POLITECNICO DI TORINO

MASTER OF SCIENCE IN ENGINEERING AND MANAGEMENT

A.a. 2022/20223

Sustainability Claims' Influence on Consumer Purchase Behavior:

Empirical analysis of the Extra Virgin Olive Oil in Italian Supermarkets.

Supervisor:

Prof. Anna D'Ambrosio

Candidate:

Mirna Rosario Bajalqui De La Cruz

s273742

Dream big, dream big!

To myself, for all those late nights and early mornings, all those extra effort hours, for my self-compassion and for my self-love. Thank you for going forward even in the most tough situations, and thanks for having faith in yourself. Remember that it is with passion, courage of conviction, and strong sense of self that we take our next steps into the world (cit.).

To my family, for their unconditional love and support in my wildest dreams, for inspiring me with their determination, love, and persistence.

To my dear friends, my second family, for their selfless love, care and laughs shared with me. To S. and M. for your company in my university years and my thesis days. Remember that the destination doesn't matter when the happiness was in the journey.

To MAECI, thank you for believing in me, choosing me as your grantee and supporting me in my academic years in Italy.

To the Universe, for always having my back, even when I couldn't see it. For those miracles moments that makes me realize I am always divinely guided.

EXECUTIVE SUMMARY

In recent decades, our evolving relationship with the environment has emerged as a prevailing global concern. Various stakeholders, including businesses, consumers, and institutions, have collectively sought to comprehend the extent of their influence on the environment. This heightened awareness has initiated a significant shift in consumer purchase behavior, with individuals increasingly inclined to contribute to the reduction of negative environmental impacts.

This thesis, situated in the context of Italian supermarkets, centers on the understanding of the diverse factors that influence consumers' preferences and their desire to opt for food products that align with environmental preservation through the use of an empirical analysis and an A/B online survey. By assessing consumer preferences, purchase intentions, and the willingness to pay a premium for products with sustainability claims, this study embarks on a journey to unravel the intricate dynamics governing consumer choices within the Italian Extra Virgin Olive Oil Market: not only one of the base components of the Mediterranean diet, and therefore present in almost all Italian households, but also one of the most encouraged agriculture to go towards sustainability by governmental institutions.

In a world grappling with increasingly complex environmental challenges, this research contributes to our understanding of consumers and their sustainable choices. By shedding light on these dynamics, it provides valuable insights to companies and institutions. They can use this knowledge to effectively communicate their sustainability initiatives to consumers, fostering a greater sense of environmental responsibility among all stakeholders. Ultimately, this contributes to a more sustainable and responsible future for all.

Keywords: Sustainability Claims; Consumer Behavior; Purchase Intention; Willingness to Pay; Olive Oil Industry; Consumer Purchase Decisions; Food Industry

TABLE OF CONTENTS

TABLE OF VISUAL RESOURCES

INTRODUCTION

In an era marked by increasing environmental awareness and a constant changing consumer preferences and needs, to understand the intricate dynamics that shape the individual's choices in the market has become of greatest importance for companies, governments, and overall society. This thesis dives into the multifaced landscape of the Extra Virgin Olive Oil in Italy, a staple in the Italian households.

In the first chapter we will explore how the consumer's awareness and interest on sustainability topics have evolved over the years, as well as how the perception and understanding of this term has been shaped in the last decades. Here, also we will explore the main theories and models that tries to give light to the "Black box" of consumers, that aims to understand how consumer decide and executes their purchase decision. We finalize the chapter with a view on the modern consumer trends, to understand qualitatively how the current context in the last years has shape the needs and demands of consumers and how brands could use this opportunity to increase their added value.

On the second chapter, we analyze how the role of companies in a society has changed over time and the different initiative towards sustainability that has been implemented. We focused on the birth and development of green marketing and, we explore the phenomenon of greenwashing that continue to create skepticism in the consumers' eyes.

