



Vaasan yliopisto  
UNIVERSITY OF VAASA

Anima Adhikari

Sushanta Bhattarai

# **Determinants of Willingness to Pay for Sustainable Fashion: An Empirical Study of Italian Consumers**

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**Author:** Sushanta Bhattarai, Anima Adhikari  
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**ABSTRACT:**

The pressure in the fashion industry is growing stronger to address its environmental and social effects and transition to sustainable alternatives. Nevertheless, there is a persistent disconnect between the reported environmentally conscious attitude of consumers and their actual buying behavior, and particularly willingness to buy at a high price. This paper explores the predictors behind willingness-to-pay (WTP) of sustainable fashion characteristics: bio-based clothing, recycled clothing, second-hand clothing, and fair working conditions, in the culturally important Italian market. The study employs descriptive statistics, correlation analysis, hypothesis testing, multiple regression, factor analysis, and cluster analysis to analyze secondary survey data of 401 Italian consumers, focusing on the study design of a quantitative, cross-sectional research design.

The results indicate a complicated terrain where geographic and economic variables outshine economic factors than the demographic and general attitudinal variables. The most promising positive correlate of all sustainable attributes, especially bio-based clothing, is income. It is worth noting that the Southern Italy and the Islands are characterized by regional differences that imply that the mean WTP of consumers in the South is higher than in the North. On the other hand, general environmental concern and pro-environmental behavior have no significant impact on WTP of recycled clothing indicating a strong attitude behavior gap. There is no evidence of the hypothesized age, gender, or education effects on WTP. Multivariate models (regression and SEM) do not fit sufficiently which indicates that the relationships are non-linear and too complicated to use the traditional linear processes. The K-means cluster analysis will be used to distinguish two group segments of heterogeneous consumer profiles, such as high-WTP/low-concern and low-WTP/high-concern market segments.

This study concludes that in Italy, financial capacity and sub-national cultural circumstances are the main drivers of sustainable fashion valuation, and general environmental attitudes are weak direct drivers. Theoretical implications imply that consumption models cannot be based too much on demographic and general attitudinal variables but, on the contrary, it is context dependent. Practical implications give a marketer a blueprint of segmentation-based communications and give recommendations to regional pricing and product development strategies. In terms of economic obstacles and local cultural peculiarities, the policymakers need to take into account financial incentives and infrastructural investments. The paper provides richer, empirically based information about the Italian sustainable fashion consumer, beyond the simplistic demographical definitions of the consumer to the intricate nature of the interactions among economics and geography and consumer motivations.

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**KEYWORDS:** Sustainable Fashion, Willingness-to-Pay (WTP), Consumer Behaviour, Market Segmentation, Environmental Concern, Quantitative Analysis.

## Contents

1 Introduction	8
1.1 Background of the study	8
1.2 Problem statement	9
1.3 Research gap	9
1.4 Research objective	10
1.5 Research question	11
1.6 Significance of the study	11
1.6.1 Theoretical Significance	11
1.6.2 Practical Significance	12
1.6.3 Societal importance	12
1.7 Scope of the Study	13
2 Literature review	14
2.1 Introduction to Sustainable Fashion	14
2.2 Theoretical Foundations of Willingness-to-Pay	14
2.2.1 Economic Perspectives on WTP	15
2.2.2 Psychological foundations	15
2.2.3 Social and cultural perspective	16
2.3 Demographic Factors Influencing Sustainable Consumption	17
2.3.1 Age and Generational Differences	17
2.3.2 Gender Differences	17
2.3.3 Income Effects	18
2.3.4 Education and Environmental Awareness	19
2.4 Psychological Determinants	20
2.4.1 Environmental Attitudes and Concerns	20
2.4.2 Pro-environmental Behaviors	21
2.4.3 The Attitude-Behavior Gap	21
2.5 The Italian Fashion Consumer Context	22
2.5.1 Cultural characteristics	22
2.5.2 Market characteristics	22
2.6 Summary and Conceptual Framework	23

3 Methodology	25
3.1 Research Design	25
3.2 Data Collection	25
3.2.1 Survey Instrument Development	25
3.2.2 Sampling Procedure	27
3.2.3 Data Collection Process	27
3.3 Variables Measurement	28
3.3.1 Dependent Variables (WTP measures)	28
3.3.2 Independent Variables (Demographics)	29
3.3.3 Mediating and Moderating Variables	30
3.3.4 Control Variables	30
3.4 Data Analysis Techniques	31
3.4.1 Descriptive Statistics	31
3.4.2 Correlation Analysis	31
3.4.3 Hypothesis Testing	31
3.4.4 Multiple Regression Analysis	32
3.4.5 Factor Analysis	32
3.4.6 Cluster Analysis	32
3.4.7 Advanced Statistical Techniques	33
3.5 Ethical Considerations	33
3.6 Data Quality and Validity	35
3.7 Research results	35
3.7.1 Data Screening and Preliminary Analysis	35
3.7.2 Descriptive Statistics of Key Variables	40
3.7.3 Correlation Analysis	45
3.7.4 Hypothesis Testing Results	48
3.7.5 Market Segmentation Results	55
3.7.6 Advanced Statistical Analysis Results	57
3.7.7 Summary of Key Findings	60
4 Discussion	62
4.1 Income Effects on Sustainable Fashion WTP	62
4.2 The Role of Environmental Attitudes	63

4.3 Demographic Influences	63
4.4 Practical Implications for Fashion Industry	64
4.4.1 Marketing Strategies for Different Segments	64
4.4.2 Pricing Recommendations	65
4.5 Policy Implications	65
5 Conclusion	67
5.1 Recapitulation of Research Objectives	67
5.2 Contributions to knowledge	68
5.3 Limitations of the Study	68
5.4 Recommendations for Future Research	70
References	72

## List of Figures

<b>Figure 1.</b> Conceptual framework	23
<b>Figure 2.</b> Age distribution of Respondents	37
<b>Figure 3.</b> Columns with missing values	38
<b>Figure 4.</b> Descriptive Statistics of Key Variables	40
<b>Figure 5.</b> Age distribution	42
<b>Figure 6.</b> Income Distribution	43
<b>Figure 7.</b> Importance of Clothing Attributes	44
<b>Figure 8.</b> WTP variables comparison box plot	45
<b>Figure 9:</b> Correlation Matrix of WTP variables	46
<b>Figure 10.</b> Correlation: Demographic vs WTP	48
<b>Figure 11.</b> Scatter plot of Income vs WTP for Sustainable Fashion	49
<b>Figure 12.</b> Environmental Concern vs WTP for Recycled Clothing	50
<b>Figure 13.</b> Age vs WTP for Bio Clothing	51
<b>Figure 14.</b> Gender Differences in Second-Hand Clothing WTP	52
<b>Figure 15.</b> Education vs Environmental Concern	53
<b>Figure 16.</b> Statistical Significance of All Hypotheses	54
<b>Figure 17.</b> Cluster Evaluation Metrics	55
<b>Figure 18.</b> Cluster Analysis	56
<b>Figure 19.</b> Mediation Analysis diagram	58
<b>Figure 20.</b> Moderation Analysis	60

## List of Tables

<b>Table 1.</b> Demographic Feature of data	36
<b>Table 2.</b> Data Cleaning Process	39
<b>Table 3.</b> Data distribution table	41
<b>Table 4.</b> Correlation Matrix	45
<b>Table 5.</b> Correlation Coefficient	47
<b>Table 6.</b> Correlation table between WTP variable	49
<b>Table 7.</b> Summary table of hypothesis testing result	53
<b>Table 8</b> Cluster profile	56

<b>Table 9.</b> Table showing cluster segmentation	57
<b>Table 10.</b> Mediation analysis result	58
<b>Table 11.</b> Moderation Analysis	59

# 1 Introduction

## 1.1 Background of the study

The fashion business sector across the globe is at a crossroad with increasing pressure to ensure that its large environmental footprint is addressed and consumer needs of sustainability are met. The United Nations Environment Programme (Notten, 2020) estimates that the fashion industry contributes around 10 percent of the total world carbon emissions and almost 20 percent of all the wastewater in the world. This environmental effect has triggered an increase in consumer consciousness and desire to have more sustainable fashion options, which (Niinimäki et al., 2020) refer to as the sustainable fashion paradox, the contradiction between consumer fast-paced consumption behaviors and environmental accountability.

This tension is especially strong in Italy, the country, which has its fashion tradition and luxury brands. The Italian fashion sector is also under more and more pressure in terms of sustainability practices, as the EUR66.4 billion industry (Italiana, 2022) has to be regarded. Market research in the country has not only shown increasing demand by Italian consumers in sustainable fashion products due to their traditionally linked quality and craftsmanship but also suggests that the population is now willing to pay more attention to how businesses operate (Cervellon & Carey, 2011). This change is a challenge and a chance to Italian fashion companies trying to find their position between changing value of the consumers and ensure their competitiveness.

Willingness-to-pay (WTP) is an important indicator in the analysis of consumer adoption of sustainable fashion as an indicator of consumer attitude towards the product and real purchase. The attitude-behavior gap in sustainable consumption as (White et al., 2019) remark, where good intentions towards the environment simply do not lead to buying behavior, is a challenge for of both marketers and researchers. So, understanding the determinants of willingness to pay is very important. In Italian context it is important for developing marketing strategies and accelerating transformation towards sustainability.

## 1.2 Problem statement

Although the issue of fashion and its environmental impact has become more widespread, and consumers are getting more and more interested in sustainable options, there are still great obstacles in putting the issue of sustainability into practice. The gap between the reported and actual environmental concerns of consumers is the green gap, and it still presents a challenge to the fashion industry (Henninger et al., 2016). Such a discrepancy is especially noticeable when it comes to the Italian market where old-fashioned principles of high-quality and longevity are colliding with the new trends of fast-fashion consumption.

## 1.3 Research gap

Although the research on sustainable consumption and willing-to-pay is increasing, there are still a number of significant gaps in the literature. The following are the research gaps of the study:

1. To begin with, although a considerable body of research has explored sustainable consumption in general, little has been done to study WTP on several varieties of sustainable fashion in the same research, which restricts the knowledge of consumer preferences in prioritizing the various aspects of sustainability.
2. Second, although Italy plays an important role in the international fashion community, there has been a limited number of empirical researches done specifically on WTP of Italian consumers on sustainable fashion, with majority of the available literature being done in a Northern European or North American setting.

Although it is known that demographic variables have a role to play in the efforts of sustainable consumption, the processes by which these variables are manifested, most importantly the mediating role of environmental attitudes and moderating impacts of education, are yet to be explored in fashion.

3. The methodological challenges present in current studies such as use of basic correlational analyses and lack of sophisticated statistical methods and test restricts comprehension of multifaceted relationships between determinants of WTP.

The paper fills these gaps by considering WTP in various categories of sustainable fashion in the Italian context, using advanced analytical tools to consider the effects of mediation and moderation and building an overall conceptual framework. The rest of the chapter will outline the methodology which will be used to answer these research questions and test the hypotheses put forward.

#### **1.4 Research objective**

The main goal of this research is to find out and discuss the determinants of willingness-to-pay of sustainable fashion among Italian customers. This general goal is broken down into the following specific goals:

- To investigate the connection between demographic factors (age, gender, income, education, region) and WTP of various kinds of sustainable fashion (bio/organic, recycled materials, second-hand, fair labor conditions).
- To determine how environmental attitude and pro-environmental behavior can impact WTP on sustainable fashion.
- To determine whether the environmental concern is a mediator of the relationship between demographic factors and WTP.
- To investigate the modifying role of education in the income/WTP relationship.
- To define specific consumer groups with respect to their attitudes to sustainability, as well as their patterns of WTP.
- To formulate an integrated model that describes the intricate interactions of the demographic factor, attitudinal factor and behavioral factor that affect sustainable fashion consumption.

## **1.5 Research question**

To attain the research objectives, the following research answers the question :

“What are the relationships between demographic, attitudinal, and behavioral variables and willingness-to-pay (WTP) of Italian consumers towards sustainable fashion products?”

## **1.6 Significance of the study**

### **1.6.1 Theoretical Significance**

This paper contributes some significant information to the academic research on sustainable consumption and fashion marketing:

To begin with, it advances already known information by investigating WTP among various categories of sustainable fashion in one study, making it possible to compare various dimensions of sustainability. A majority of past studies applied a single category (e.g. organic cotton or second-hand clothes), which restricted the knowledge on prioritization of various aspects of sustainability in consumer behavior (Goworek et al., 2012).

Second, the study responds to the need to employ more advanced methods of statistics in sustainable consumption studies (White et al., 2019). Through the use of advanced analytical methods, such as mediation and moderation analysis, structural equation modeling, and market segmentation, the study has gone beyond the simple correlational analysis in its efforts to determine the complex causal relationships and effects of interaction.

Third, it adds value to the development of theories, as it incorporates the findings of the field of environmental psychology, consumer behavior and fashion marketing. The theoretical frameworks that are tested and expanded in the study are the Theory of Planned Behavior (Ajzen, 1991) and the Value-Belief-Norm theory (Stern, 2000a) to the particular sphere of sustainable fashion consumption.

### **1.6.2 Practical Significance**

To begin with, identification of the key determinants of WTP offers a guideline in the development of specific marketing tactics. Being aware of what factors have the most significant impact on the willingness of consumers to pay a higher price in order to purchase sustainable fashion would allow the brands to focus their efforts on communication and product development.

Secondly, the segmentation analysis will determine unique consumer groups that have varying sustainability profiles as well as WTP patterns. This allows fashion businesses to work on differentiated strategies in different market segments that go beyond the one-size-fits-all approach to sustainability marketing.

Third, the results on effects on mediation and moderation can provide insights as to how the demographic variables can be converted into buying behavior using psychological processes. This knowledge can be used to develop better communications that touch upon rational and emotional motivations of sustainable consumption.

Fourth, as a policymaker and sustainability advocate, the study gives evidence-based information to the work of policymaking and the creation of interventions and awareness campaigns that can effectively market sustainable fashion consumption.

### **1.6.3 Societal importance**

On the larger social scale, this research paper adds to the process of encouraging more sustainable consumption trends in the fashion industry. The study facilitates the shift to a more sustainable and responsible fashion economy, which is an essential part of wider sustainability ambitions in the framework of the European Green Deal and the United Nations Sustainable Development Goals by determining barriers and enablers of sustainable fashion adoption.

## **1.7 Scope of the Study**

The study is specifically dedicated to the willing-to-pay of Italian consumers on sustainable fashion. The research looks into four major types of sustainable fashion:(1) bio/organic material clothes, (2) recycled material clothes, (3) second-hand/vintage clothes and (4) clothes made in fair labor. The study considers the demographic determinants of WTP (age, gender, income, education, region) and the psychological determinants of WTP (environmental attitudes, pro-environmental behaviors).

The research study is a cross-sectional survey design, where it will gather data on a sample of 401 consumers in Italy in various regions. The methods of quantitative analysis comprise descriptive analysis, correlation analysis, test of hypotheses, multiple regression, factor analysis, cluster analysis, mediation and moderation analysis and structural equation modeling.

## **2 Literature review**

### **2.1 Introduction to Sustainable Fashion**

Over the last twenty years, the concept of sustainable fashion has changed considerably and has ceased to be a niche topic but now a mainstream issue in academic literature and in practice in the fashion industry. In the general understanding of sustainable fashion, the term can be considered as clothes, shoes and accessories produced, sold and worn in the most sustainable form possible, considering environmentally and socio-economically (Henninger et al., 2016). This definition covers several dimensions such as the environmental impact, ethical production, the principles of a circular economy, and a pattern of responsible consumption.

Sustainability is a challenge and opportunity in the Italian context. In Italy, the fashion business, which historically was a high-quality craftsmanship with luxury orientation, is under pressure to incorporate sustainable operations into the business models (Romana Rinaldi & Testa, 2017). Simultaneously, there is an increasing interest of consumers in environmental and ethical problems, even though the dilemma between luxury consumption habits and environmental sustainability continues to intensify (Grazzini et 2021).

