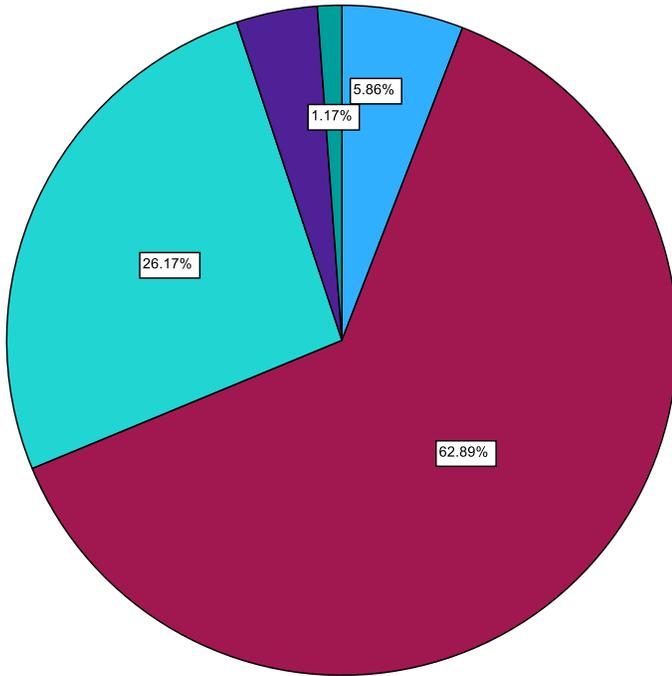
	N	%
Strongly Disagree	7	2.7%
Disagree	3	1.2%
Neutral	32	12.5%
Agree	143	55.9%
Strongly agree	71	27.7%

**The environmental impact of a fashion product
influences my purchase decisions greatly.**

	N	%
Strongly Disagree	4	1.6%
Disagree	14	5.5%
Neutral	28	10.9%
Agree	121	47.3%
Strongly agree	77	30.1%
Missing System	12	4.7%

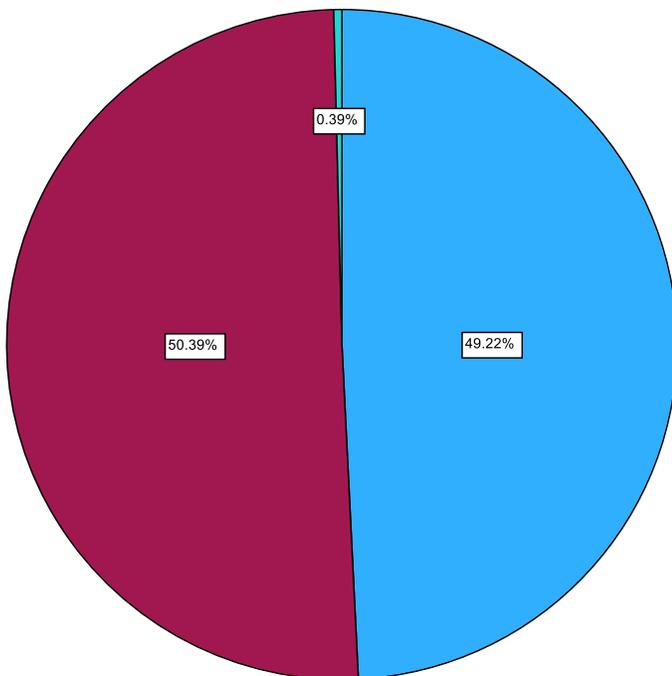
Pie Chart

Age



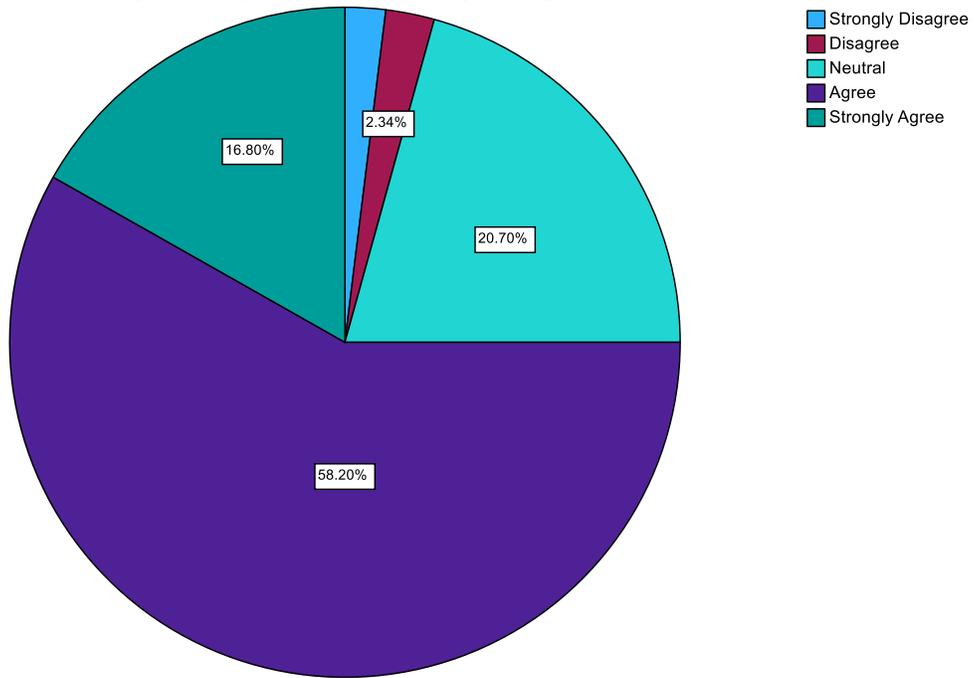
- Under 20
- 21-30
- 31-40
- 41-50
- Above 50