On the third chapter, we explore how sustainability topic has been understood and managed by governments and other international organizations, with a special focus on the sustainability policies in Europe. Also, we will see how tools as the Eco-labels, promoted or authorized by the government and other institutions have shape the current product landscape in Europe. In the last part, we deep dive into the "European Organic logo" as this certificate was used for the empirical analysis of this thesis.

On the fourth chapter, we explore the impact that the Food Industry has in the Environment worldwide, with a focus on the Olive Oil industry in Italy, its process, dynamics, and current problems. We study in this chapter the organic farming of olives in Italy, its characteristics, subsidies received by government and issues it is currently facing. We continue this chapter with the current Extra Virgin Olive Oil (EVOO) trend in Italy, especially in the supermarkets and big

retailers (GDOs), here we will see also the actions towards sustainability the most important EVOO companies in Italy are taking and how the consumers are responding to them by analyzing the sales and prices performances of the last recent years. We finish this chapter by giving an overview of the current Organic food trend in Italy.

On the fifth chapter, the empirical analysis is presented. Here we see how much sustainability claims influence the consumer purchase behavior by using the EVOO in Italian supermarkets as the case. For this thesis, a A/B test Survey online has been conducted. A total of 107 answers from consumers located in Italy were reached. The main hypotheses, based on the literature review of previous chapters, have been analyze and tested using the IBM-SPSS software. All the results can be found in this chapter.

I. Consumers: towards a green conscious consumer

1. Consumers and Sustainability

Global warming, pollution of key resources like water and air, and overall issues regarding to our environment are topics that's has been taking relevance and concern for governments, companies, and society as a whole. This has created a "Green revolution" which calls all agents involved to act in a responsible and sustainable way to prevent further damaging the ecosystem (Rahbar & Abdul Wahid, 2011) (Ansar, 2013) (D'souza & Taghian, 2005).

There have been three distinctive phases of the so called "Green movement". Having an embryonal phase from the 60s, where the movement for the environmental concerns were emerging based on the problems of environmental pollution and energy conservation (Henion, Kinnear, & Association, 1976). Wroe Alderson, known as the "Father of modern Marketing" proposed on those years, the open debate about the interaction between Marketing, Society and Environment (Peattie, 2001a).

Strating the 70s there was a new phase of the development of the "Environmental consciousness" where politics, business and society started including this topic in their programs either as competitive advantage or as politics strategy, also international bodies were already including it on their agendas. The 1972 United Nations Conference on the Human Environment in Stockholm was the first to address environmental issues, adopting principles for sound management, including the Stockholm Declaration and Action Plan for the Human Environment. The conference started dialogue between industrialized and developing countries on the link between economic growth, pollution, and global well-being. The conference resulted in the creation of the United Nations Environment Program (UNEP) (United Nations, 2023).

Following this path, on 1975, The American Marketing Association (AMA) carried out their first workshop about "Ecological Marketing" which ended up in the publication of the first marketing book that goes over the environmental issues "Ecological Marketing" (Banerjee S. , 2016).

Peattie (Peattie, 2001a) identifies a more mature 3rd phase that started in the late 80's and beginning of the 90's marked by important environmental accidents and crisis: Exxon Valdez 1989; Chernobyl 1986, Ozone layer hole in the 90s, among others. In 1987, the term "Sustainable Development" was coined by the Bruntland report "Our common future" in which it is defined as a "development that meets present needs without compromising future generations' ability to meet their own needs". (Brundtland Commission, 1987). This definition has influenced subsequent global documents and conferences: The Rio Earth Summit in 1992 took this definition to establish policies and strategies that countries should followed about production, energy, and environment protection, all which was published as Agenda21 (Banerjee S. , 2016). Kyoto in 1997 was also an important step to show the compromise of different countries to apply measures in order to reduce the greenhouse gas emissions (GHE) which was affecting the Ozone layer and therefore enabling the Global warming.