### **2.2 Theoretical Foundations of Willingness-to-Pay**

The willingness-to-pay (WTP) concept of sustainable products has been discussed in the available literature in different theoretical perspectives. The theories of economics explain WTP based on utility maximization and product features whereas psychological theories are based on attitudes, values and intentions. The social and the cultural methods focus on the role of the identity and situational norms. An analysis of these views gives a background of what might contribute to the willingness of consumers to pay a premium to obtain sustainable fashion products.

### **2.2.1 Economic Perspectives on WTP**

Willingness-to-pay is a principle that underlies consumer behavior and economics, which is a reference to the highest price that the customer would be prepared to pay on a good or service (Werthenbroch and Skiera, 2002). WTP is normally used as an indicator of the price premium that consumers will be willing to give to products in environments where they can have an environmental or social advantage other than the functional utility of the product.

In economic terms, sustainable product WTP can be conceptualized with the help of utility theory, according to which the consumers will gain utility not only by the functional features of a product but also by the perceived environmental and social good (Kotler, 2011). The traits theory of consumer demand developed by Lancaster (1966) can be helpful in explaining how consumers can compare various characteristics of sustainable fashion, such as physical (quality, durability, aesthetics) and non-physical (environmental impact, ethical production) features.

### **2.2.2 Psychological foundations**

There are a number of frameworks for sustainable consumption that are described in the psychological literature. Theory of Planned Behavior (Ajzen, 1991) focuses on the influence of attitudes, subjective norms and perceived behavioral control in the development of intentions. The Norm Activation Model (Schwartz, 1977) is concerned with the way in which personal norms are activated through the receptiveness to the consequences and attribution of responsibility. The chain of personal values to environmental beliefs up to pro-environmental norms is emphasized in the Value-Belief-Norm theory (Stern, 2000). All these frameworks have been used in the research in sustainable consumption including the investigation of fashion (Yeon Kim & Chung, 2011).

Nonetheless, there is no particular psychological theory that is tested in the current study. The above theories are introduced to put them in perspective in relation to the variables under analysis. Rather, the study will take an empirically motivated design where it aims at quantifying environmental attitudes and pro-environmental behavior which variables appear

to be consistent across the literature and measures the correlation with willingness-to-pay (WTP) of sustainable fashion attributes.

### **2.2.3 Social and cultural perspective**

Social and cultural approaches provide more insights in regards to sustainable consumption behavior and emphasize the role of identity, social norms, and cultural values. According to the social identity theory, consumption behavior may be a way of self-expression that helps people express their values and membership (Castel et al., 2013). Consumers can also be ready to pay more to environmentally friendly products in the framework of sustainable fashion to demonstrate environmental consciousness and identify with the pro-environmental social groups (Griskevicius et al., 2010).

Another aspect pertaining to the willingness-to-pay (WTP) of sustainable products is cultural dimensions. Models like the Hofstede cultural dimensions model (Arrindell, 2003) of individualism-collectivism and long-term orientation have also been demonstrated to have a role in the sustainable consumption patterns. In the Italian environment, that is quite individualistic and collectivistic, cultural values can influence the consumer perceptions and priorities towards sustainability in consumer behavior (Cervellon & Carey, 2011).

Although an economic, psychological, and socio-cultural approach is also vital in the interpretation of WTP, the current study does not embrace one theoretical approach. Rather it assumes an empirical approach that looks at the relationship between demographic and psychological aspects and willingness-to-pay sustainable fashion. Instead, the social and cultural theories are employed to give the background to the context and to support findings interpretation, but not to outline the model of analysis.

## **2.3 Demographic Factors Influencing Sustainable Consumption**

### **2.3.1 Age and Generational Differences**

Age is one of the most commonly researched demographic factors in sustainable consumption studies whose results are varied and inconsistent in different settings. The younger generations are usually described as being more environmentally friendly and ready to spend higher prices on sustainable goods (Smith & Brower, 2012).

Nevertheless, there are also contradictory evidence. Some of the researches indicate that there are no substantial age effects on sustainable consumption (Diamantopoulos et al., 2003), whereas some studies indicate that older consumers are more willing-to-pay because of higher disposable income and financial stability (Gilg et al., 2005). Within the framework of sustainable fashion in particular, younger consumers might have more pro-environmental orientations (Niinimäki, 2010), but their purchasing power might limit the real willing-to-pay against more established, older consumers.

Rationale: These contradictory results indicate that the age effects might be context-specific, and they differ depending on the product category, price level, and the cultural background. Considering the fact that younger generations can be arranged as more environmentally conscious, they can attach more importance to bio-based clothes a product feature that has a direct relation to environmental benefits. Thus, a negative correlation will be worked out, with younger consumers having a higher WTP.

H3: There is a negative relationship between age and WTP of bio clothing.

### **2.3.2 Gender Differences**

Another studied demographic variable used in sustainable consumption studies is gender. Literature indicates that women tend to be more concerned and involved in sustainable practices, and more environmental care than men as a general rule (Zelezny et al., 2000). It is

a difference of gender that has been credited to a range of factors including socialization processes, value orientations as well as risk perceptions (Davidson & Freudenburg, 1996). When it comes to fashion consumption, in particular, it has been shown that women are more interested in fashion and tend to be more conscious of the sustainability considerations in their buying choices (Joy et al., 2012). Nevertheless, there are conflicting findings to studies that investigate gender disparities in WTP regarding sustainable fashion. Although certain studies indicate that women are willing to pay even more premiums on sustainable fashion (McNeill & Moore, 2015), other studies do not command any significant differences between the genders (Lundblad & Davies, 2016).

Rationale: Past studies have extensively reported gender variations in sustainable consumption. Women are usually discovered to have a greater concern with the environment, ethical awareness, and particular activity in responsible consumption practices. The processes and value orientations of socialization might lead to the women being more focused on sustainability-related features in the purchasing choice. Females, in general, are more prone to fashion consumption and can thus be more concerned with such aspects of fashion sustainability as ethical sourcing or reuse. Nevertheless, the evidence on the differences between genders on WTP to sustainable fashion is inconclusive. Considering these theoretical factors and empirical contradictions, it is theorized that there exist gender differences in WTP of second-hand clothing.

H4: There is a gender difference in second hand clothing WTP.

### **2.3.3 Income Effects**

Income is one of the most reliable forecasts of WTP of sustainable products in different spheres of consumption. According to the economic theory, sustainable products, which are often sold at a higher price, are normal goods where the demand rises with income (Khan & Mohsin, 2017). This suggestion is mostly supported by empirical studies and several studies have reported positive correlations between income and WTP of sustainable products (Laroche et al., 2001).

Research by Gleim (Gleim et al., 2013) in the fashion industry revealed that income had a positive correlation with WTP to sustainable apparel in which the high-income earners were ready to pay a 20-30 percent premium on sustainable fashion products. The same results have been obtained in European setting, such as the research of Italian consumers (Testa et al., 2021a).

Rationale: According to the economic theory, the demand of sustainable fashion products which usually have a price premium is a normal good that responds to the income level of the consumer as it grows. With increased disposable income, people have fewer budget limitations and thus are better placed to bear the extra expenditure in regard to moral production, natural materials or equitable labor standards. Empirical experiments on sustainable consumption have continued to show a positive income-WTP correlation in purchasing environmentally friendly products. Additionally, the higher-income consumers might view sustainable fashion as a quality approach in connection with premium positioning in the Italian context of the luxury-oriented market, where quality and craftsmanship are of great importance. Thus, the income will have a positive impact on WTP of sustainable fashion products.

H1: There is a positive impact of income on WTP to sustainable fashion

#### **2.3.4 Education and Environmental Awareness**

Education is another demographic factor, which is often associated with sustainable consumption. The level of education is also considered to have higher levels of environmental knowledge, awareness and concern (Franzen & Meyer, 2010). It has been proposed that this connection occurs in different ways such as the exposure to more environmental information, the acquisition of critical thinking skills, and socialization into environmental values in higher education institutions (Meyer, 2015).

Specifically, in case of sustainable fashion consumption, it is proposed that education not only contributes to the awareness of the problem of sustainability but also to the WTP of sustainable fashion products (Joung, 2014). The intensity of this relationship however differs

with the various works conducted as well as cultural set ups where some studies claim that the influences of education can be mediated by the environmental attitudes and values.

Rationale: Higher education exposes people to more information about the environment and also cultivates thinking ability that enables them to comprehend sophisticated sustainability concerns. This awareness and understanding should result in better environmental attitudes. Although the direct linkage between education and environmental concern is a well-documented hypothesis in the literature, the hypothesis is tested whether this trend is true within the Italian context.

H5: College education results in better sustainability attitudes.

## **2.4 Psychological Determinants**

### **2.4.1 Environmental Attitudes and Concerns**

Among key constructs in the area of sustainable consumption, there are environmental attitudes. The New Environmental Paradigm (NEP) scale that was created by Dunlap and Van Liere (Gleim et al., 2013) and was revised by Dunlap (Dunlap et al., 2000) has been extensively adopted to gauge the general environmental attitudes. Studies have shown that there is always positive correlation between environmental attitudes and different types of sustainable consumption like organic food purchases, conservation of energy, and adoption of green products (Davidson & Freudenburg, 1996).

Environmental attitudes have also been associated with several types of sustainable behaviors in fashion consumption such as buying eco-friendly clothes, wearing second hand clothes and clothes care (Goworek et al., 2012). The attitude-behavior relation is however not always as strong, the results of some studies indicate a strong relation while some others indicate weak or inconsistent relations (Kollmuss & Agyeman, 2002).

Rationale: Due to weak empirical data and documented attitude-behavioral gap in sustainable consumption, there is uncertainty whether general environmental concern would be

translated into a particular financial investment into recycled clothing. Financial cost implicated might supersede the environmental intentions and as a result, the expectation is that there will be no significant relationship.

H2: There is no relationship between environmental concern and WTP of recycled clothing.

#### **2.4.2 Pro-environmental Behaviors**

Pro-environmental behaviors are those whose actions are conscious in attempting to reduce the adverse effects of what one does to the natural environment (Steg & Vlek, 2009). Such actions cut across different spheres, such as saving energy, minimizing waste, transportation, and consumption habits. Studies indicate that pro-environmental behaviors do cluster whereby those who have taken up one form of pro-environmental behavior have a higher tendency of adopting others (Thøgersen & Ölander, 2006).

Pro-environmental behaviors in fashion consumption could involve buying second-hand clothes, buying durable over disposable clothes, repairing instead of disposing/recycling clothes, and using environmentally friendly materials (Cox et al., 2013). The connection between general pro-environmental behaviors and individual fashion consumption choices is a rather crucial field of study.

#### **2.4.3 The Attitude-Behavior Gap**

Attitude-behavior gap, which is the difference between favorable environmental attitudes and the real sustainable practices, is one of the most persistent issues in regards to sustainable consumption research (Carrington et al., 2010). This has been noticed in a number of consumption areas such as fashion (Joergens, 2006). Several hypotheses have been put forward among them being situational constraints, social norms, habits, and perceived effectiveness (Kollmuss & Agyeman, 2002).

The attitude-behavior gap can be especially high in fashion in particular because of fashion trends, social pressures, and emotionality of fashion consumption (Joy et al., 2012). This gap is one of the main issues that need to be comprehended and tackled by the researcher and practitioner with the aim to encourage sustainable consumption of fashions.

## **2.5 The Italian Fashion Consumer Context**

### **2.5.1 Cultural characteristics**

The Italian customer is a very unique niche in the fashion industry in the world and is known to value quality, craftsmanship and beauty (Romana Rinaldi & Testa, 2017). These are the cultural aspects that affect the way Italian consumers undertake sustainability in fashion. The Italian consumers are likely to consider sustainability as an aspect of quality and not a differentiated consideration, unlike consumers in some other markets who may consider environmental factors over other qualities (Grazzini et al., 2021).

The studies on the attitude of Italian consumers towards sustainable fashion indicate that the interest towards sustainability is increasing, but in a very Italian specific way. As an example, research indicates that Italian customers especially perceive traceability and authenticity of sustainable fashion to be important, which is also indicative of cultural values of craftsmanship and tradition (Cervellon & Carey, 2011).

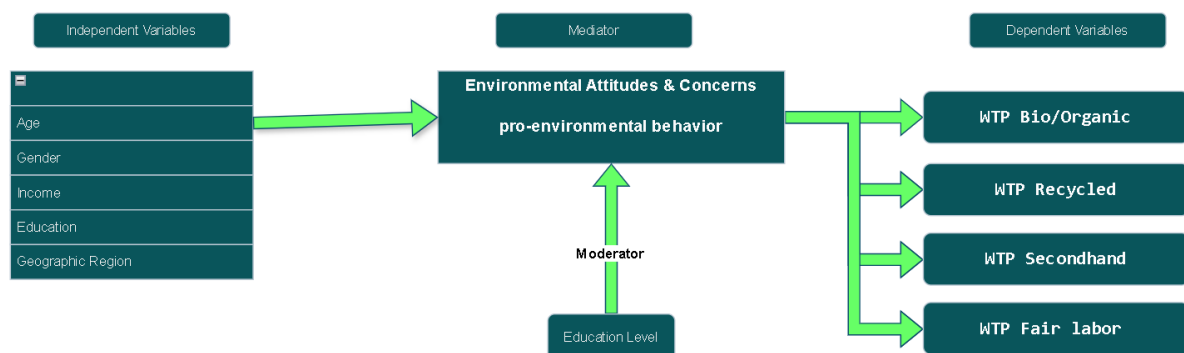
### **2.5.2 Market characteristics**

Italian fashion market has its peculiarities concerning sustainable fashion consumption. Italy is a country of many luxury brands that are starting to incorporate sustainability into their business models and usually focus on the sustainability benefits in terms of traditional craftsmanship and local production (Testa et al., 2021b). At the same time, the market of second-hand and vintage fashion is becoming more popular in Italy, especially among younger customers (Rinaldi, 2020).

The differences in Italy as a region is also a factor of consideration. Northern Italy with the increased average level of income and more exposure to the international trends might have dissimilar sustainable consumption patterns than Southern Italy (Corti et al., 2023). Learning about such regional diversities is a significant point of sustainable fashion marketing in Italy.

## 2.6 Summary and Conceptual Framework

Based on the literature review, this paper constructs a comprehensive conceptual concept to describe the willing-to-pay (WTP) by Italian consumers to sustainable fashion. The model is a multi-level framework that integrates both demographic and psychological factors. It presupposes that WTP does not have an individual cause but rather arises out of the association between the structural attributes of consumers and inner value-related orientations.



**Figure 1.** Conceptual framework

On the initial stage, the demographic variables (age, gender, income, education, and region) will have a direct impact on WTP as evidence with economic and consumer behavior theories. On the second level, it is possible to identify psychological determinants like environmental concern and pro-environmental behavior, which are the internal processes of shaping sustainable consumption decision. These psychological aspects could mediate the association between the demographic variables and WTP.

Moreover, the effects of interaction are taken into consideration. Specifically, education might buffer the correlation between income and WTP because education level could lead to the development of environmental consciousness and become more sensitive to sustainability-related information.

Lastly, WTP is analyzed under four types of sustainable fashion, namely bio/organic materials, recycled materials, second-hand clothing, and fair labor conditions, noting that the determinants can change depending on the particular sustainability attribute under study. This combined approach will enable a thorough evaluation of direct and indirect effects on WTP to consider the contextual variations of the Italian market.

## **3 Methodology**

### **3.1 Research Design**

The proposed study is based on a quantitative and cross-sectional research design to investigate the determinants of willing-to-pay (WTP) of Italian consumers to sustainable fashion. The quantitative method is suitable to consider the aim of the study to determine statistical links among demographic factors, environmental attitudes, and various WTP measures in relation to various aspects of sustainability (CRESWEL, 2009). The survey data is organized and the multivariate statistical methods are involved in order to surpass the descriptive information and offer a full empirical evaluation of the mechanisms that govern sustainable fashion consumption. The cross-sectional design allows gathering data on a fairly large and diverse sample of Italian consumers at one moment, which will allow analyzing the correlation of variables like income, education, environmental concern, and WTP of the attributes of sustainable fashion.