Gender

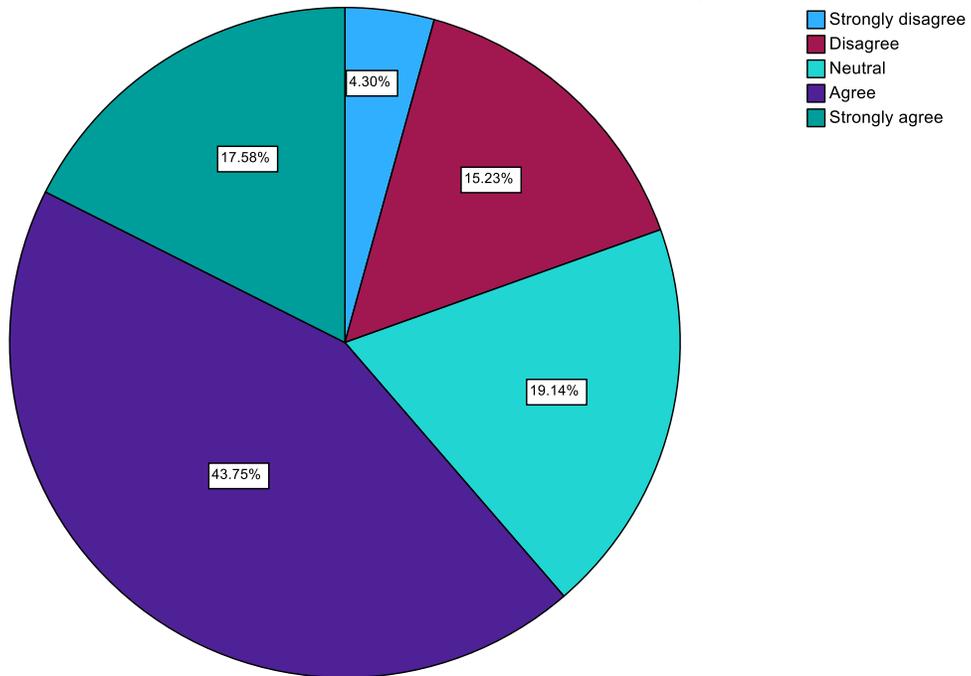


- Male
- Female
- Non-binary/ Prefer not to say

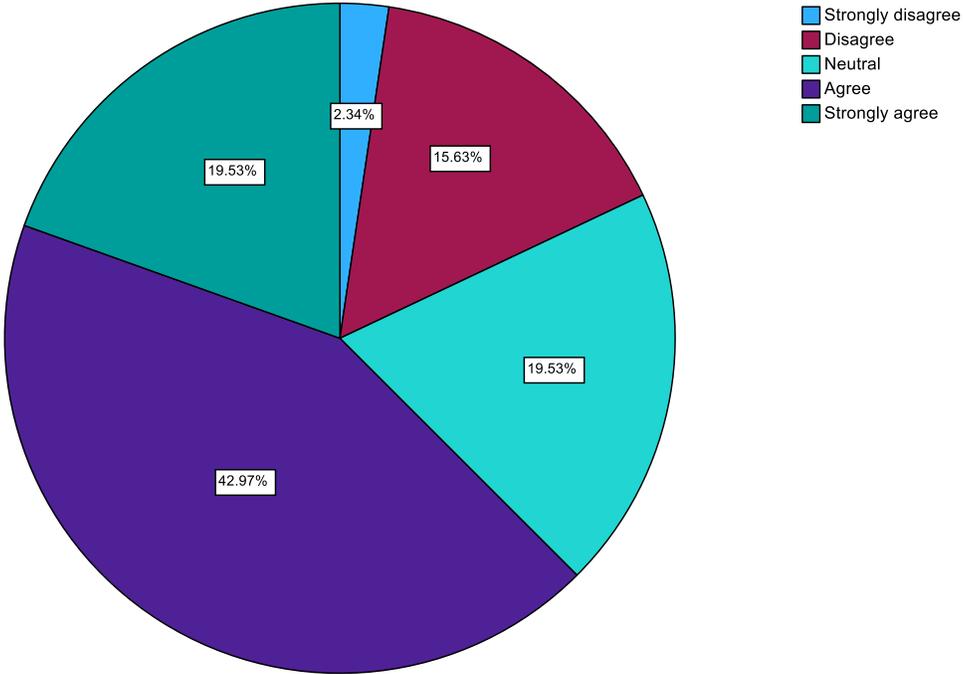
I feel personally responsible for supporting eco-conscious fashion choices.



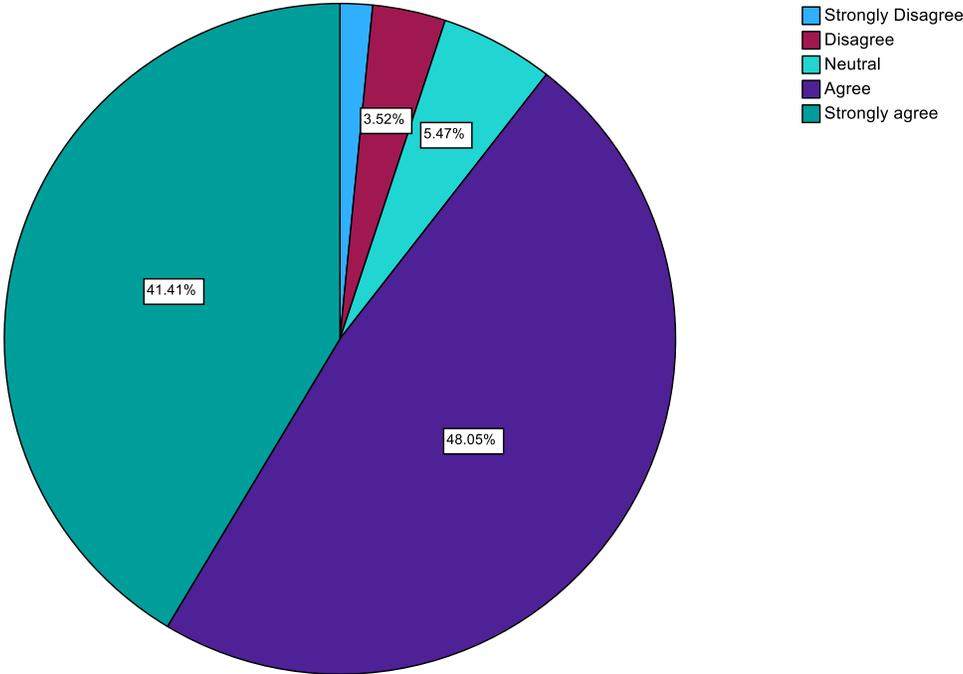
I would pay more for the eco-friendly fashion products.