In the meantime, a more conscious consumer groups were being formed whose concerns about environmental issues influenced their purchasing and consumption activities, this new generation of consumers were called "Green consumers" (Baker, 2003), especially in western Europe and US where they demanded ecofriendly products and clean technologies. This new consumer's concerns have had pressured governments and companies to start being sustainable towards environment.

From that point on, the concept of the sustainable consumption has started been broadly embraced yet defining it and implementing it remain challenging for governments and companies. Key components of sustainable consumption include (Peattie, 2001b):

- Futurity: Balancing current needs with those of future generations is a key challenge for sustainability.

- Equity: Sustainability seeks to rectify the unequal distribution of benefits and burdens among nations and people.

- Emphasis on Needs: Emphasizing essential needs, rather than luxuries, is a core principle of sustainability.

2. Consumer behavioral theories and green purchasing

"The Heart Has Its Reasons, That Reason Does Not Know" – Pascal 1670

Consumer behavior is a broad and interdisciplinary area, encompassing various fields such as sociology, psychology, economics, and marketing. The concept of consumer behavior has been in existence since the inception of marketing, and numerous scholars have offered diverse definitions and interpretations of this phenomenon from various perspectives.

Walters and Paul (C.G. & G.W., 1970) defined consumer behavior as "the process whereby individuals decide whether, what, when, where, how, and from whom to purchase goods and services". Engel, Blackwell and Kollat (Engel, Blackwell, & Miniard, 1995) define it as "those acts of individuals directly involved in obtaining and using economics good and services, including the decision process that precede and determine those acts". In 1998, Kotler emphasized the significance of exploring consumer behavior as a process designed to unravel the mysteries within the "Black box" of consumers (Kotler, 1998).

Due to the growing concern towards environment in the last 30 years, multiple efforts and research had been carried in order to better understand the "Green consumers" – Consumers that consistently and primarily discriminate product purchases in favor of the environment - and their level of green behavior (Schlegelmilch, Bohlen, & Diamantopoulos, 1996). Researchers have studied the roles of knowledge, values, attitudes towards environment, demographic characteristics, psychological barriers, and other contextual factors as variables in the pro-environmental behavior (Barber, Kuo, Bishop, & Goodman Jr, 2012). In order to better understand the decision-making process of the Green Purchase, Peatti in 1995 (Peatti, 1995) proposes five main steps regarding this process:

1. Recognition of a Need or Want:

   The process begins with consumers recognizing a need or desire that motivates their purchases. Maslow's hierarchy of needs illustrates this, ranging from basic requirements like food and shelter to higher-level needs such as self-fulfillment. Therefore, Maslow's offers a useful inventory of needs that can be helpful for marketers to understand consumer needs, but as pointed out by many critics of this model, marketers should be

cautious in assuming that the hierarchy holds in every case as the model is a simplistic view and ignores the intensity of needs (Arnould et all, 2004).

Peatti, adds that "the demand for green products may reflect a long understanding of environmentalism, a concern for future generations, a rejection of the values of the consumer' society or simply a willingness to try something different". And that these wants are need can become a desire to purchase green products or also can be channel into a desire of not making a purchase passively or even by boycotting the product or company. (Peatti 1995). These concepts will be further explored in the next parts of this thesis.

2. Information Gathering:

The second step, information gathering, is crucial for green consumers seeking to understand the environmental impact of their purchases. However, environmental issues' complexity can be challenging. Ranchhold (Ranchhod & Gurau, 2007), suggest that if the arguments for consumer green or greener product becomes too complex, chances are that most consumers will not understand them, let alone be persuaded to consume the product or service.

Therefore, it is key for companies with sustainable claims should prioritize clear and straightforward information that explains a product's environmental benefits in simple terms.