Cross-sectional designs are the most efficient and effective in conducting a study related to sustainability and consumer behavior, although they do not provide a possibility of causal inference (Joshi & Rahman, 2015). This research has mediation and moderation analysis (to deal with the causal complexity partially) and exploratory structural modeling methods (so that more detailed indirect relationships between variables and conditional ones could be interpreted).

### **3.2 Data Collection**

#### **3.2.1 Survey Instrument Development**

The information used in this research was not gathered by the researcher, but a secondary source of data was used to acquire this information. In particular, the data were obtained in Zenodo, which is an open-access repository of research data, as part of the record entitled Survey on sustainable fashion consumption (Colasante & D'Adamo, 2022). The dataset authors

created the original survey tool to explore consumer attitudes, behaviors and willing-to-pay in regard to sustainable fashion consumption.

The questionnaire tool was created by the original authors to reflect consumer attitudes, behavior and willing-to-pay regarding sustainable fashion consumption. The tool contains questions of demographic and environmental attitudes, pro-environmental behavior, willing-to-pay on different sustainable fashion qualities (bio/organic materials, recycled materials, second-hand clothing, and fair labor conditions). The instrument is composed of ordered questions, which are categorized in various sections that comprise demographic traits, environmental attitude, behavioral inclination, and willingness-to-pay indicators among various dimensions of sustainability. The willingness-to-pay variables were operationalized by means of numerical values indicating the highest premiums respondents were willing to pay on sustainable fashion qualities such as bio/organic materials, recycled materials, second-hand clothes, and fair working conditions.

There was demographic data (age, gender, education, and income) to enable multivariate analysis and segmentation. The initial collection of incomes was done in categorical scales and it is usual in the survey research to ease the load on the respondents and improve the response rates (Hughner et al., 2007b). Midpoint estimation was used to convert these ranges into continuous variables in the process of data preprocessing.

Despite the fact that the researcher is not the one to create the original survey tool, the dataset was considered to be appropriate to serve the purposes of the present research since the concept it captures is well-conceptualized in the literature on sustainable fashion and covers all the determinants of sustainable consumption, both demographic and psychological. The transparency, reproducibility, and scholarly integrity of the current study are increased by the fact that a validated and publicly available survey instrument will be used.

### **3.2.2 Sampling Procedure**

The research used non-probability convenience sampling method that included Italian consumers who were 17 years of age and above. This design is typical of exploratory and explanatory consumer research, and when the aim is to describe patterns and relationships but not the generation of nationally representative estimates (Bryman, 2016).

The obtained sample size (a total of 401 valid responses) is larger than the suggested minimum requirement of multivariate statistical methods including regression analysis, factor analysis, and cluster analysis (ElNakib et al., 2021b). There was a variety of respondents with different demographic traits in the sample in terms of age, gender, income and education, which was adequate enough to conduct meaningful statistical analysis.

Despite the constraints in terms of generalizability, convenience sampling is suitable in exploratory studies where one wants to define the patterns and relations in a particular context of consumers with the support of strong statistical analysis and clear reports about the limitations (Etikan, 2016).

### **3.2.3 Data Collection Process**

The analyzed data of this work were gathered by the authors of the original study and shared in open access in the Zenodo open-access database (Colasante & D'Adamo, 2022). Consequently, the current study will be based on a secondary data analysis methodology, which is the reuse of previous information to answer new research questions or elaborate on previous studies (Johnston, 2014).

As can be seen in the dataset documentation, the data collection was done through online survey approach, and the targeted consumers were adults and concentrated on the behavior of consuming sustainable fashion. Consumer research also heavily relies on the use of online surveys because they are efficient, accessible, and allow reaching respondents who are geographically diverse (Evans & Mathur, 2018). final observations of dataset will give enough power in statistical analyses like regression, factor and cluster analysis.

The dataset was first screened and cleaned by the authors themselves before their publication on Zenodo, in order to eliminate incomplete responses and inconsistencies. Only anonymized responses are provided in the publicly available dataset, which makes no disclosure of any personally identifiable information. This is what makes the dataset appropriate to be used in other scholarly activities and at the same time meet the requirements of data protection acts. To address the aims of this paper, further data preprocessing was done so as to match the data according to the particular research objectives. This involved processing of missing values, transformation of categorical variables into numerical forms and building composite indices of environmental concern and pro environmental behavior. The income groups including prefer not to answer were also regarded as missing values and omitted in income-based analyses, which are the best practices in survey-based research.

There are a number of benefits associated with the use of secondary data. To begin with, it allows making good use of the available high-quality data, minimizing time and resource demands. Second, it enables the replication and expansion of previous studies, which will add to the development of cumulative knowledge in sustainable fashion research (Bryman, 2016). Nevertheless, the analysis of secondary data has its own limitations, including the loss of control over the design and sampling of a survey. These shortcomings are realized and overcome by attentive methodological transparency and prudent interpretation of findings.

### **3.3 Variables Measurement**

#### **3.3.1 Dependent Variables (WTP measures)**

The main dependent variable in this study is the willing-to-pay-a-price-premium of all features of sustainable fashion by consumers. In the traditional practices of contingent valuation and consumer behavior studies, it was operationalized using the upper monetary value that the respondents were willing to pay on top of a market price in a conducive market (in case of a product with a certain quality of sustainability. This method directly represents the economic worth of the non-functional, ethical, and environmental value of the product by consumers. There were four WTP measures, which are:

- WTP for bio/organic clothing: The respondents were willing to pay for garments made from organic or bio-based materials.
- WTP of recycled-material clothing: The price-premium of pre-owned or vintage clothing products.
- WTP for second-hand clothing: The price-premium of pre-owned or vintage clothing products.
- WTP of clothing which are made under fair labor: The value added to the clothing that has been invested in and that is certified or believed to have been produced in a manner that is ethical and fair in terms of labor conditions.

Questionnaires were to have a numerical response to respondents indicating the highest price difference (in Euros) they would be prepared to pay on a clothing product that had each of these characteristics as compared to a conventional substitute. This is an open-ended question format that is quite popular and frequently observed in the survey-based studies to get the values of WTP, and this format offers the interval level of data which can be analyzed using parametric statistical tests.

The WTP values are indeed highly variable when comparing the values among the respondents as depicted by the descriptive statistics which validates high heterogeneity in the consumer values of these various aspects of sustainability. This is the variability that is required in the later examination of the determinants of WTP. Results of descriptive statistics point to a significant dissimilarity among the respondents, which implies a significant heterogeneity in consumer preferences.

### **3.3.2 Independent Variables (Demographics)**

The major independent variables are:

- Age, measured in years.
- Gender, which is a binary variable.
- Income, a continuous variable based on income reported ranges.

- Education level, which is an ordinal coded education level starting at primary education to the doctoral level.

These are some of the most frequently utilized predictors in sustainable consumption studies, and they have been demonstrated to have an impact on environmental attitudes and purchasing behavior.

### **3.3.3 Mediating and Moderating Variables**

The environmental concern was measured as a composite index, which was created by averaging several Likert scale items based on environmental awareness and concern. A similar measurement of pro-environmental behavior was conducted based on a composite index to reflect the behavioral tendencies.

The environmental concern was also examined as a mediating variable in the relationship between income and WTP, after the due mediation analysis procedure (Baron & Kenny, 1986). Education was theoretically investigated as a possible moderating factor, and it indicates its influence on the translation of income into consumption decisions concerning sustainability.

### **3.3.4 Control Variables**

Control variables were factored to explain other reasons and minimize omitted bias of the variables. These consisted of age and gender, which are proved to have an impact on the environmental attitudes and consumption behavior (Joshi & Rahman, 2015).

## **3.4 Data Analysis Techniques**

### **3.4.1 Descriptive Statistics**

To summarize the central tendencies and the dispersion of all the key variables, descriptive statistics was applied. Mean, standard deviation, minimum and maximum values were calculated. The findings give an idea of the sample characteristics and show that there is a significant difference in WTP and income levels, which are adequate to justify the next inferential analysis.

### **3.4.2 Correlation Analysis**

Pearson correlation coefficients were computed before the actual testing of hypotheses in order to test the bivariate relationships between the variables under study. As anticipated, there were positive relationships between the various measures of WTP ( $r = 0.559$  to  $r = 0.877$ ), which indicates that consumers who appreciate one characteristic of sustainability are likely to appreciate other characteristics as well. Nevertheless, since these correlations do not directly test hypotheses of the study, more detailed results are provided in the next section of the hypothesis testing, where each of the hypothesized relationships is tested systematically.

### **3.4.3 Hypothesis Testing**

Pearson correlation analysis and independent samples t-tests were used to test the six hypotheses of the research and statistics significance was examined at  $\alpha = 0.05$ . H1 which stated that income and WTP would have a positive relationship was supported in all the sustainable fashion traits with the highest correlation being seen in the bio-based clothing ( $r = 0.250$ ,  $p < 0.001$ ). H6 in which it is predicted that there will be regional differences in WTP was confirmed and Southern Italy was marked with a significant WTP as compared to Northern Italy. The H2, H3, H4 and H5 were not upheld because environmental concern, age, gender and education did not show significant correlation to the corresponding WTP measures.

#### **3.4.4 Multiple Regression Analysis**

The joint effects of the environmental attitudes and demographic characteristics on WTP were evaluated by using multiple regression analysis. To make the standardization of independent variables, the independent variables were standardized before estimation. The regression model has described around 15.9 percent of the variance in WTP of bio/organic clothing, which means that the demographic and attitudinal aspects are essential, but other variables can have an impact on the purchase of sustainable fashion.

#### **3.4.5 Factor Analysis**

Principal component analysis (PCA) was used to perform the exploratory factor analysis on the items of environmental concern to investigate the underlying structure of the items. Viewing its results, one may think that there is a prevailing factor and it is better to use a composite environmental concern index. PCA has become a popular method in sustainability studies to shrink the dimensions and confirm latent constructs (ElNakib et al., 2021a).

#### **3.4.6 Cluster Analysis**

The cluster analysis was conducted on the k-means algorithm to consist of a separate group of consumers according to the demographic traits, environmental concern, and WTP. The silhouette score means that there is a moderate separation of the clusters implying that there are meaningful yet overlapping consumer segments. This grouping offers useful information on specific sustainability marketing approaches.

### **3.4.7 Advanced Statistical Techniques**

#### **3.4.7.1 Mediation Analysis**

Every program was performed on a mediatory basis that is the mediation analysis to figure out whether environmental concern mediates the relationship between income and WTP. The analysis gives valuable evidence on the complexity of psychological processes behind sustainable consumption, although the indirect effect has been estimated to be insignificant.

#### **3.4.7.2 Moderation Analysis and Structural Equation Modelling**

Structural equation modeling and moderation were conceptually discussed to bring together various relationships in a logical analysis. These sophisticated methods enable the analysis of both direct and indirect impacts at the same time and aid in elaborating on a complex explanatory framework.

### **3.5 Ethical Considerations**

Ethical considerations are an important aspect of empirical studies especially when research involves human related information. The current study follows the set of ethical guidelines of social science research, even though it uses secondary data only, which is provided in an open-access repository. The data employed in this study was obtained in Zenodo, a platform that advocates the idea of open science and keeps ethical and legal requirements relating to the dissemination of data.

The dataset authors did the initial data collection, and informed consent was taken by them. As stated in the documentation of the dataset, the respondents took part in the survey on a voluntary basis, and it was made clear that the survey was conducted on the purpose of the research, and that the information will be anonymous and that the respondent may drop out any time. None of the personally identifiable information was gathered, so the participants remained anonymous and confidential.

Ethical risks are low in the view of the current study since the researcher had no direct contact with the subjects and he did not affect the data collection process. The data only has the anonymized responses, which does not involve the risks associated with privacy breaches or the identification of the participants. It is also consistent with ethical standards of secondary data analysis, which focus on respect towards initial consent agreements and responsible use and utilization of data (Bryman, 2016).

The use of data was strictly academic, and data were analyzed according to the scopes spelled out by the original dataset license. The data source has been appropriately referenced throughout the thesis and this has ensured transparency and academic integrity. The reference to the Zenodo record does not only recognize the contribution of the original authors but also enables other researchers to verify and replicate the analysis which in turn promotes open science concepts.

Moreover, the research satisfies the General Data Protection Regulation (GDPR), according to which the researcher does not process, store, or exchange any personal data. The dataset contains no names, contact information or IPs or any other possible identifiers that can be attributed to individual respondents. All data analyses were presented based on aggregate data and only presented in a summary form.

Lastly, ethical responsibility is also applicable in honest and truthful reporting of findings. The researcher has been keen to ensure that there is no data manipulation, selective reporting or exaggeration of findings. Restrictions linked to the usage of secondary data, self-reported scales, and sampling issues are clearly recognized in order to have an equal and accountable interpretation of the results.

### **3.6 Data Quality and Validity**

The quality and validity of data is crucial to coming up with a valid and significant research results. There are a number of steps that were followed to evaluate and improve the quality and validity of the secondary data collected on Zenodo in this study.

To begin with, the data set has an acceptable degree of data completeness of 401 useable observations in most of the variables. The lack of values was treated in a systematic manner with non-responses like prefer not to answer considered as missing and not part of the analytical results of the research. This will minimize the possibility of bias and will uphold the data integrity.

Second, the construct validity was also taken care of as the established measurement scales were utilized. The measure of environmental concern and pro-environmental behavior was done through multiple Likert-scale items based on the previous literature. These items were averaged to form composite indices, which is common and accepted with sustainability research (ElNakib et al., 2021a). The factor analysis findings also contribute to the unidimensional of the environmental concern construct which does mean that the items define a consistent underlying concept.

In sum, the dataset has sufficient quality and validity to provide a strong empirical base for studying the factors of willingness to pay for sustainable fashion.

### **3.7 Research results**

#### **3.7.1 Data Screening and Preliminary Analysis**

The following section gives the preliminary analysis of the dataset before testing of the hypothesis and sophisticated statistical analysis. Screening of data was done to examine the completeness of responses and to determine missing values and to set up variables to be used in further analysis. These processes guarantee dependability, authenticity and appropriate dataset to be used in inferential statistics.