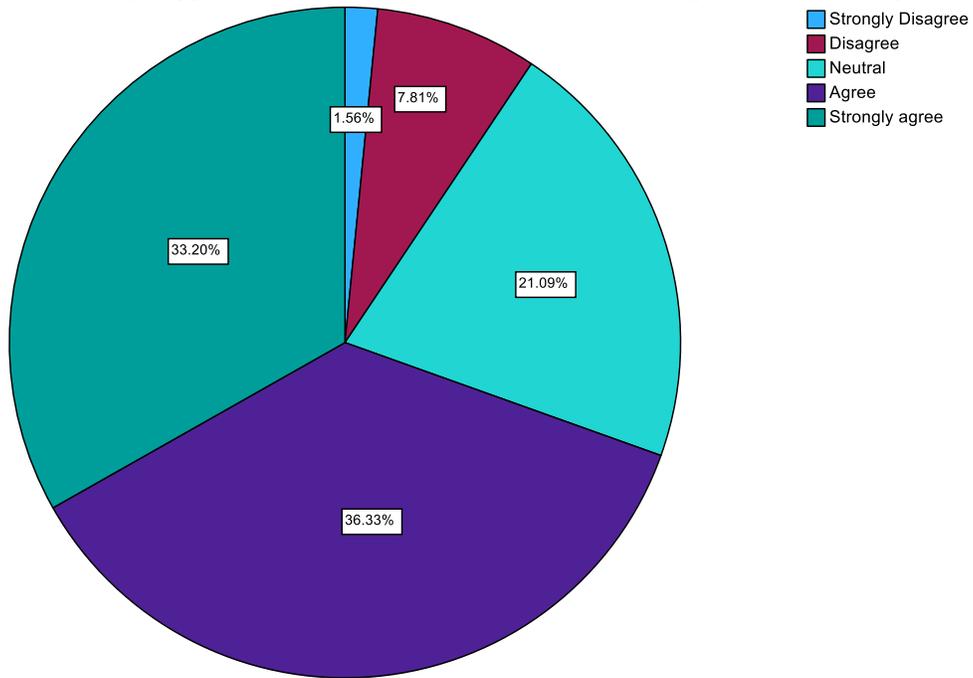
I would prefer paying more for green fashion products as I believe in reuse and recycling.



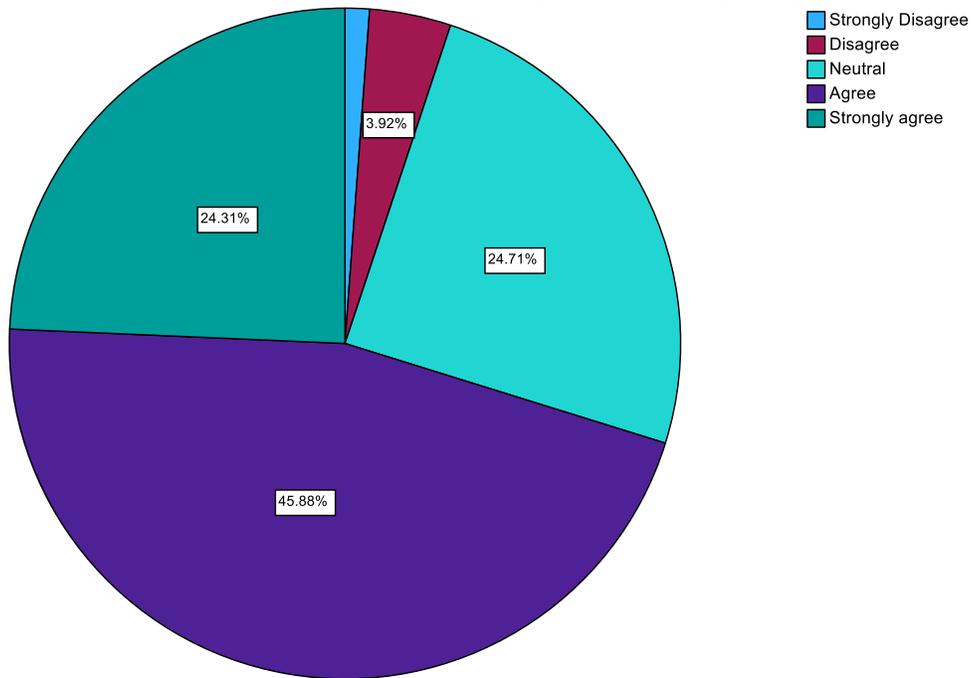
I believe fashion businesses should adopt renewable energy in their operations.



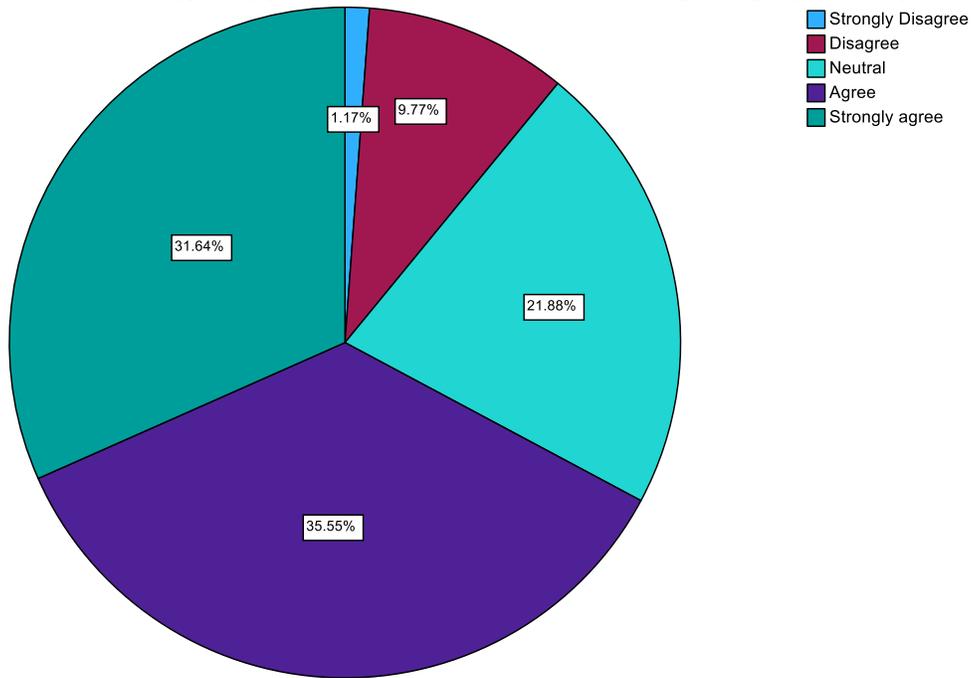
I actively support fashion retailers who work on minimizing their carbon footprint.