3. Evaluation of Alternatives:

During this stage, consumers weigh their alternative options for green purchases. Some may choose not to buy at all, while others might radically shift their purchases to align with their environmental values. Another option is switching to alternative green brands, whether from green suppliers or conventional producers with green product lines. Loyal customers may opt for green variants offered by their trusted brands (Peatti, 1995)

4. The Purchase Decision:

At this stage, consumers assess whether the benefits of a green purchase outweigh the costs. Generally, consumers are more likely to make environmentally friendly choices when they perceive benefits exceeding costs (Hartmann & Apaolaza Ibanez, 2006).

Factors like where to buy, how much to buy, and when to make the purchase are considered. (Peatti, 1995)

5. Post-Purchase Behavior:

After making a green purchase, consumers may exhibit post-purchase behavior like changing product use to reduce environmental impact, reusing products, recycling waste packaging, or maintaining products for longevity. These actions reflect their commitment to sustainability even after the initial purchase (Peatti, 1995).

There has been many different models and theories that tries to explain the consumer purchase behavior specially linked to pro-environmental choices:

1. Model Expectancy – value (By: Fishbein in1967)

This model defines the attitude towards an object as the sum of expectancy-value products related to the attributes of the attitude object (Fishbein, 1967). For example, following this model, a person attitude towards a car may depends on the attributes of durability and color, so if the individual believes that the car possesses durability and for the individual this attribute is valued highly, then the product of this expectancy-value for durability can be summed with their expectancy-value for color in order to determine the individual attitude toward the whole car.

2. Theory of Reasoned Action (By: Fishbein and Ajzen in 1975)

This model was published in 1975, with a further modification in 1980. This model suggests that attitudes could explain human actions. It assumes that the individual is rational and make use of the information available to them: "People consider the implication of their actions before they decide to engage or not engage in a given behavior" (Ajzen & Fishbein, Understanding attitudes and predicting social Behavior, 1980)

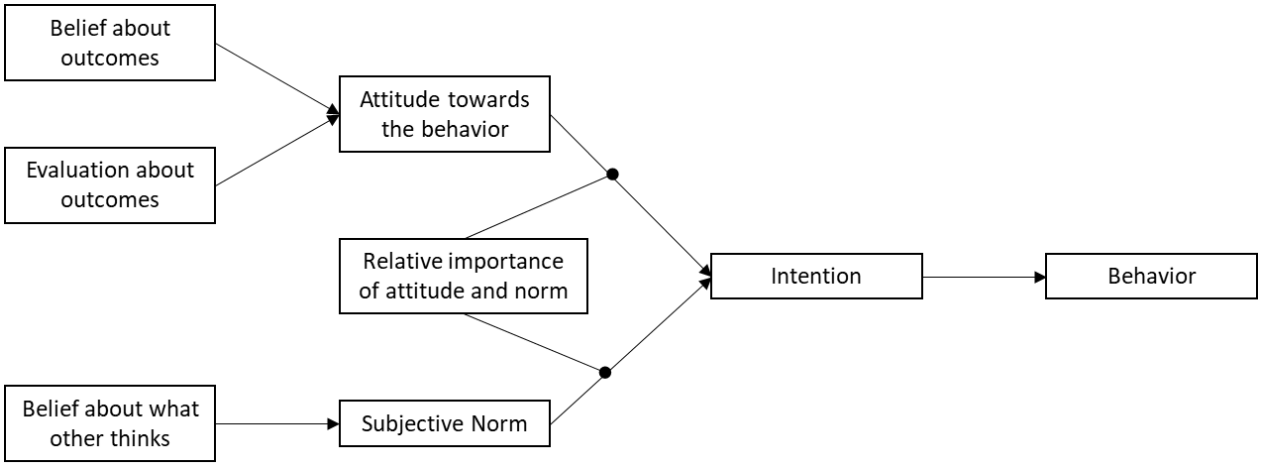


Figure 1 Theory of Reasoned Action. Source: Fishbein and Ajzen 1975; Own elaboration.

This model suggest that an individual intention is determined by two elements: the attitudes and the subjective norms. Miller (Miller, 2005) defines attitudes as "the sum of beliefs about a particular behavior weighted by evaluations of these beliefs, and subjective norms as the looks at the influence of people in one' social environment on one's behavioral intention, the beliefs of people weighted by the importance the individual give to each of these opinions, will influence the individual behavioral intention".