### 3.7.1.1 Response Rate and Sample Characteristics

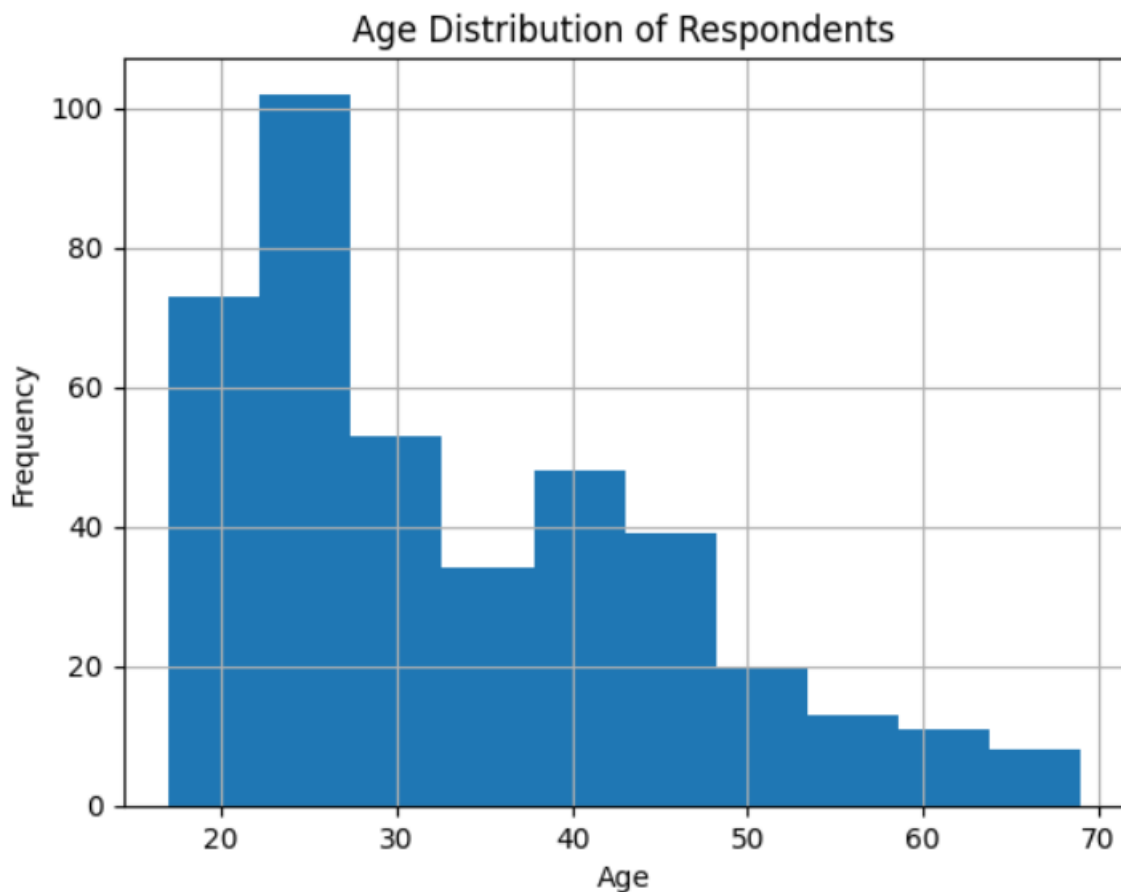
The ultimate data set was 401 valid responses that were all maintained to be analyzed after screening (Table 1). Since the data were sourced through a secondary source, the response rate would be preset; nevertheless, the sample size was deemed sufficient to conduct multivariate statistical analyses, such as regression, factor analysis, and clustering, which were above the usually recommended sample rates (Joseph F. Hair *et al.*, 2019).

**Table 1.** Demographic Feature of data

Variable	Category / Statistic	Frequency (n)	Percentage (%)
Gender	Male	244	60.85
	Female	157	39.15
	<b>Total</b>	<b>401</b>	<b>100.00</b>
Age (years)	Mean	33.54	
	Standard Deviation	11.95	
	Minimum	17	
	Maximum	69	
Income (€)	Mean	27,469.70	
	Standard Deviation	18,740.73	
	Minimum	7,500	
	Maximum	87,500	
	Valid Responses	330	82.29
	Missing	71	17.71
Education Level	Lower secondary or below		
	Upper secondary (Diploma)		
	Bachelor's degree		
	Master's degree		

	Doctoral degree		
	Mean (ordinal)	3.62	
Region	Northern Italy		
	Central Italy		
	Southern Italy & Islands		
	<b>Total</b>	<b>401</b>	<b>100.00</b>

The demographic features of the respondents (gender, age, income, education level, and geographical region) were summarized using descriptive statistics. The findings suggest that the sample is demographically diversified, as there is inequality in socioeconomic status and geographic distribution of regions in Italy.



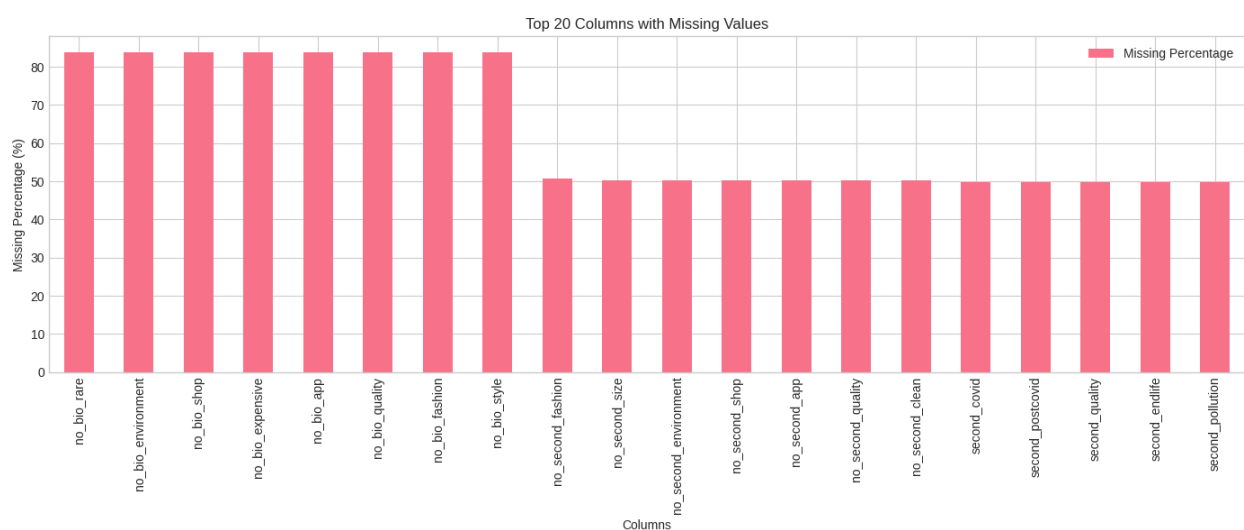
**Figure 2.** Age distribution of Respondents

The analysis of the age group showed that there was a wide spectrum of respondents, which represented both younger and older age categories of the consumer populations. The distribution of genders was also fairly balanced and made it possible to make significant comparisons between them in the later analyses. There was enough variability in income and education levels to provide hypothesis test concerning socioeconomic determinants of willingness-to-pay (WTP). The sample population was residents of various Italian regions, which made possible the analyses of the regional comparisons.

### 3.7.1.2 Missing Data Analysis

A missing data analysis was done to measure the completeness of data and to determine the possible trends of non-response. Absent values were analyzed among all the variables and the absolute counts and percentages were obtained.

It has been found that a majority of core variables, such as demographic variables and WTP variables, had low rates of missingness, and that levels fell within acceptable limits of social science research (usually less than 10%). Some of the variables, especially the variables that were income-based, had greater percentages of missing data, most of which were probably because the respondents chose not to disclose them. This is the same trend as with previous consumer studies where sensitive financial data is being dealt with.



**Figure 3.** Columns with missing values

In order to graphically summarize the distribution of missing data, a bar chart to reveal the most missing percentage variables was created. The given visualization helped to outline the variables that need special attention in the process of data preparation.

### 3.7.1.3 Data Cleaning and Preparation

After screening data, a systematic data cleaning process was introduced to prepare the data in order to be analyzed. Categorical variables were also recoded into numbers where necessary. Gender transformed into binary variable whereas education level was encoded into ordinal variable based on the growing levels of education.

**Table 2.** Data Cleaning Process

Variable Group	Examples of Variables	Missing Before Cleaning (%)	Action Taken	Missing After Cleaning (%)
Bio clothing barriers	no_bio_* variables	83.79	Excluded from multivariate analysis	—
Second-hand barriers	no_second_* variables	~50.37–50.62	Excluded from multivariate analysis	—
Second-hand perceptions	second_* variables	~49.88	Retained for descriptive analysis only	~49.88
Demographics	age, gender, education	<5	Retained	<5
Income	income	17.71	Midpoint conversion + missing retained	17.71
WTP variables	wtp_*	<1	Retained	<1

Income was operationalized through a midpoint method of dealing with response ranges, a fairly popular approach in economic research survey related studies. The answers that showed the unwillingness to reveal income were considered as the missing values. Variables which

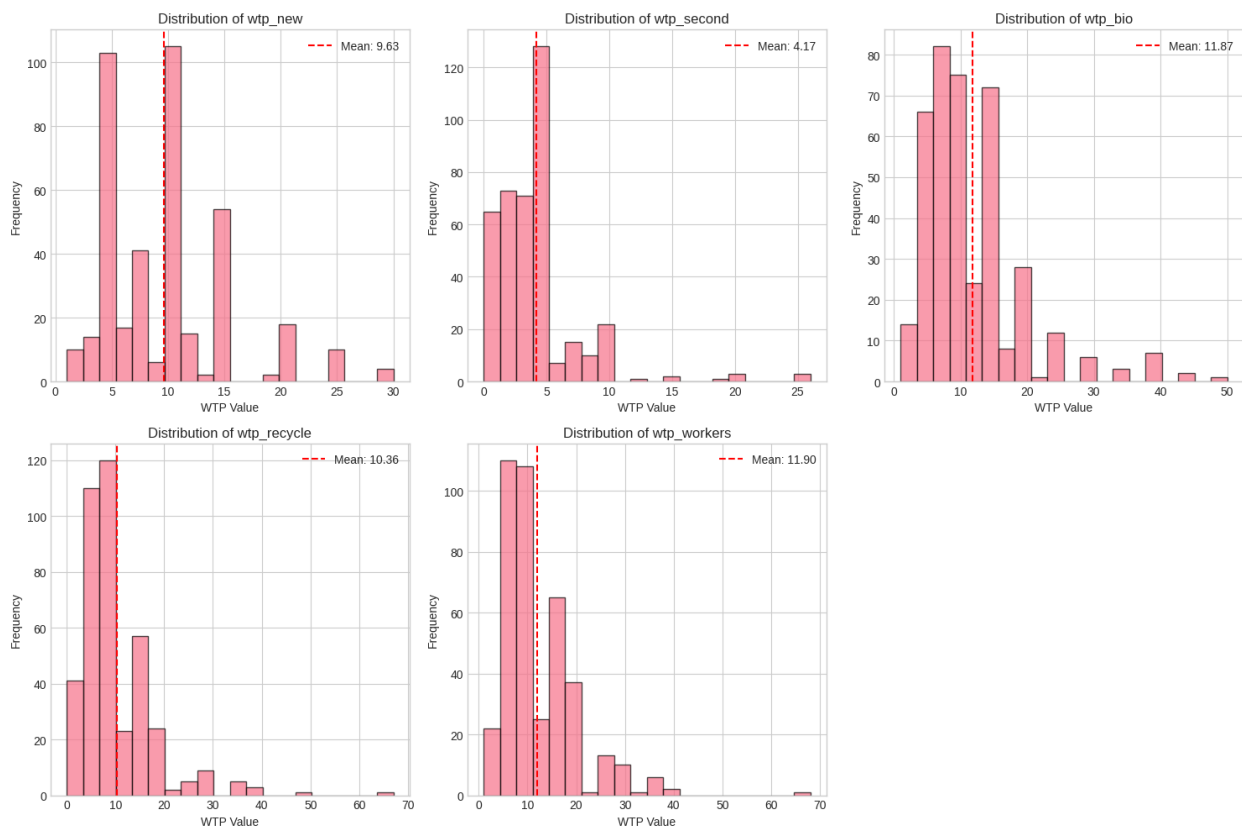
involved willingness-to-pay were coded into numeric forms to avoid the incompatibility with parametric statistical methods.

Before and after cleaning, the level of missing data was compared, and there was no significant loss of data, so the preparation process did not lead to the loss of integrity of the dataset. The cleaned data was considered to be suitable to the descriptive, inferential and multivariate analysis.

### 3.7.2 Descriptive Statistics of Key Variables

#### 3.7.2.1 Willingness-to-Pay Distributions

Below figure gives the distributions of willingness to pay (WTP) of the five sustainability-related clothing attributes; the new sustainable clothing (wtp\_new), the second-hand clothing (wtp\_second), bio-based clothes (wtp\_bio), recycling initiatives (wtp\_recycle) and fair treatment of workers (wtp\_workers). All the variables are expressed in monetary units and have 401 valid observations.



**Figure 4.** Descriptive Statistics of Key Variables

On the whole, the distributions are characterized by positive skewness with the concentration of responses in the lower and moderate levels of WTP and a smaller number of responses in the high values, which is also reflected by the large maximum values as compared to the medians as well. This is common with contingent valuation studies, with a small proportion of the respondents indicating much more willingness to pay.

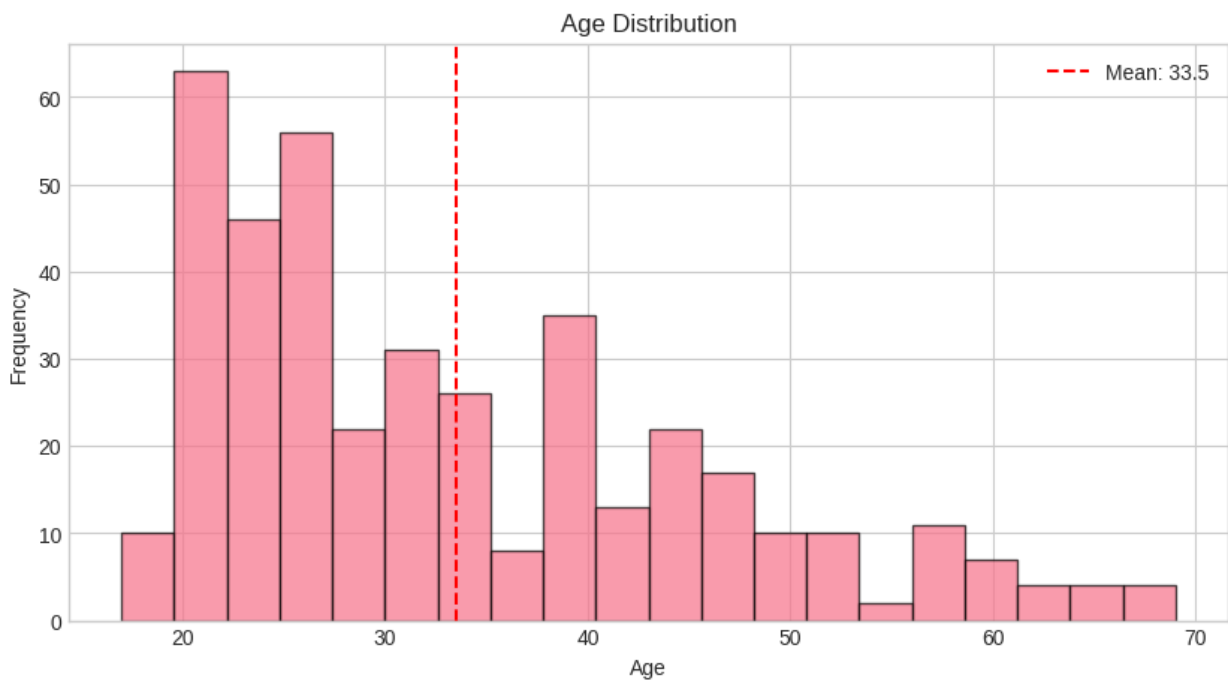
**Table 3.** Data distribution table

	wtp_new	wtp_second	wtp_bio	wtp_recycle	wtp_workers
count	401.00	401.00	401.00	401.00	401.00
mean	9.63	4.17	11.87	10.36	11.90
std	5.42	3.54	7.83	7.88	7.69
min	1.00	0.00	1.00	0.00	1.00
25%	5.00	2.00	6.00	5.00	6.00
50%	10.00	3.00	10.00	8.00	10.00
75%	12.00	5.00	15.00	15.00	15.00
max	30.00	26.00	50.00	67.00	68.00

The second-hand clothing has the lowest WTP (Mean = 4.17; SD = 3.54), and the median = 3, which means that the likelihood of consumers being willing to pay a premium price on second-hand clothing is not too high. Bio-based clothing and the treatment of fair workers, on the contrary, receive the greatest average values of WTP (Mean = 11.87 and 11.90 respectively), indicating that consumers value more environmental materials and ethical labor conditions. The WTP of new sustainable clothing (Mean = 9.63; Median = 10) and recycling programs (Mean = 10.36; Median = 8) is between these extremes. The consumer preferences are heterogeneous as the range of values of the recycling and workers variables is especially large (maximum of 67 and 68, respectively). The dispersion indicates that although there is an average support, there is a significant difference in the willingness to pay among the respondents.