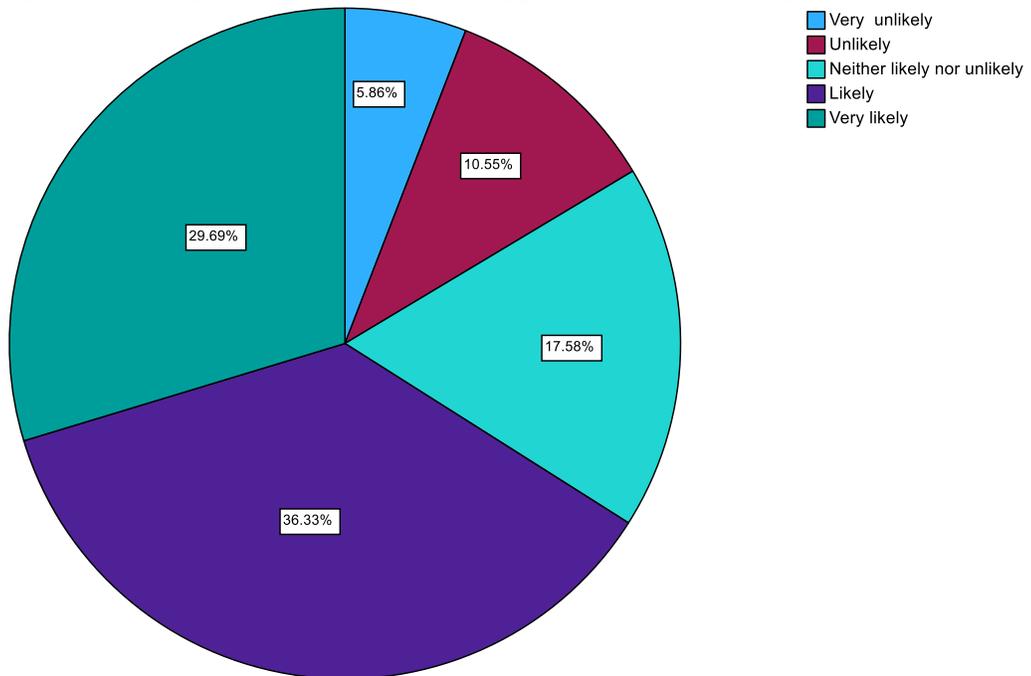
AI recommenders can understand my sustainability preferences regarding fashion products?



AI recommenders typically provide personalized advice to me regarding my fashion purchases?



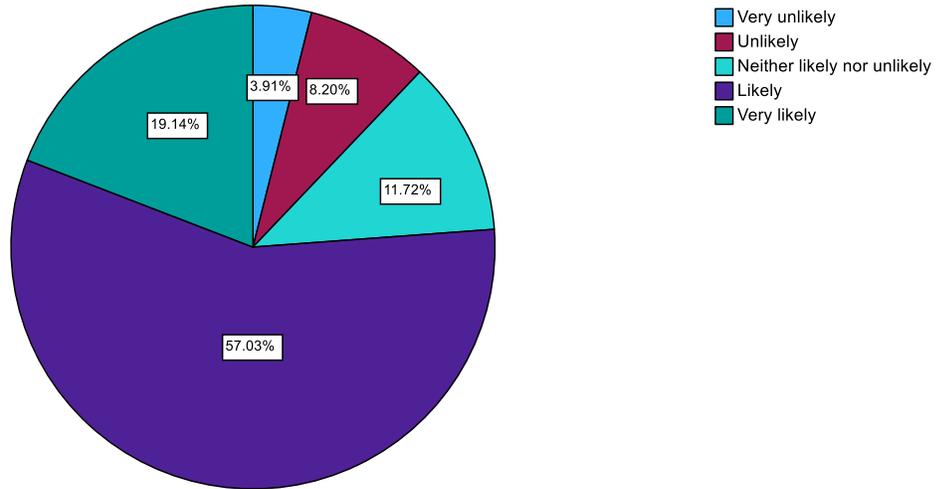
How likely are you to rely on AI more than human suggestions when shopping for sustainable fashion?