Ajzen states that an individual develops an intention to engage in certain behavior and that this intention remains as "behavior disposition" until, given the opportunity, an attempt is made to transform this intention into action (Ajzen, 2005).

3. Theory of Plan Behavior (By Ajzen in 1991)

Using the Theory of Reasoned Action, the theory of planned behavior was developed by incorporating an additional construct called Perceived Behavioral control, this is because Ajzen noticed a lack of balance between the attitudinal and normative components on the TRA. Perceived behavioral control closely resembles perceived self-efficacy, playing a crucial role in influencing various forms of environmentally friendly behavior, as noted by Chand and Lau in 2001 (Chan & Lau, 2001).

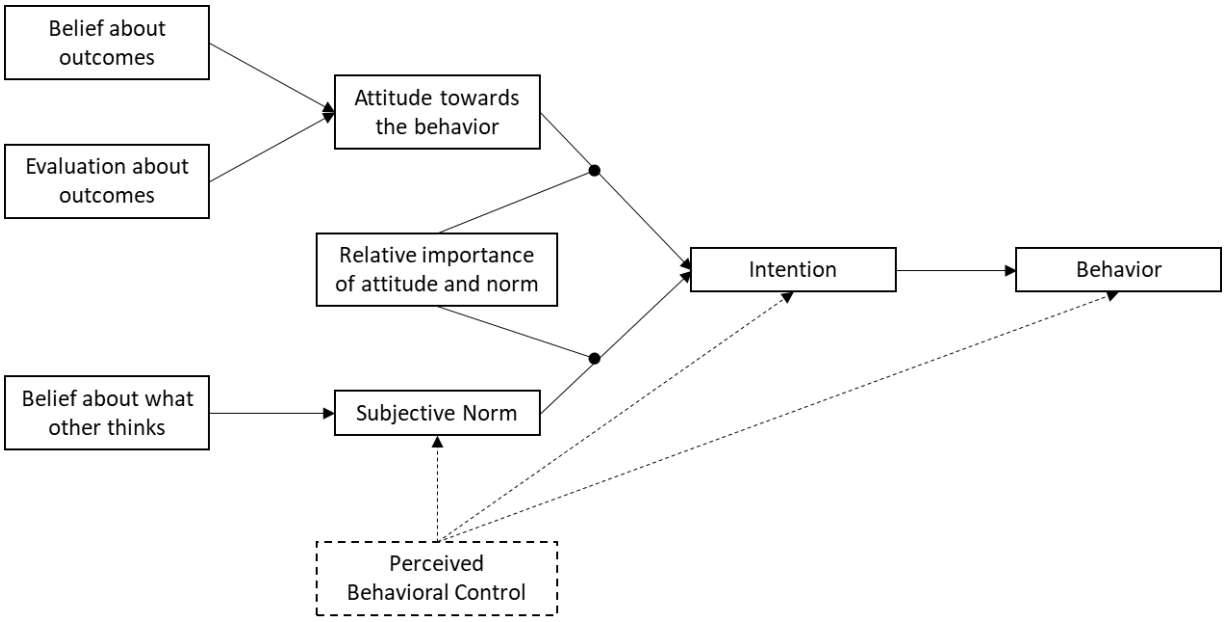


Figure 2 Theory of Planned Behavior. Source: Ajzen 1991. Own elaboration.

Hence, this model suggests that a consumer's environmental purchasing behavior is shaped not only by awareness, attitudes, and social pressure but also by their perception of personal opportunities to contribute to a solution, as outlined by Birgelen, Semeijn, and Keicher in 2008 (Birgelen, Semeijn, & Keicher, 2008).