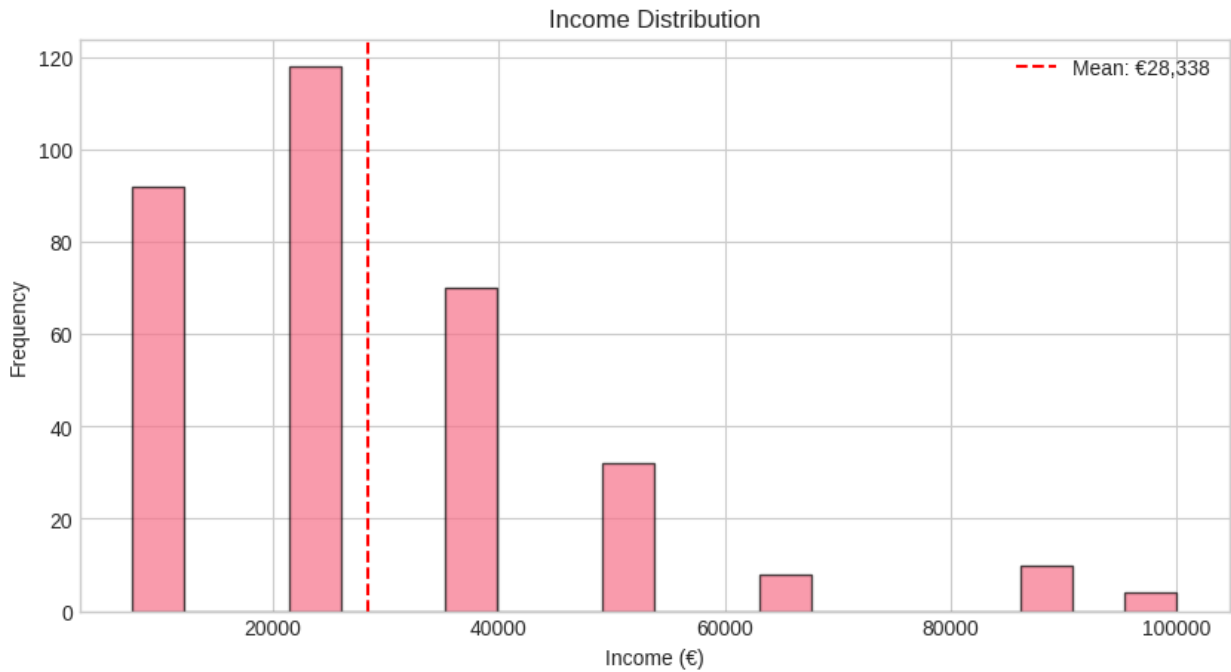
### 3.7.2.2 Demographic Distributions: Age and Income

The charts below are a chart of distributions of respondent age and annual income. The sample age mean is 33.5 years and the median age of 30 years shows that the sample is relatively young. The sample is between 17 to 69 years old, which implies that there is sufficient representation in the early adulthood stages to the later working age population. There is moderate right skew in the distribution, whereby there are less older respondents, which conforms to online survey-based data collection.



**Figure 5.** Age distribution

The levels of annual incomes have a greater dispersion. The average mentioned income stands at EUR28,338 since the median income is lower at EUR22,500, which corresponds to the right skewed distribution owing to the few high-income earners. Such skewness justifies the application of median and strong estimation in future correlation analysis when adding income in the analysis as an explanatory variable.



**Figure 6.** Income Distribution

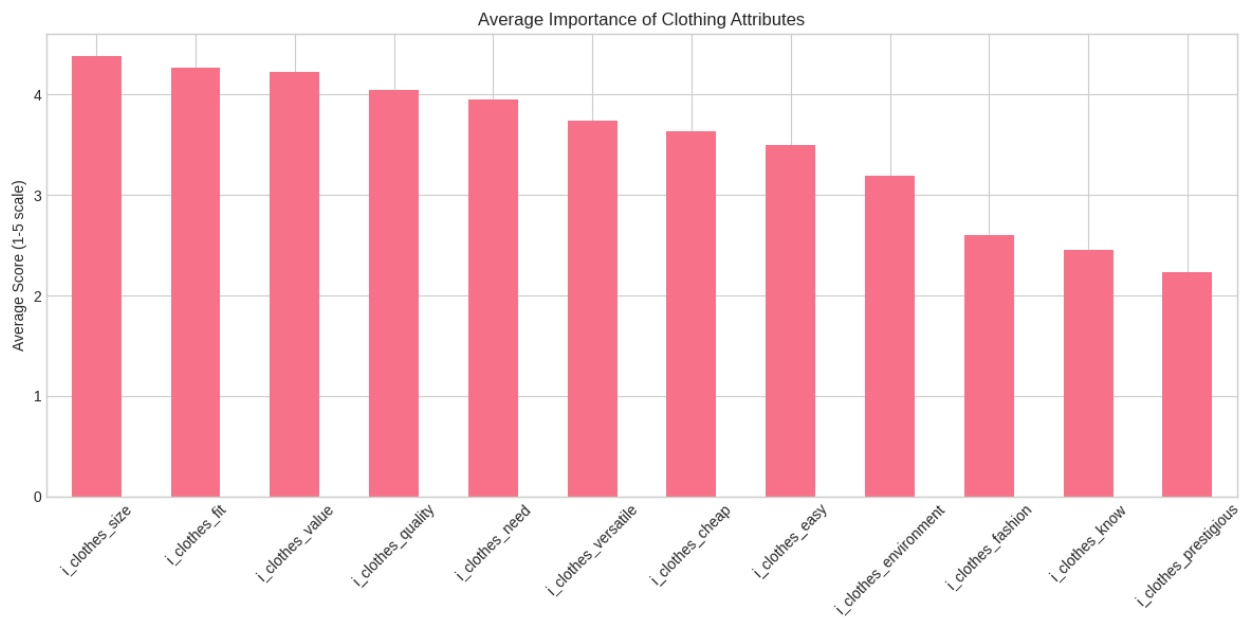
It is also important to include these demographic distributions as they give valuable context to consumer willingness-to-pay findings because age and income are usually linked to variations in sustainability preference as well as purchasing power.

### 3.7.2.3 Clothing Importance Perceptions

The figure below explains the rating of the respondents concerning the attributes of importance of clothes. These variables represent the comparative value attached to functional, economical, and sustainability-related issues of clothing consumption.

In general, the most significant values of respondents are practical and functional qualities, such as size (Mean = 4.38), fit (Mean = 4.26), value for money (Mean = 4.23), quality (Mean = 4.04), and basic necessity (Mean = 3.96). These findings imply that utilitarian issues prevail in the purchase of clothing.

It is moderately rated in the areas of versatility (Mean = 3.74), ease of use (Mean = 3.50), and affordability (Mean = 3.64). Conversely, symbolic and status-related attributes are rated lower and prestige (Mean = 2.23) and fashion (Mean = 2.61) are the least significant aspects.

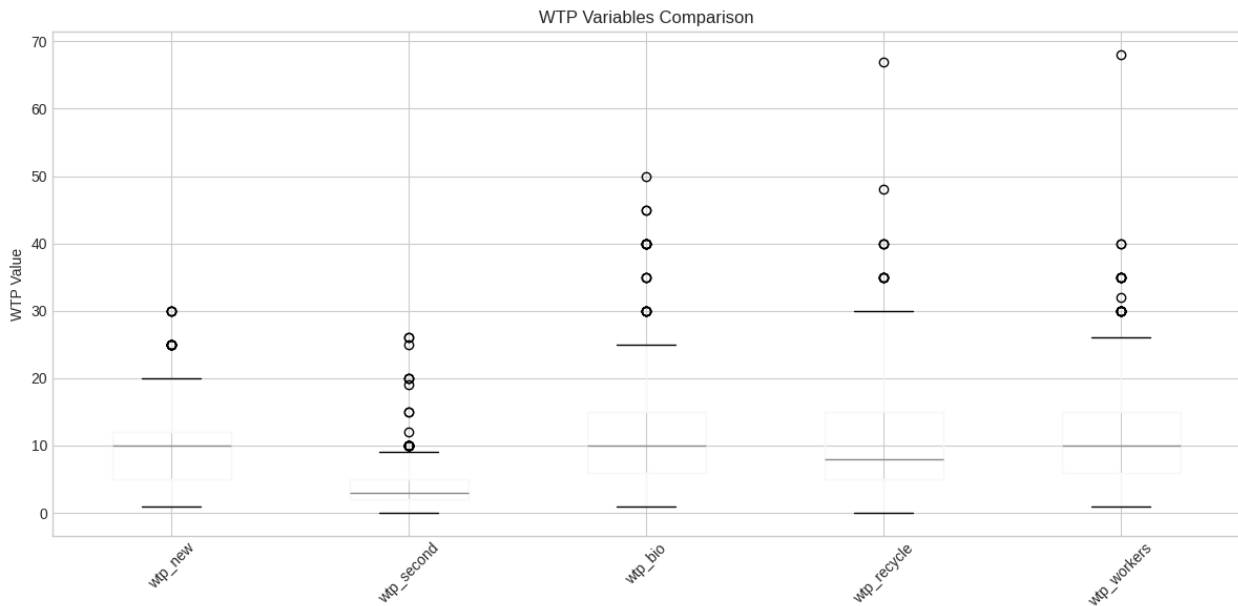


**Figure 7.** Importance of Clothing Attributes

The importance of environmental factors (*i\_clothes\_environment*, mean = 3.19) is moderate which means that there is awareness of the problems related to sustainability, however, it can be suggested that the environmental characteristics are of less significance compared to fit, quality, and value when choosing clothes. This observation is consistent with previous WTP outcomes, in that, the respondents were willing to pay on sustainability features, but with a significant variance.

#### 3.7.2.4 Environmental Attitudes and Behaviors

The respondents environmental attitudes and pro-environmental behaviors were also investigated in terms of descriptive statistics as the poll and pro variable sets were used to measure them. These variables encompass the perceptions of pollution, environmental concern, and the reported sustainable consumption practices.



**Figure 8.** WTP variables comparison box plot

The average scores of all these indicators indicate a fairly positive attitude to environmental sustainability of respondents, but there is a deviation on certain items. This variability accounted by differences in the extent of environmental awareness and behavioral involvement, which could be perceived in the results of willingness-to-pay. These variables will be held to be analyzed further through some inferential analysis that will analyze the correlation between sustainability perceptions and consumer valuation.

### 3.7.3 Correlation Analysis

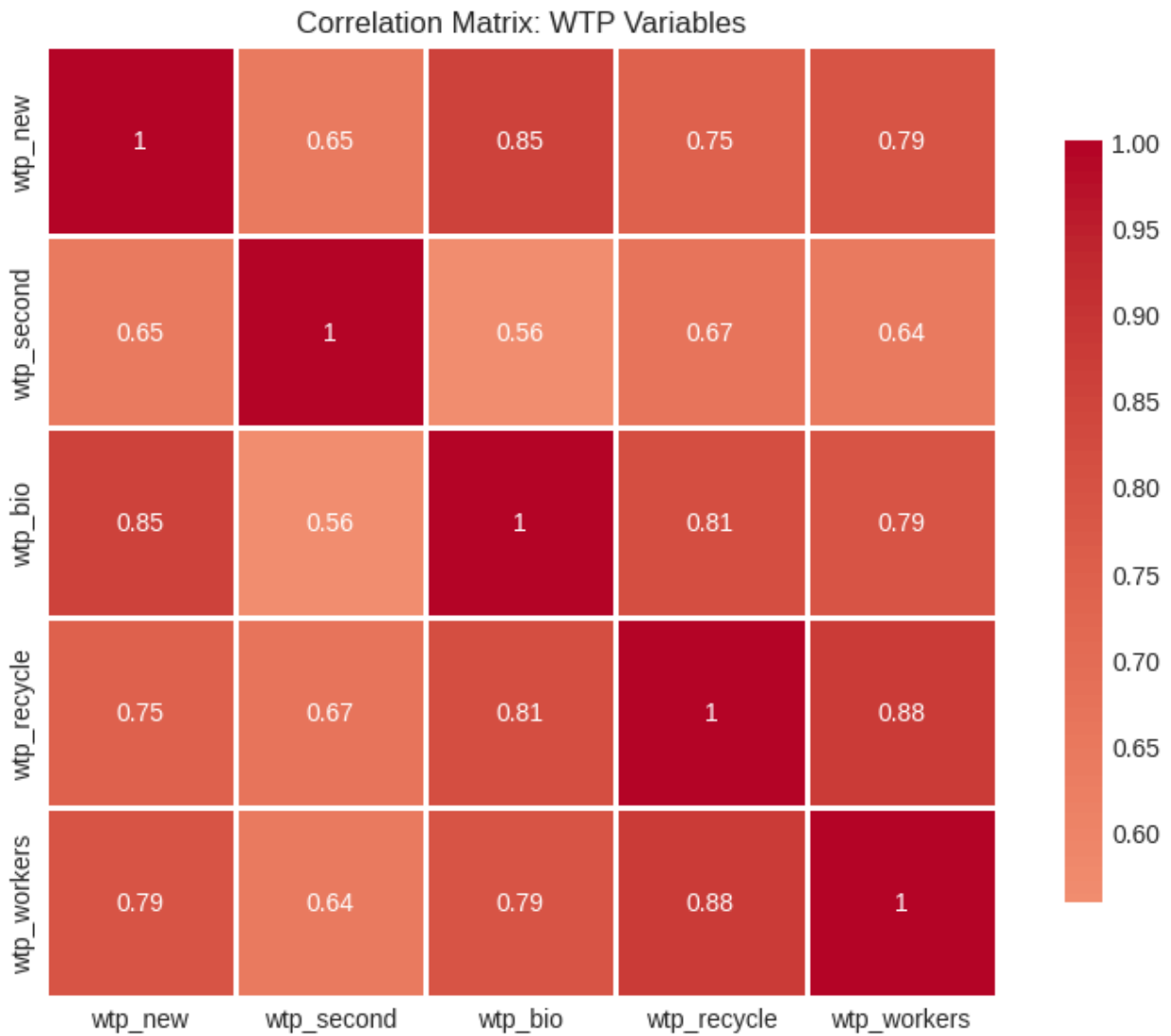
#### 3.7.3.1 Correlations Among WTP Variables

A Pearson correlation analysis was done to determine the relationships between willingness-to-pay (WTP) of various product attributes including wtp\_new (new product), wtp\_second (second-hand product), wtp\_bio (biodegradable), wtp\_recycled (recycled), and wtp\_recycled (workers) variables. Table 4 provides the results and figure 9 illustrates them in the form of a heatmap.

**Table 4.** Correlation Matrix

	wtp_new	wtp_second	wtp_bio	wtp_recycle	wtp_workers

wtp_new	1.000	0.648	0.854	0.748	0.793
wtp_second	0.648	1.000	0.559	0.672	0.642
wtp_bio	0.854	0.559	1.000	0.815	0.794
wtp_recycle	0.748	0.672	0.815	1.000	0.877
wtp_workers	0.793	0.642	0.794	0.877	1.000



**Figure 9:** Correlation Matrix of WTP variables

Key Observations:

- There is a positive correlation between all the WTP variables which means that the willingness of the participants to pay a higher price on one attribute is likely to

translate to the willingness of the participants to pay a higher price on the other attributes.