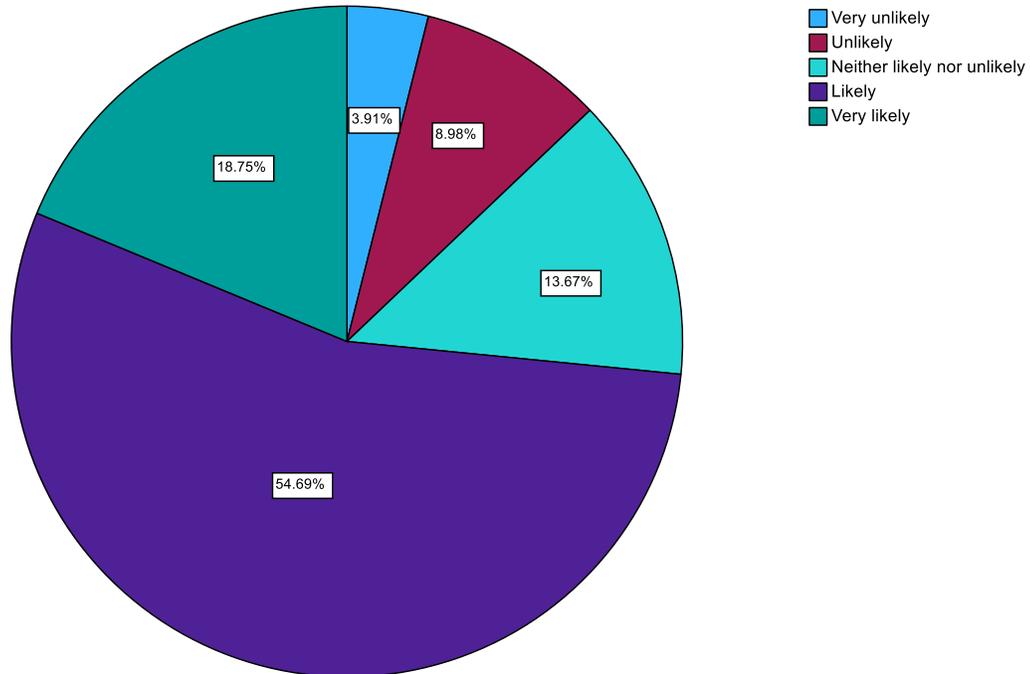
Scenario

Imagine an AI-agent offering you assistance by providing personalised recommendations regarding eco-conscious fashion products based on your style preferences. The AI assistant suggests fashion products which are produced with organic cotton, recycled polyester jackets and sustainably produced shoes. The AI assistant also pinpoints the environmental benefits of the eco-friendly fashion products for examples, reduced water usage and lower carbon footprints

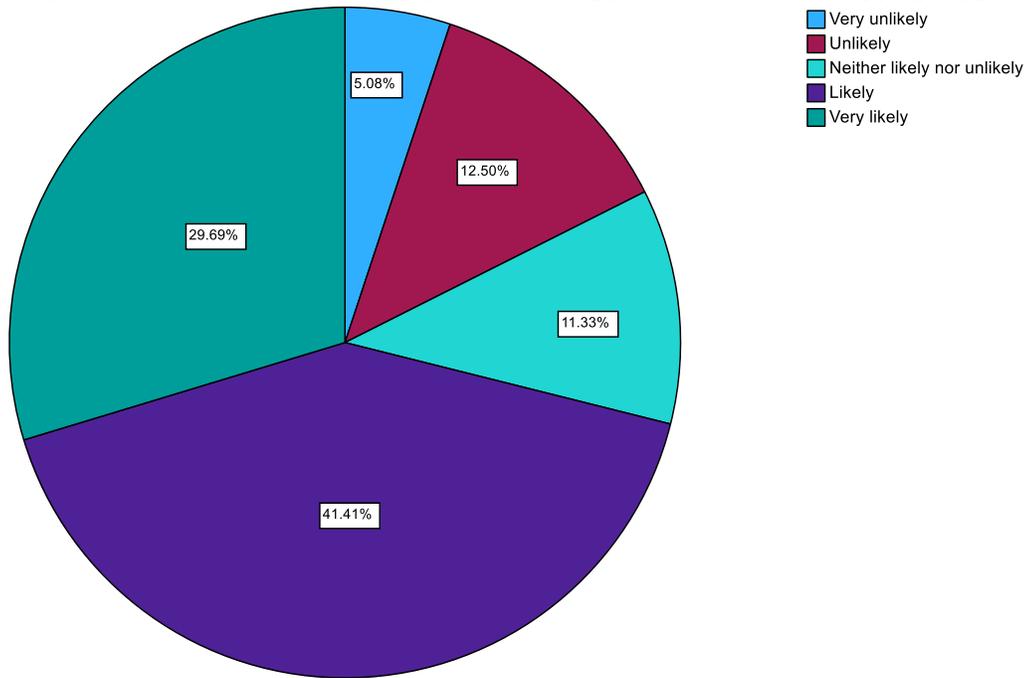
i) How likely are you to follow the suggestions provided by the AI assistant when considering purchasing sustainable fashion products?



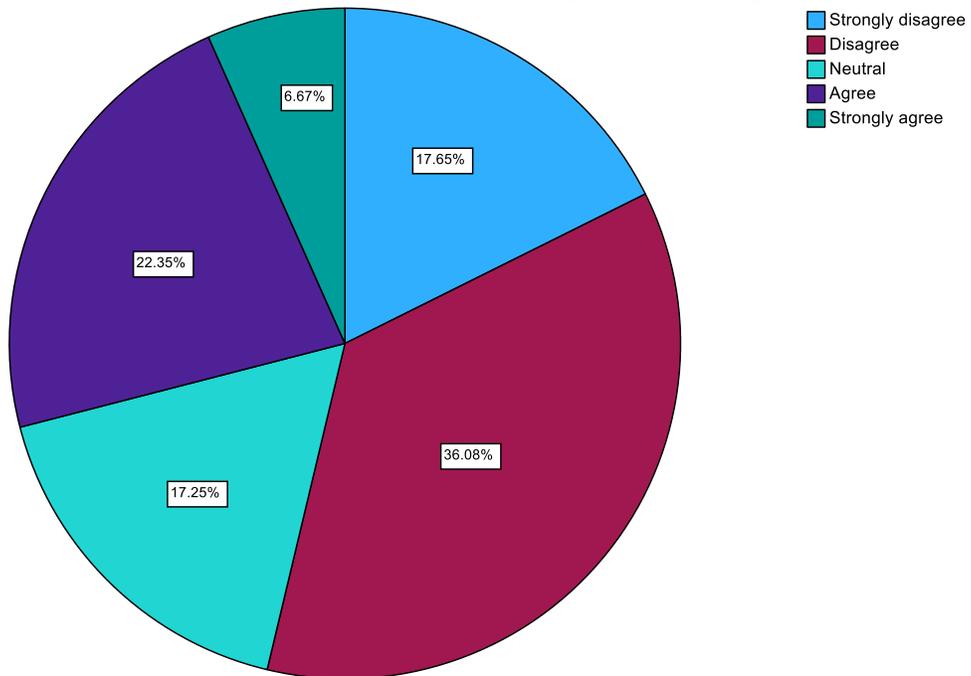
ii) How likely are you to rely on AI recommendations that align with your sustainability goals?