4. Norm - Activation Theory (By: Schwartz in 1977)

Shalom Schwartz in 1977 proposes the Norm-Activation Theory that still remains as one of the most widespread used model of moral behavior. Its original aim was to give a framework for the understanding of pro-social, altruistic, and other moral behavior.

It is based on the assumption that personal normal are the only direct determinant of the pro-social behaviors that in this model are understood as a strong feeling of moral obligation that people experienced for themselves in order to engage in pro-social behavior and that Intention didn't have any influence in this relationship (Schwartz, Normative influences on altruism. , 1977).

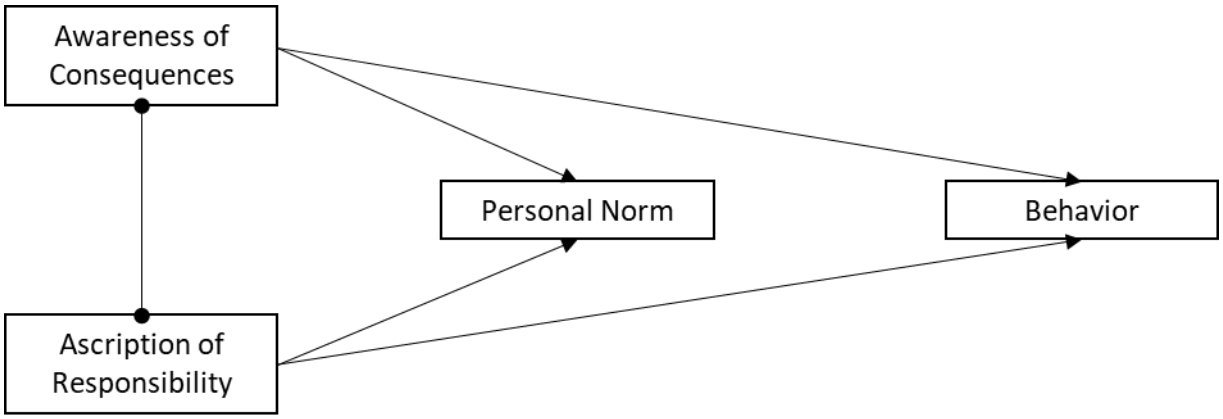


Figure 3Norm Activation Theory. Source: Schwarz, 1977; Own elaboration

Awareness of consequences and Ascription of responsibility are not only happening before the Personal Norm, but they also influence the link between Personal Norm and Behavior: This link will be stronger when the individual is aware of the negative consequences of not engaging in the pro-moral behavior and where the responsibility of these consequences are accepted, in the contrary it will be weak if the individual is unaware of consequences and denies the responsibility.

5. New Ecological Paradigm (By: Dunlap and Van Liere in 1978)

Based on the research by Dunlap and Van Liere (Dunlap & Van Liere, 1978) environmental concern is defined as the global attitude with indirect effects on behavior through behavior intention. This model has a scale that measures the pro-environmental orientation in individuals and that has been widely use. Therefore, it reflects the believe of an individual about the relationship between humanity and nature.

1.1 Values, Beliefs, and Norms Model

These theories and models have had many adaptations and modifications over time. In 2000, Stern makes a convergence of many theories and portrays it in his theory Values, Belief and Norms – VBN (Stern, 2000). This model proposes that pro-environmental behavior is based on a causal chain of representative variables, where the Personal Norm – PN- influences directly on the behavior.

Schwarz (Schwartz, 1992) proposed that individuals have always values in their lives that could vary in importance and that are guiding principles in the individual's life: Values are defined as a desirable trans-situational goal varying in importance, which serves as a guiding principle in the life of a person or any other social entity. (Schwarz 1992). For this theory, Schwarz proposed a general classification of 56 values.