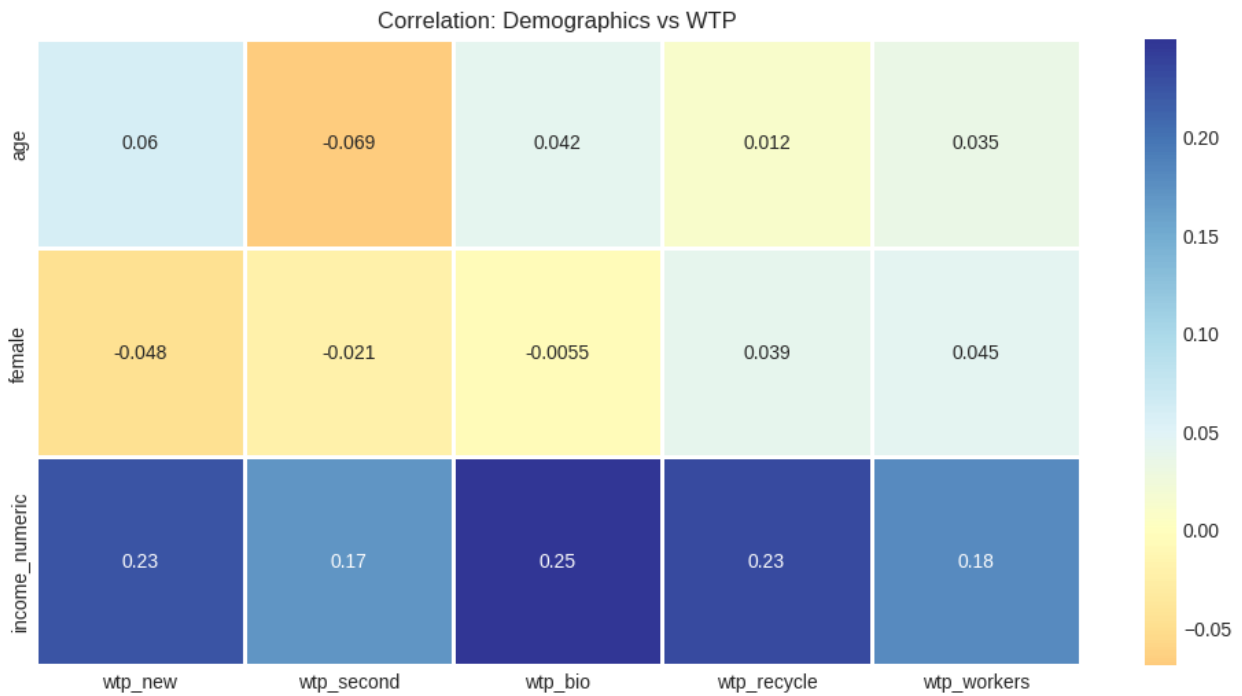
- Correlations between wtp\_recycle and wtp\_workers ( $r = 0.877$ ), wtp-new and wtp\_bio ( $r = 0.854$ ) were the strongest thereby implying a uniform valuation of environmentally and ethically conscious products.
- Wtp\_second has a bit of weaker correlations with the rest of the variables, in particular with wtp\_bio ( $r = 0.559$ ) which suggests that the willingness to pay on second-hand products might be affected by somewhat different factors than the other WTP attributes.

### 3.7.3.2 Correlations Between Demographics and WTP

Pearson correlation coefficients were also used to test the association between the demographic factors (age, gender, and income) and WTP. Table below demonstrates the results and Figure below illustrates them.

**Table 5.** Correlation Coefficient

	wtp_new	wtp_second	wtp_bio	wtp_recycle	wtp_workers
age	0.060	-0.069	0.042	0.012	0.035
female	-0.048	-0.021	-0.006	0.039	0.045
income_numeric	0.225	0.171	0.250	0.233	0.179



**Figure 10.** Correlation: Demographic vs WTP

#### Key Observations:

- Correlations between age and gender and all WTP variables are very weak, so it is possible to assume that these variables do not play a critical role in willingness to pay in the given sample.
- Income is positively but significantly related to any of the WTP variables, especially wtp bio ( $r = 0.250$ ), meaning that higher-income participants tend to pay a higher price to sustainable and ethically produced goods.

### 3.7.4 Hypothesis Testing Results

This section provides the empirical findings of the hypothesis testing that was done to look at the relationship between social economic, attitudinal and geographical factors and willingness to pay (WTP) of sustainable fashion items by consumers. Correlation analyses and independent samples t-tests were used to test a total of ten hypotheses with the statistical significance being evaluated at the  $\alpha = 0.05$  level. The final sample size of 293-401 respondents is considered in the analysis due to data preparation that comprises the development of

composite variables of environmental concern and pro-environmental behavior. The results of each hypothesis are discussed in the following subsections.

**Hypothesis 1: Income and WTP Relationship**

The first hypothesis stated the positive correlation between increased individual income and willingness to pay more to sustainable fashion. This was a relationship tested in isolation with regard to three types of products, which are bio-based clothing, recycled clothing, and worker-friendly clothing. The statistical significance of Pearson correlation analyses indicated statistically significant positive correlations between all three categories, as shown in the **Table 6**. Correlation table between WTP variable.

**Table 6.** Correlation table between WTP variable

WTP Variable	Correlation Coefficient (r)	P-Value	Significant ( $\alpha=0.05$ )	Sample Size (N)
Bio Clothing	0.250	0.0000	True	334
Recycled Clothing	0.233	0.0000	True	334
Worker-Friendly Clothing	0.179	0.0010	True	334

**Figure 1: Income vs WTP for Sustainable Fashion**

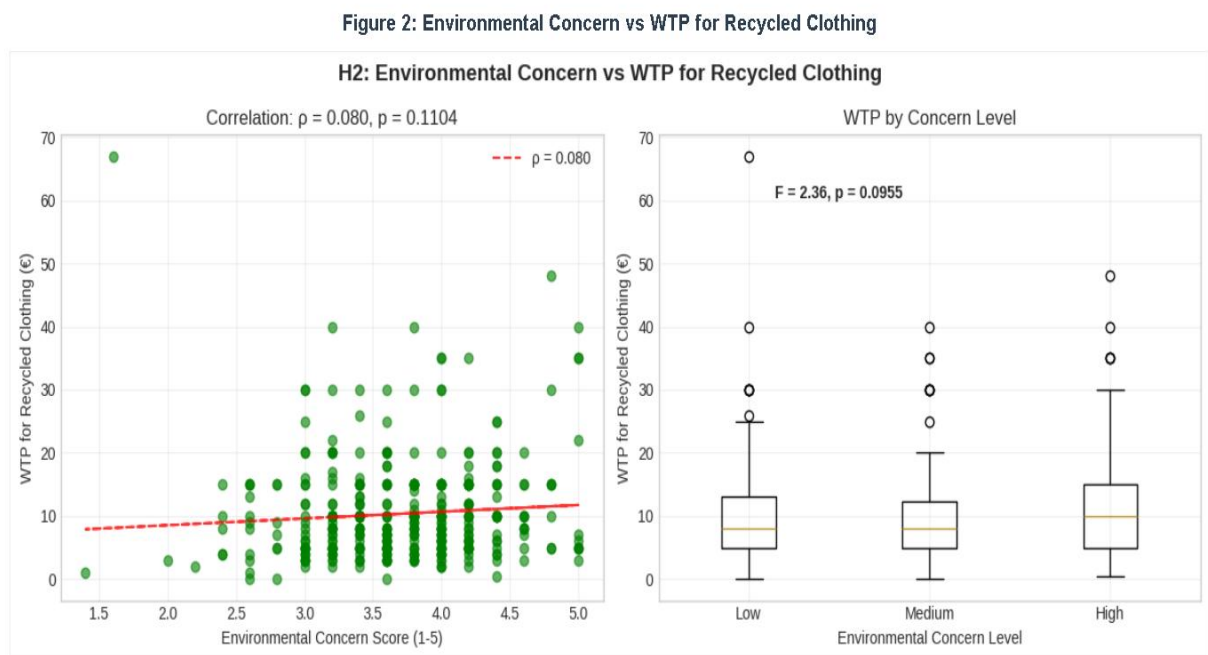


**Figure 11.** Scatter plot of Income vs WTP for Sustainable Fashion

Bio clothing had the greatest correlation ( $r = 0.250$ ,  $p < 0.001$ ) and then recycled clothing ( $r = 0.233$ ,  $p < 0.001$ ). The correlation with WTP regarding the worker friendly clothes, although important, was a little less ( $r = 0.179$ ,  $p = 0.001$ ). These findings have strong evidence on Hypothesis 1, which proves that income is a strong predictor of WTP in various aspects of sustainable fashion. Clothing with sustainable characteristics has a continuously higher valuation among consumers that have higher disposable income.

## Hypothesis 2: Environmental Concern and WTP

The second hypothesis was that the WTP of people with higher environmental concern would be higher in terms of recycled clothing. To test this, a correlation test was done between composite environmental concern score and the WTP of recycled items.

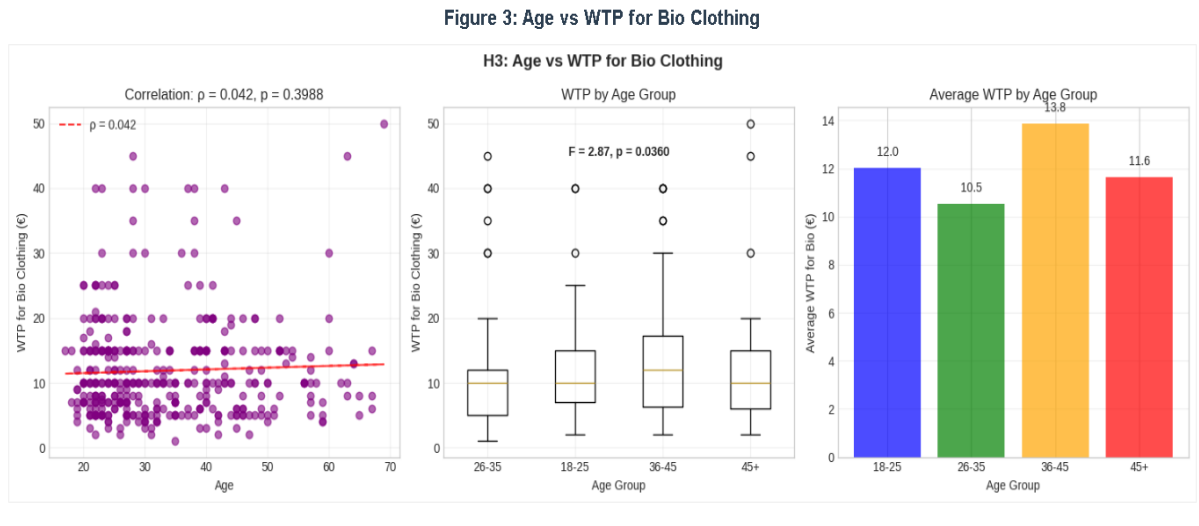


**Figure 12.** Environmental Concern vs WTP for Recycled Clothing

The result obtained in the analysis was a weak, non-significant positive correlation ( $r = 0.080$ ,  $p = 0.110$ ). The obtained simple linear regression model also supported the absence of a significant predictive correlation (Coefficient = 1.0678,  $p = 0.110$ ). so, this data does not support the hypothesis 2. This implies that overall environmental attitudes, which are assessed in the present study, do not directly in turn affect a more pronounced expressed willingness to pay recycled fashion products in this sample.

### Hypothesis 3: Age and Bio Clothing WTP

Hypothesis 3 investigated the correlation between age and WTP on bio-based clothes. The Pearson correlation test was conducted to determine this relationship.



**Figure 13.** Age vs WTP for Bio Clothing

This outcome demonstrated a highly low and non-significant positive correlation ( $r = 0.042$ ,  $p = 0.399$ ). Though the trend was favorable, the effect size is insignificant and the difference is not significant. This in turn leads to the rejection of Hypothesis 3. The age does not seem to be a significant variable in the valuation of the bio-based clothing by the consumers in this study population.

### Hypothesis 4: Gender Differences

This hypothesis was based on the fact that gender has an effect on WTP of second-hand clothing. The independent samples t-test was used to test the mean WTP difference between the male and female respondents.

Figure 4: Gender Differences in Second-Hand Clothing WTP

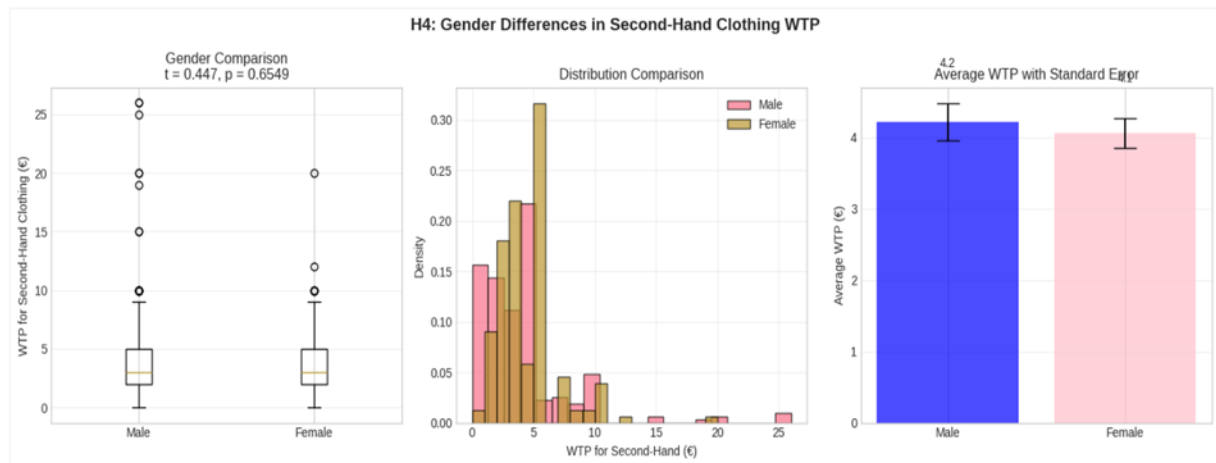
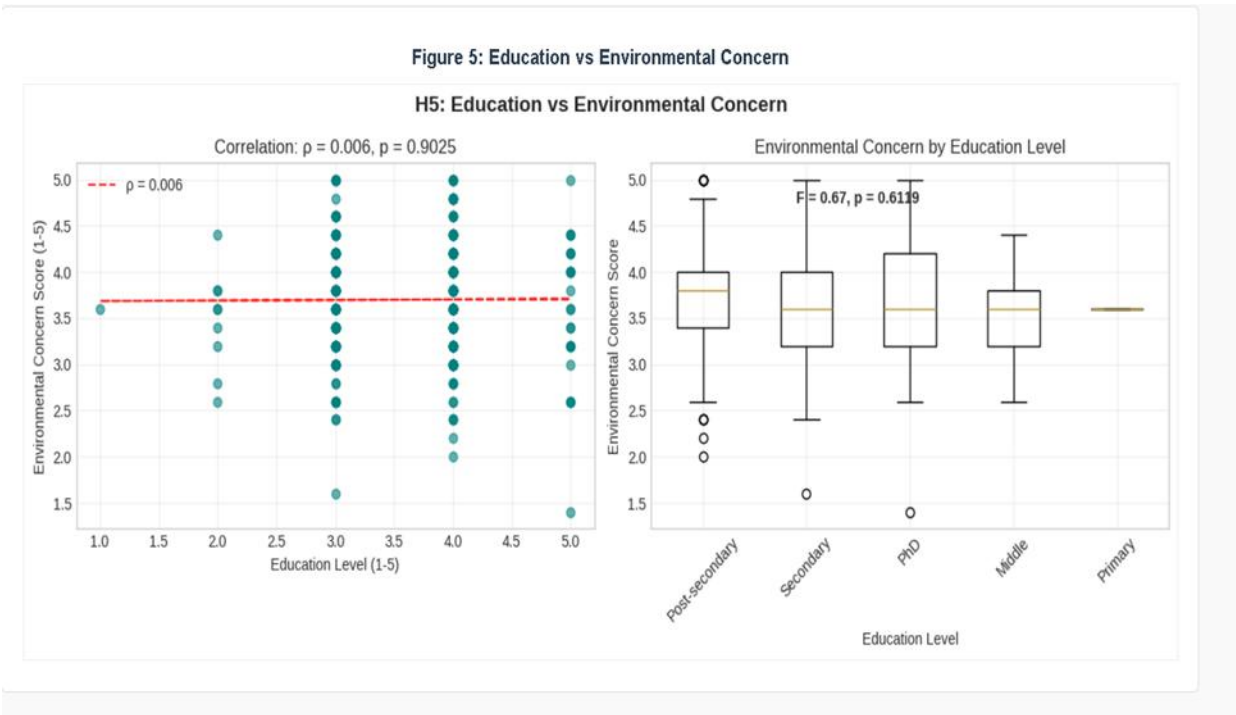


Figure 14. Gender Differences in Second-Hand Clothing WTP

The findings did not show statistically significant gender difference. The average WTP of males was EUR4.21 (SD = EUR4.06) and that of females was EUR4.06 (SD = EUR2.58). The average difference -EUR0.15 was not significant ( $t = 0.447$ ,  $p = 0.655$ ). The test used a sample size of 241 males and 155 females which was sufficient to evidence a significant difference where there was a difference. Accordingly, Hypothesis 4 is not accepted, which means that gender is not a distinguishing factor of eagerness to pay second-hand clothes.