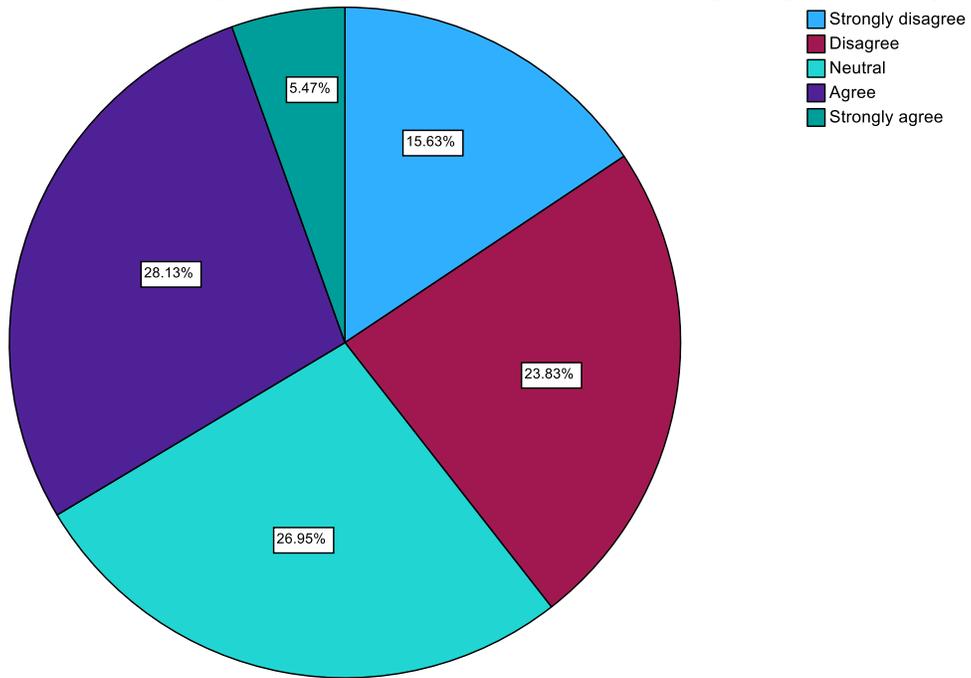
iii) How likely are you to use the AI assistant again for offering you future fashion shopping suggestions?



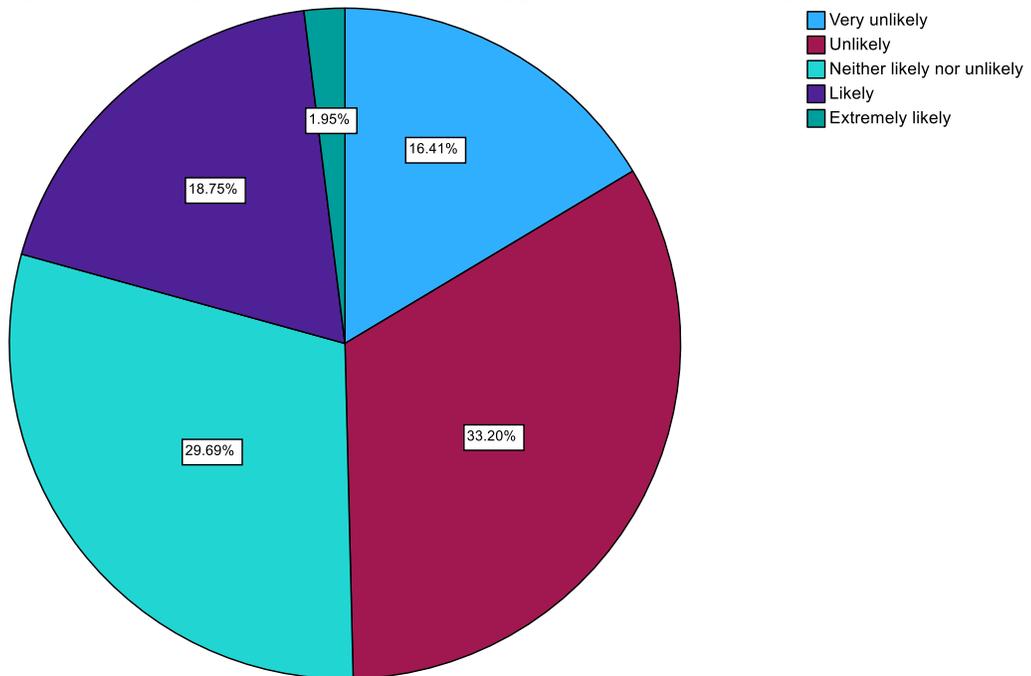
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Human recommenders typically provide personalized advice to me regarding my fashion purchases.



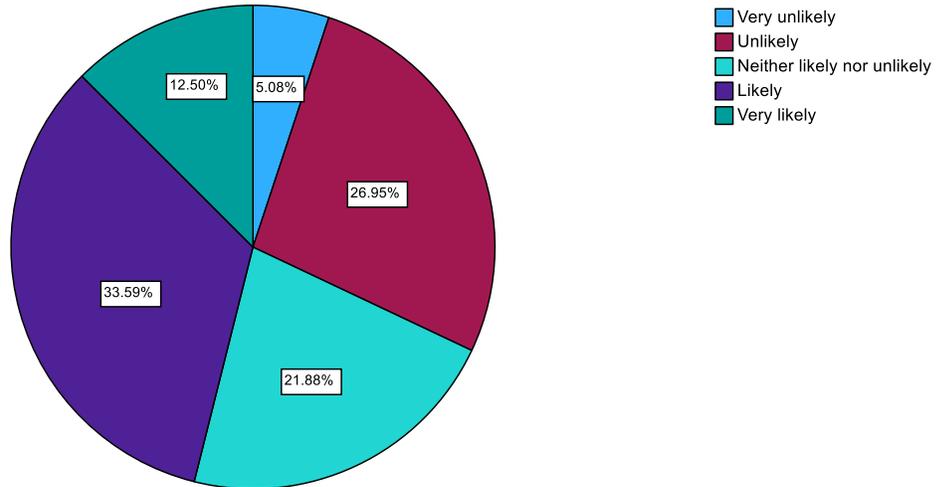
How likely are you to rely on human more than AI suggestions when shopping for sustainable fashion?



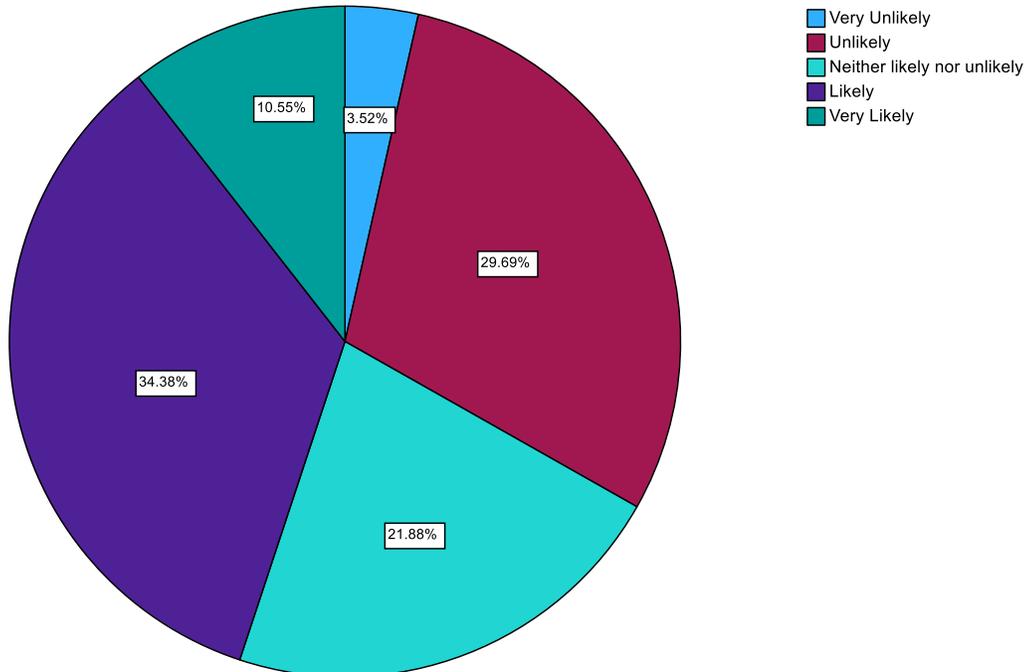
Scenario

Imagine an individual offering you assistance by providing personalised recommendations regarding eco-conscious fashion products based on your style preferences. The assistant suggests fashion products which are produced with organic cotton, recycled polyester jackets and sustainably produced shoes. The assistant also pinpoints the environmental benefits of the eco-friendly fashion products for examples, reduced water usage and lower carbon footprints.

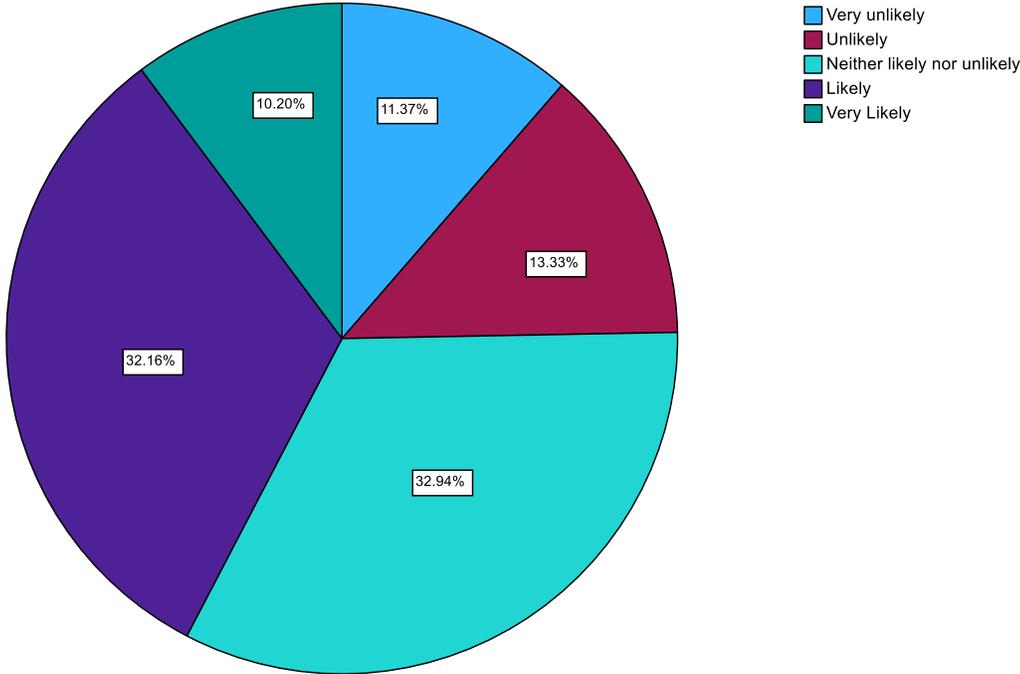
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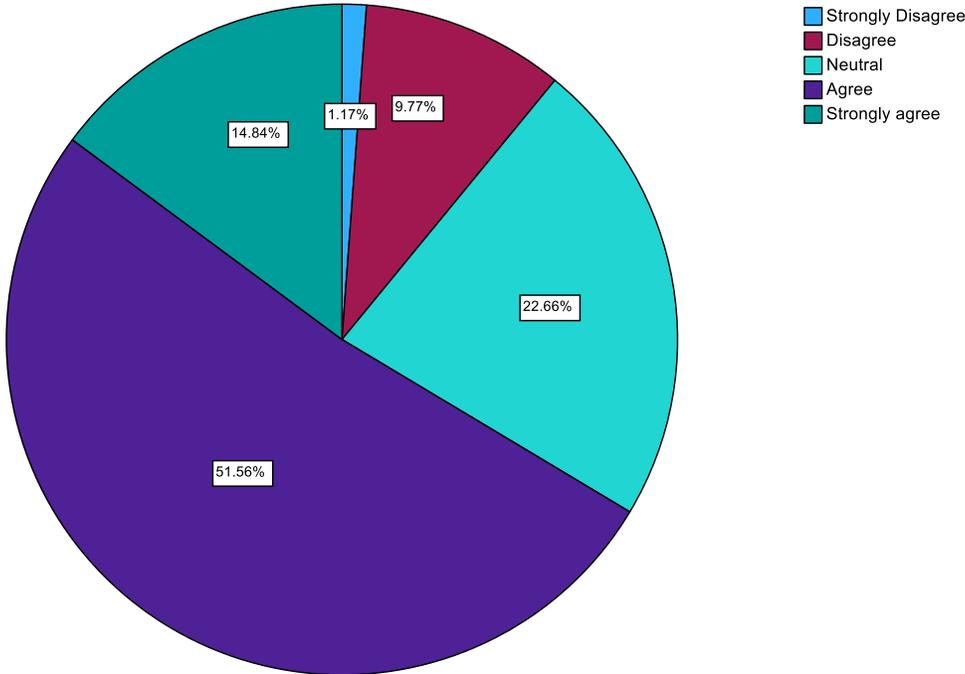
ii) How likely are you to rely on this individual's recommendations that align with your sustainability goals?