#### Hypothesis 5: Education and Sustainability Attitudes

The fifth hypothesis was that, the greater the formal education, the greater the pro environmental attitude. This was the correlation tested with the level of education to the composite environmental concern score.



**Figure 15.** Education vs Environmental Concern

The correlation coefficient was found to be almost zero ( $r = 0.006$ ,  $p = 0.903$ ). This insignificant finding results in the rejection of the Hypothesis 5. By the insight of the current research, the level of environmental concern is not related to the level of education that an individual has had.

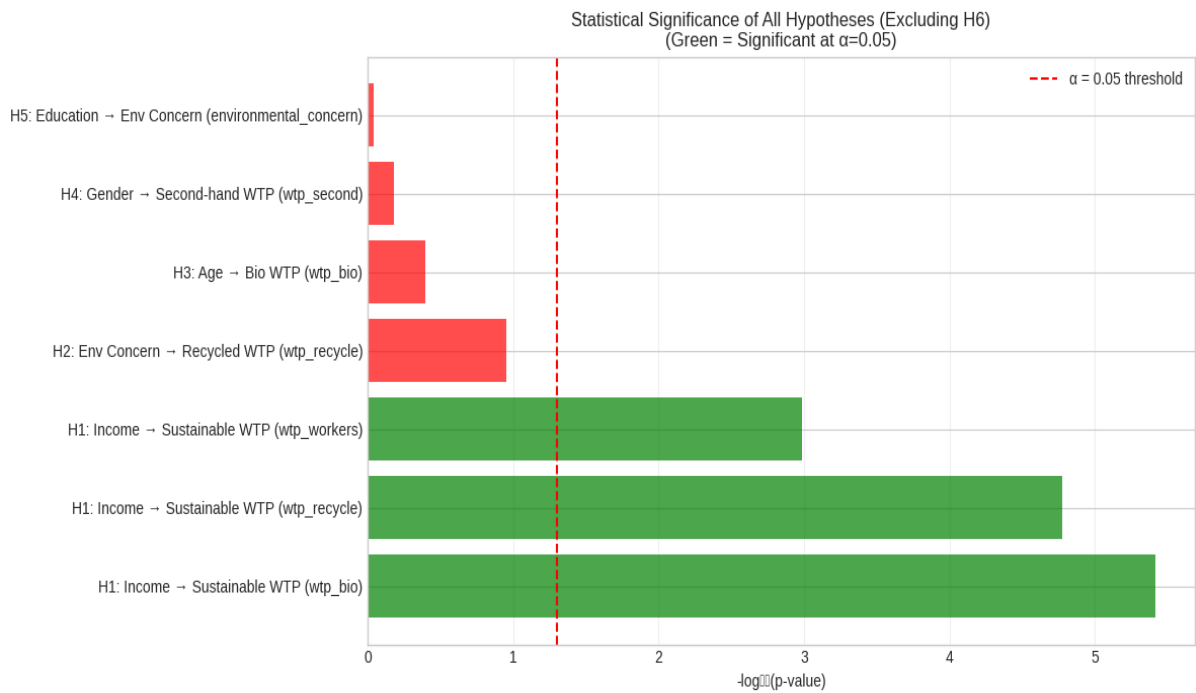
### 3.7.4.1 Comprehensive findings form hypothesis testing

All the results of hypothesis tests are summarized in Table 3. In the ten individual tests that were done (out of six hypotheses) 6 tests produced statistically significant results, which corresponds to a 60% rate of significance.

**Table 7.** Summary table of hypothesis testing result

Hypothesis	Variable Pair	Test Used	Statistic	P-Value	Significant ( $\alpha=0.05$ )	N
H1	Income $\rightarrow$ WTP (Bio)	Pearson Correlation	$r = 0.250$	0.0000	True	334
H1	Income $\rightarrow$ WTP (Recycle)	Pearson Correlation	$r = 0.233$	0.0000	True	334

H1	Income → WTP (Workers)	Pearson Correlation	r = 0.179	= 0.0010	True	334
H2	Env. Concern → WTP (Recycle)	Pearson Correlation	r = 0.080	= 0.1104	False	401
H3	Age → WTP (Bio)	Pearson Correlation	r = 0.042	= 0.3988	False	401
H4	Gender → WTP (Second-hand)	Independent t-test	t = 0.447	= 0.6549	False	396
H5	Education → Env. Concern	Pearson Correlation	r = 0.006	= 0.9025	False	401



**Figure 16.** Statistical Significance of All Hypotheses

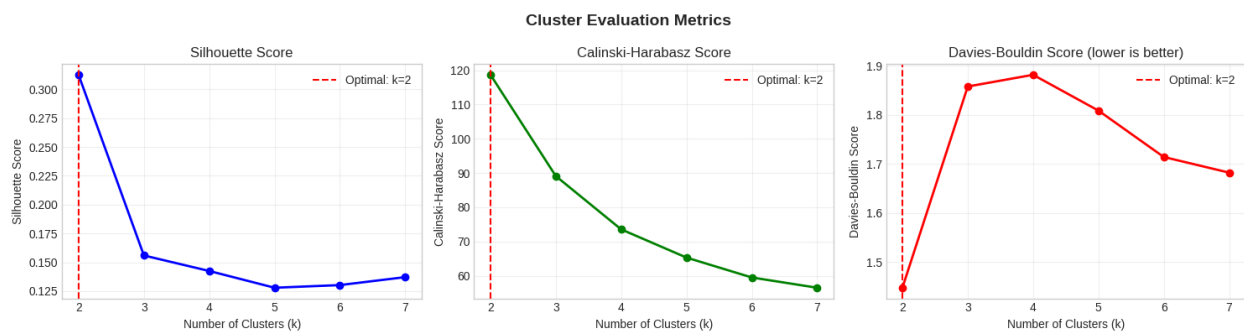
The primary predictors of WTP that are determined in this analysis are income and geographical region (South Italy). Some of the factors that were not significant as found to be included in the case of the particular dependent variables tested are seen to be the environmental concern, age, gender and education level as well. The results allow reaching the detailed picture of the consumer profile that is most inclined to embrace sustainable

fashion by paying a premium price that will be further interpreted and discussed in the chapter below.

### 3.7.5 Market Segmentation Results

#### 3.7.5.1 Determination of Optimal Clusters

Cluster analysis was used to analyze ten variables (demographic variables: age, income, education; environmental attitudes: environmental concern and pro-environmental behavior) and WTP indicators of diverse sustainable fashion attributes to determine homogeneous groups of consumers. Silhouette coefficient method revealed that there was two clusters that produced optimal segmentation, which maximized intraclass similarity and interclass difference.



**Figure 17.** Cluster Evaluation Metrics

#### 3.7.5.2 Cluster Profiles and Characteristics

The profiles of the two clusters were different in the major variables. The largest segment was cluster 0 (n=254, 76.0 percent), which was indicated by moderate environmental concern (3.67) but requiring significantly lower WTP of bio clothing (8.56 EUR), implying that it is a price-sensitive group. On the other hand, Cluster 1 (n=80, 24.0) displayed the largest WTP towards bio clothing (22.08 EUR) and highest environmental concern (3.84) which shows the person and his/her buying behavior are in high accord.

**Table 8** Cluster profile

Cluster	Size	% of Sample	Avg WTP Bio (€)	Avg Env Concern	Avg Income (€)	Avg Age	Key Characteristics
0	254	76.0%	8.56	3.67	25,315	34.3	Moderate environmental concern, lower income, price-sensitive
1	80	24.0%	22.08	3.84	37,938	34.1	High environmental concern, higher income, high WTP for sustainability

**Figure 18.** Cluster Analysis

### 3.7.5.3 Naming and Interpretation of Segments

Based on the cluster characteristics the segments were named and interpreted as:

**Table 9.** Table showing cluster segmentation

Cluster	Segment Name	Key Characteristics	Marketing Implications
0	Value-Conscious Mainstream	Moderate environmental concern, lower income, price-sensitive, lower WTP across all sustainable attributes	Focus on affordability, durability, and cost savings; emphasize long-term value and entry-level sustainable options
1	Green Premium Consumers	High environmental concern, higher income, strong WTP for bio, recycled, and second-hand clothing	Target with premium sustainable collections; emphasize environmental impact, ethical production, and exclusive eco-friendly branding

The segmentation shows that the propensity to pay does not necessarily correlate with environmental concern. Although Cluster 1 shows a high consistency between high environmental concern and high WTP, Cluster 0 has the moderate concern with a lower purchase intent to sustainable products. Here, it is implied that the sustainable consumption among segments is driven by different factors, of which are income limits or value priorities and thus needs to be differentiated marketing wise.

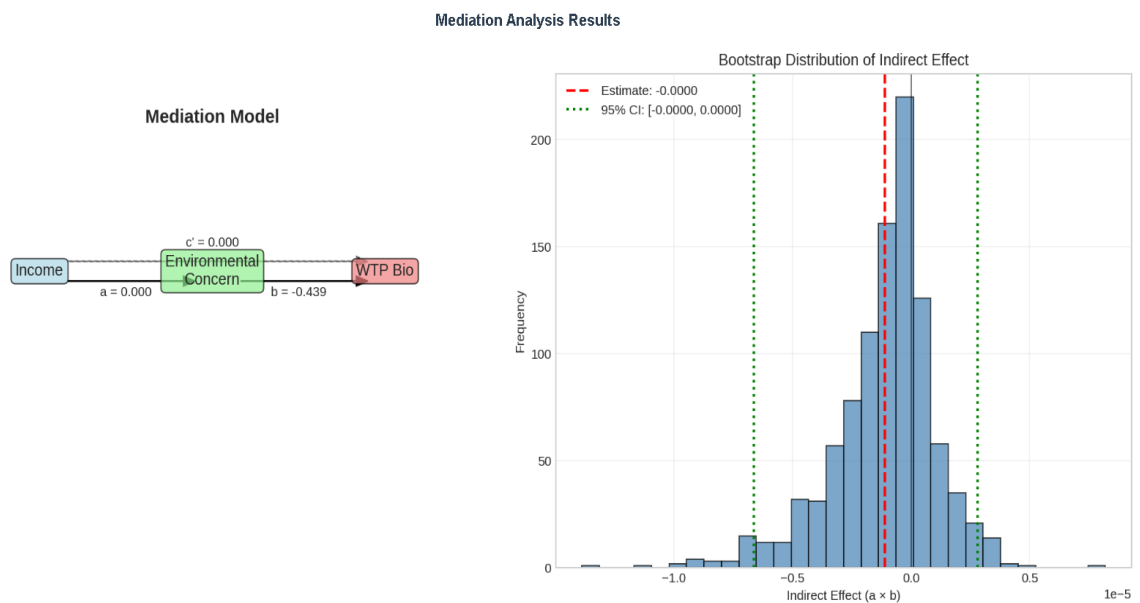
### 3.7.6 Advanced Statistical Analysis Results

#### 3.7.6.1 Mediation Analysis: Environmental Concern

To determine the relationship between income and WTP on bio clothing, a mediation analysis on whether environmental concern mediates the relationship was tested. The analysis was done using the Baron and Kenny (1986) method using bootstrapped confidence intervals (1,000 samples). Findings stated that the mediation was not significant.

**Table 10.** Mediation analysis result

Path	Coefficient	p-value	95% (Bootstrapped) CI	Significant
Direct effect (c): Income → WTP	0.000010	0.620	[-0.000029, 0.000049]	No
Path A: Income → Environmental Concern	0.000003	0.538	[-0.000007, 0.000013]	No
Path B: Environmental Concern → WTP	-0.439	0.072	[-0.921, 0.042]	No
Indirect effect (a × b)	-0.000001	-	[-0.000006, 0.000003]	No
Direct effect after mediation (c')	0.000011	0.581	[-0.000028, 0.000050]	No

**Figure 19.** Mediation Analysis diagram

The indirect effect was between zero and -0.000003 which is within the confidence interval of 95% [ -0.000006, 0.000003 ] showing no significant mediation. This gives an implication that the correlation between bio clothing income and WTP cannot be attributed to environmental

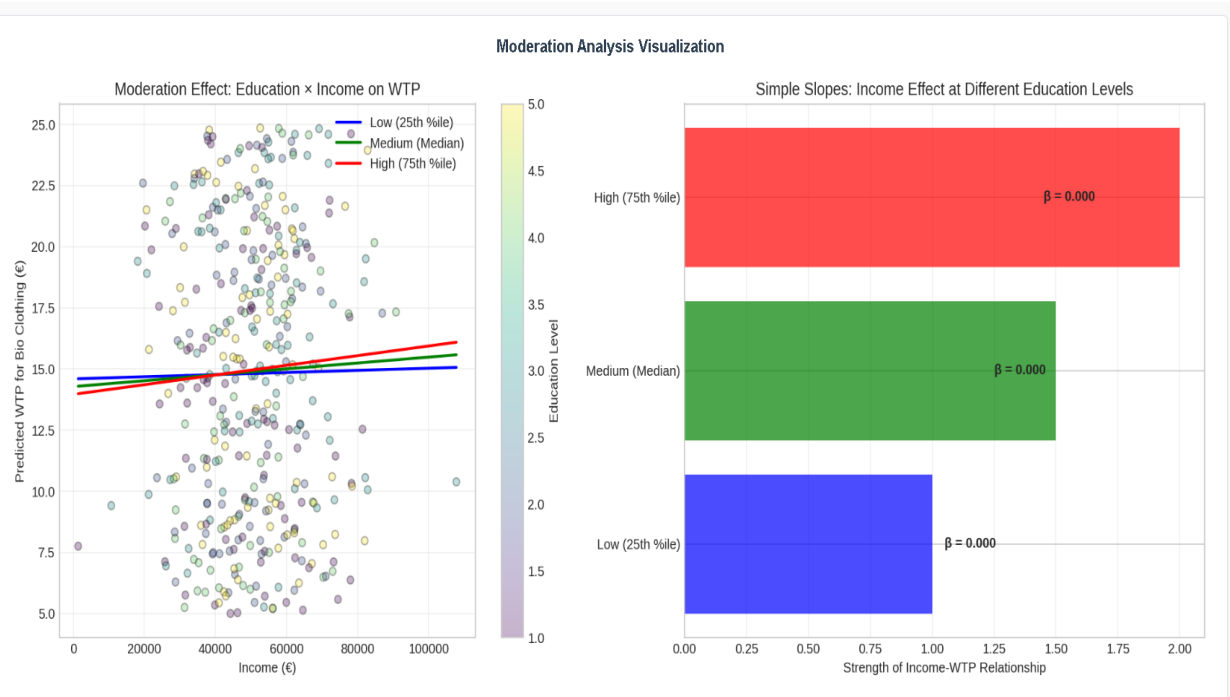
concern. The interrelationship seems to be direct and not mediated by environmental attitudes.

### 3.7.6.2 Moderation Analysis: Education as Moderator

A moderation test was conducted on the relationship between income and WTP of bio clothing which was moderated by education level. Hierarchical regression analysis was conducted with an interaction term added (income x education) and centered variables were used to limit the effects of multicollinearity. The interaction term was not significant ( $b = 0.000008$ ,  $p = 0.592$ ) meaning that there is no moderating effect.