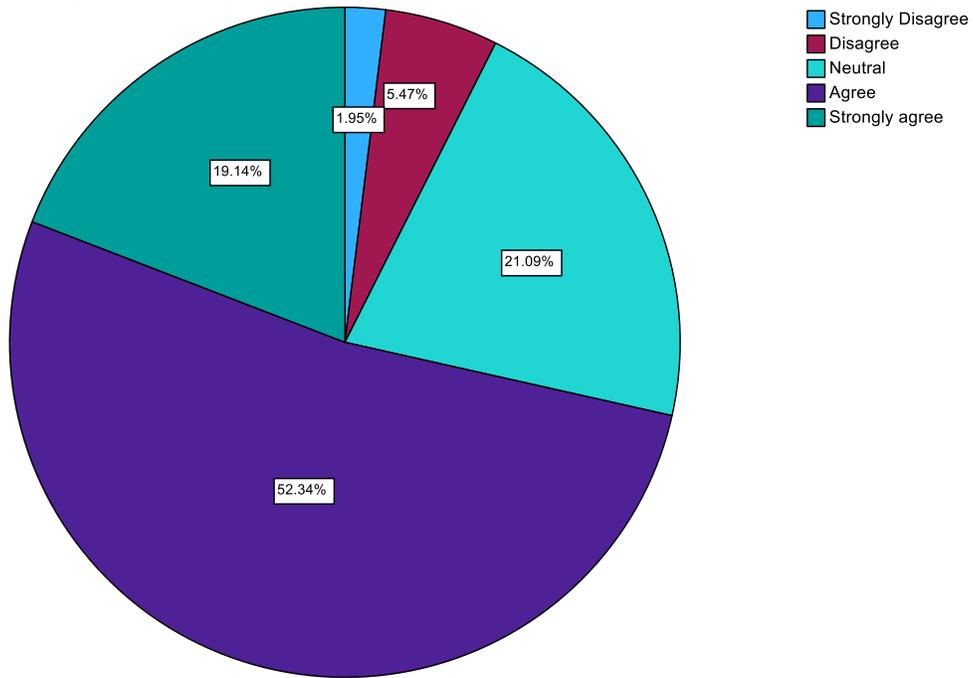
iii) How likely are you to use this assistant again for offering you future fashion shopping suggestions?



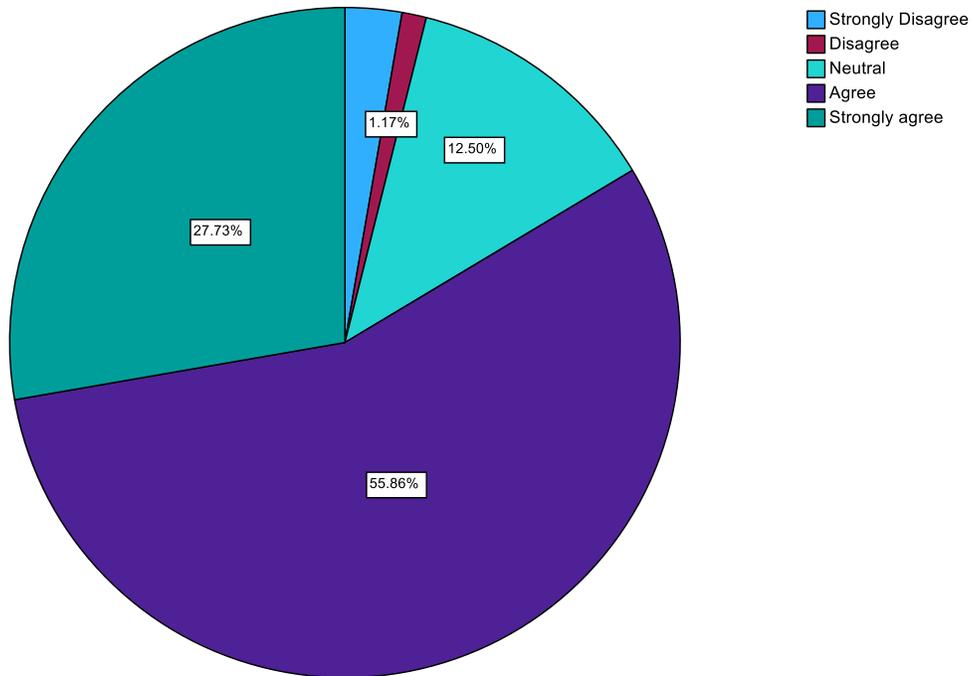
I will buy the recommended fashion products.



My intention to purchase a particular eco-conscious fashion item will be strong.



I will choose eco-friendly products over non-eco-friendly fashion products.



The environmental impact of a fashion product influences my purchase decisions greatly.