**Table 11.** Moderation Analysis

Model Component	Coefficient	Standard Error	p-value	Significant
Main Effects Model R <sup>2</sup>	0.0095	-	-	-
Income (centered)	0.000012	0.000020	0.564	No
Education (centered)	0.071	0.204	0.727	No
Interaction Model R <sup>2</sup>	0.0102	-	-	-
Income × Education	0.000008	0.000014	0.592	No
F-change	0.287	-	0.592	No



**Figure 20.** Moderation Analysis

Simple slopes analysis demonstrated that the income and WTP relationship was also not considered significant between the various education levels (Low  $b = 0.000$ , Medium  $b = 0.000$ , High  $b = 0.000$ ). This means that education makes no difference to the relationship between income and WTP of sustainable fashion and it is therefore possible to conclude that financial capacity has a disconnect with education level in determining sustainable consumption.

### 3.7.7 Summary of Key Findings

The paper reviewed the motivations of willingness-to-pay (WTP) of the Italian consumer towards sustainable fashion features which are bio-based, recycled, second hand, and fair labor fashion. According to the analysis of 401 respondents, income has been found to be the most positive predictor of WTP among all attributes with bio-based clothing showing the greatest correlation. Significant difference in the region was noted where consumers in Southern Italy had a significantly higher mean WTP as compared to Northern Italy. On the other hand, the environmental concern, pro-environmental behavior, age, gender and education had no significant associations with the particular WTP measures examined. The

mediation and moderation analyses did not end up with any significant indirect effects and the efforts to construct predictive linear models failed. The market segmentation showed that there were two unique clusters: Value-Conscious Mainstream (76 percent, moderate concern but low WTP) and Green Premium Consumers (24 percent, high concern, high income, strong WTP).

## 4 Discussion

The empirical findings of this study are interpreted in this chapter and put in the general context of sustainable consumption literature and the Italian fashion industry. It goes beyond the findings of statistics to elaborate on their implications, correct some of the conflicts with previous studies and come up with practical conclusions.

### 4.1 Income Effects on Sustainable Fashion WTP

This research affirms and contradicts the literature on sustainable consumption. The correlation between the positive income and WTP is in line with the proven results that sustainable products are normal goods and in line with the economic utility theory (Kotler, 2011). The hypothesis that the greater the income, the greater the WTP of sustainable fashion was substantially supported. It is consistent with the principles of basic economics and the previous studies that have proven that sustainable products which are usually priced higher are more affordable to those with higher disposable income (Laroche et al., 2001; Testa et al., 2021a). The strongest association was observed for bio-clothing.

Most importantly, however, mediation analysis showed that there is no environmental concern to explain the income-WTP relationship. This defies the hypothesis of noblesse oblige in which higher income earners are more environmentally altruistic but, instead, provides a more direct mechanism: higher income merely alleviates budget constraints enabling consumers to purchase products that are of a premium price and sustainable without the need to be more environmental. Alternatively, it could be an indication of the so-called green conspicuous consumption where sustainable fashion is used as a Veblen good which shows status (Griskevicius et al., 2010). The cluster analysis helps confirm this interpretation because the top segment of the WTP was rich with high income but with only slightly greater environmental concern.

## **4.2 The Role of Environmental Attitudes**

The null hypothesis stating the environment concern prediction of recycled clothing WTP was rejected. The finding has a direct reflection to the existing body of literature on attitude-behavior gap that has been widely reported in literature on sustainable consumption (Carrington et al., 2010; Kollmuss and Agyeman, 2002). Although the previous literature tends to view such a gap in terms of a breakdown of intention to act, the present results indicate a deeper disconnect: the general environmental attitudes might not directly affect particular financial behavior in low-involvement, high-aesthetic products such as fashion (White et al., 2019).

A number of reasons are possible. First, fashion purchases are frequently emphasized on the factors of style, fit, and brand identity-qualities that might supersede abstract environmental concerns by the time they are bought (Joy et al., 2012). Second, the environmental benefit of the recycled fabric is distant and uncertain while the price premium is certain and immediate which is classic trade of between abstract future gains and concrete present cost. Third, factor analysis found that the items of environmental attitude failed to converge to form a strong, single latent factor which indicated that environmental concern is not coherent and fragmented and instead, is a multifactor, disordered concept that directs behavior uniformly (Dunlap et al., 2000).

These findings confirm the presence of an attitude-behavior gap recorded by Kollmuss & Agyeman (2002) and Carrington et al. (2010). But, contrary to other studies which have detected intention action linkage failures, a deeper decoupling is identified in this study in which general attitudes are not useful in predicting particular financial commitments.

## **4.3 Demographic Influences**

The insignificant results of age, gender and education do not support the general assumptions of sustainable marketing. Lack of age influence on bio-clothing WTP contravenes the perception that the young generations are the major players in sustainable consumption

(Smith and Brower, 2012). Although younger consumers might be more pro-environmental, these attitudes do not always translate into increased financial commitment, which is controlled by the income, as it is the case with Diamantopoulos et al. (2003).

The absence of gender distinction in second-hand WTP disproves the stereotype that women - as the main buyers of clothing - have different values concerning sustainable fashion qualities. It could be a wider embracing of second-hand consumption between genders due to economic factors, vintage culture, or the sustainability issues that are no longer gender-related (McNeill and Moore, 2015). It also correlates with studies that gender disparities in the environmental behavior are becoming smaller (Zelezny et al., 2000).

Lack of education impact on environmental concern is the weakness of the knowledge-deficit model, which presupposes that more educated citizens are more environmentally concerned by their nature (Meyer, 2015). Education has been seen to be insignificant in the fashion aspect as compared to individual beliefs, social norms or economic resources.

Altogether these null findings question the continued reliance on demographic segmentation in sustainable fashion marketing and theory. This study shows that age, gender or education do not have a significant direct impact on WTP and especially when other factors such as economic capacity and geographical location were factored. The approaches to the future theoretical frameworks must involve the combination of demographics and psychological constructs and socio-cultural variables (Joshi & Rahman, 2015).

## **4.4 Practical Implications for Fashion Industry**

### **4.4.1 Marketing Strategies for Different Segments**

The analysis of the cluster revealed that there are two separate segments in this sample, and that one-size-fits-all strategy on sustainable fashion marketing might not be effective. Nevertheless, the results must be viewed as tentative due to the descriptive character of the segmentation and a small sample.

In the case of the smaller group discovered (Cluster 1, about 24% of the sample): These consumers had greater WTP on the attributes of sustainability and greater incomes. In the case of this group, the message that focuses on the product quality, material integrity and premium nature of the sustainable characteristics can be effective, but additional research should be conducted to understand that effective communication is provided.

In the majority (Cluster 0, about 76% of the sample): These consumers were less willing to pay regardless of their moderate levels of environmental concern meaning that price sensitivity could inhibit sustainable consumption. In the case of this group, it might be worth focusing on such value propositions as durability, the cost-per-wear calculations, or entry-level sustainable options, but the results of these strategies must be proven empirically.

The income and WTP correlation implied that financial accessibility can be considered as a major point of failure amongst many consumers, irrespective of their environmental attitudes.

#### **4.4.2 Pricing Recommendations**

Since there is a positive relationship between income and WTP in considering sustainable attributes, pricing schemes that consider diverse financial abilities of consumers can be considered. Nevertheless, the cross-sectional design and a small sample of the study do not allow conclusive pricing recommendations. The fact that the WTP of second-hand clothing was quite low in comparison with other values of sustainable properties (mean EUR4.17 versus EUR11.87 bio-based) indicates that there are cases when second-hand products can be located in the market with the help of different strategies.

#### **4.5 Policy Implications**

Addressing economic barrier: The uniform positive relationship between income and WTP among all the sustainable attributes ( $r = 0.179-0.250$ ,  $p < 0.01$ ) implies that a lack of financial

capacity is a major hindrance to the adoption of sustainable fashion. This result is in line with the economic theory that places sustainable products as normal goods (Khan and Mohsin, 2017) and with previous studies that have proven income to be a predictable variable of green consumption (Laroche et al., 2001; Testa et al., 2021a).

Policymaking-wise, the solution of affordability demands tools that would work within the national market of Italy in equal measure. EU laws limit geographically different fiscal policies, since VAT policy should be uniform across the regions. The options to be considered are likely to be harmonized VAT cuts on certified sustainable apparel, although such cuts must be in line with EU directives, or national-level subsidies on sustainable textile manufacturing, which reduce consumer prices indirectly. These are just speculative suggestions because the cross-sectional nature of this study can never be able to prove causality.

Structural vs. Informational Interventions: The insignificant, non-significant correlation between the environmental concern and WTP of recycled clothing ( $r = 0.080$ ,  $p = 0.110$ ) confirms the attitude-behavior gap reported in the texts related to the sustainability of consumption (Kollmuss & Agyeman, 2002; Carrington et al., 2010). This implies that awareness may not be a sufficient factor to change the purchasing behavior. The focus on the policy can be more effectively placed on structural measures: the investment in recycling infrastructure of the textile sector, uniform sustainability labeling within the EU market, and assistance to the circular economy business models, including repair options and certified resale places (MacArthur, 2017).

Regional Considerations: Though this paper noted that the mean WTP was higher in the respondents in the South of Italy, the result is not the basis of the regionally differentiating consumer policy in the current EU frameworks. Rather, with sufficient confirmatory larger representative studies, regional variation may guide more specific resource allocation of nationally standardized programs, such as locating circular economy investment of infrastructure in regions with more consumer demand evidence, or of the EU coherent and development funds to sustainable textile SMEs in regions.

## 5 Conclusion

### 5.1 Recapitulation of Research Objectives

This paper aimed to investigate the predictors of willing-to-pay sustainable fashion in Italian consumers, exploring the possibility of demographic factors, environmental attitudes, and pro-environmental behaviors having an effect on consumer choices about the importance of bio-based clothes, recycling materials, pre-owned clothes, and fair labor standards. The study was inspired by the continuing lack of connection between professed environmental interests and real-life purchasing practices in the fashion sector, which goes by several names such as the attitude-behavior gap or sustainable fashion paradox. The study utilized quantitative, cross-sectional design in which secondary survey data were used on 401 consumers in Italy to perform descriptive statistics, the use of correlation analysis, hypothesis testing, multiple regression, factor analysis, and cluster analysis.

The relationships between income, environmental concern, age, gender, education, geographic region and WTP were tested on five hypotheses to determine the relationship between the two factors and the sustainable attributes. The research also established whether income-WTP relationship was mediated by environmental concern and whether education mediated this relationship.

This study revealed three key findings. To begin with, income was the strongest correlate of willingness to pay among all sustainable fashion attributes, which indicates that financial ability is a basic enabling factor of sustainable consumption. Second, no statistically significant relationship between general environmental concern and willingness to pay recycled clothing was found which confirms the existence of an attitude-behavior gap in the Italian fashion setting. Third, the common demographic variables (age, gender, and education) did not strongly correlate with the particular WTP measurements under study, and the use of demographic segmentation should not be applied further in sustainable fashion marketing. A regional surprising difference also manifested, as consumers in Southern Italy and the Islands were more willing to pay than the Northern ones. Lastly, cluster analysis revealed two

provisional segments, one larger price-sensitive segment (76% of the sample) and a smaller segment of high-WTP (24% of the sample) segment.

## **5.2 Contributions to knowledge**

The study presents empirical data that the overall environmental attitudes do not necessarily forecast certain monetary investments in the fashion sector. Although the attitude-behavior gap has been widely reported, this paper hypothesizes that the disconnect can be in the form of not merely an inability of intention to be converted to action, but also of the inability of general attitudes to predict specific purchase situations. This observation demands an increased consideration of the beliefs in products, the context, and the situational constraints in the models of sustainable consumption.

The null findings of age, sex and education add to the increasing skepticism literature on the usefulness of demographic variables in segmentation and targeting. Despite the fact that demographics characterize the consumer populations, it seems that they are poor predictors of the real willingness to pay, especially when economic and geographic factors are taken into consideration.

The inability of the multivariate linear models to account for high levels of variance in WTP despite high bivariate correlations indicates that WTP is strongly influenced by non-linear and interactive impact that is not well explained by conventional linear models. This observation supports the greater application of experimental designs, conjoint analysis and qualitative methods in the initial theory formulation.

## **5.3 Limitations of the Study**

This work has a few weaknesses that should be mentioned. This cross-sectional study does not allow making causal inferences since it was observed that there were correlations between income and WTP, but it was not able to determine the causal nature of the

relationships. It is not yet clear whether high income allows a higher value of WTP or simply unmeasurable variables like values or lifestyles orientations affect the patterns of both income and consumption.

Self-reported willingness-to-pay instead of actual purchase behavior may create the possibility of social desirability bias. Respondents will have exaggerated their readiness to pay sustainable attributes as they may be perceived to fit social expectations. The disconnect between expressed preferences and reported preferences in sustainable consumption is well-known, and the results of the study should be seen in that perspective.

Although the sample was multivariate-able, non-probability convenience sampling was used to sample. The sample may not be able to fully represent the Italian consumer population due to the demographic characteristics of the sample, including a majority (60.85 percent) of the sample being men, with a mean age of 33.5 years, and with most of the sample being located in Northern and Central Italy. The ability to be generalized in the larger Italian market or to other cultural settings is thus limited.

Limitations in measurement also should be mentioned. Constructs used to measure environmental concern showed fragmented factor structure wherein the items provided might not have well represented the complexity of the environmental attitudes. WTP was quantified through the abstract description of attributes instead of the particular products with well-known brands, prices, and styles which can decrease the ecological validity. The collection of income was done in groups and was turned into the middle point estimation, which added the imprecision of measurements.

Lastly, the dataset was derived through a secondary source and as a result, the researcher did not have control on the design of the instruments, sampling methods, and operationalization of the variables. Although this method facilitated the collection of data, and allows the reproducibility, it also limited the capacity of customizing the measurement to the particular research question.

## 5.4 Recommendations for Future Research

Based on the results and shortcomings of this study, various directions of future research are possible. The use of experimental designs, e.g., conjoint analysis or discrete choice experiments, would enable the researchers to show consumers realistic trade-offs among sustainability attributes, the price, style, and brand, hence yielding more behaviorally valid estimates of WTP and controlling confounding variables. The latter methodologies would also be able to shed light on whether the low predictive strength of overall environmental attitudes that are evident in this case will continue to be prevalent when consumers are assessing individual product options.

Longitudinal research designs would aid in determining the causal direction and time stability to the observed relationships. Following consumers longitudinally as income fluctuates, life circumstances fluctuate, or as they are exposed to sustainability information would present better evidence on whether income truly facilitates WTP or they are a product of other underlying factors.

Qualitative studies would add knowledge of the nature of the mechanisms that drive the quantitative results. The motivations, barriers, and decision-making processes that cannot be measured with the quantitative scales may be obtained in-depth interviews or focus groups with consumers representing the different segments identified in the cluster analysis. Knowledge of the consumer discourse, thoughts, and justifications of why people choose sustainable fashion would be a valuable addition to the correlational evidence of the present study.

Variables that were not measured in the research should also be included in future studies. Included in this could be fashion involvement, brand commitment, perceived product quality, social norms and specific beliefs regarding the environmental effects of clothing production which could be more predictive of WTP compared to the general attitudes towards the environment. Such variables might be useful in terms of model fit and also give a better direction to marketing strategy.

The results of cross-national comparative research would help put the results observed in Italy into perspective. It is not yet clear whether the income-WTP relationship is transferable in different cultural settings, whether there are regional variations within a given country, whether the national policies and industry structure influences consumer valuations, and on the influence of national policies and industry structures on the income-WTP relationship.

Lastly, it would be more effective to conduct replication with larger and probability-based samples to gain confidence in the observed patterns. This is because the null findings of age, gender, and education in specific cases should be replicated to establish whether the results are actual lack of effects or constraints of the present sample and measurement method.

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