In the VBN, Stern proposes that the personal norms come from values and that therefore they change from one person to other. In this way, he identifies 3 types of values related to green consumption, using Schwartz's core values, and dividing into three categories (Schwartz, 1992) (Rahman & Reynolds, 2017):

1. Biospheric values: involve inherent concern for the environmental and the Earth's biological system.

2. Altruistic values: concern for the welfare of others.

3. Egoistic values: Emphasized individual outcome.

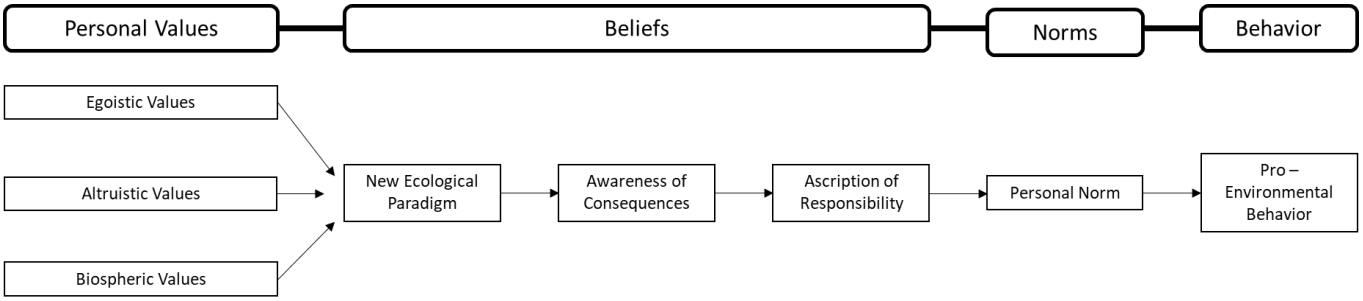


Figure 4 Value - Belief - Norm Model. Source: Stern 2000. Own elaboration.

This model also establishes that values, especially those related to the wellbeing of other humans and of the biosphere, are the center of the pro-environmental perceptions. These values considered relatively stable during a person lifetime, and they act like filters or amplifiers to the information received. VBN theory suggests that each person has a different degree of these values.

Besides the values, VPN theory proposes that also "Beliefs" influence the personal commitment towards the pro-environmental behavior: One of the most relevant beliefs by Stern is "New Ecological Paradigm" based on Dunlap and Van Liere work, NEP is related to a group of general

belief regarding environmental, therefore NEP is considered as an indicator of the pro-environmental beliefs.

Stern also stablishes that the beliefs go also through a process of norm activation "Norm Activation Model" -NAM. This model created by Schwartz (Schwartz, 1977) states that the activation of norms happens more probably when the individual has two types of beliefs, first the individual must be conscious of the consequences of his acts towards the norm's subject "Awareness of Consequences" -AC-, therefore the individual must feel responsible for causing or preventing those consequences "Ascription of Responsibilities."

1.2 Other variables

Also, other economics consumer behavior theories were applied as the theory of consumption values in order to determine the factors that influence the purchase consumer election with respect of green products (Lin & Huang, 2012). Other theory that has started to be used is the Theory of Protection motivation (Maddux & Rogers, 1983) which holds that individuals act and behave in function of risks and threats perceptions which they believe they are exposed to.

Many research papers based on these theories started to show interesting results, just to name a few: green consumers, those who look after sustainable consumption, they are usually willing to pay more for eco-friendly characteristic on products and therefore are the main target for products and services that have such characteristics. Nevertheless, even if the green consumers show that their purchasing behavior gives them a more ecological friendly lifestyle, they judge their behavior under some circumstances as inefficient therefore they have high expectations on the company's performance regarding environmental protection in order to be considered "green" (Bazoche, Deola, & Soler, 2008).

But Bougherara and Combris in their research they stated that the eco-friendly purchase behaviors are not only exclusively of the "Green consumer", and that currently much research have shown that the majority of people purchase or not purchase based on the Environmental attributes of the product/service (Bougherara & Combris, 2009). Therefore, that consumers who are not profile as "Green consumers" are also willing to pay for a prime for eco-friendly products (Sammer & Wüstenhagen, 2006). This suggest that consumers, in general, tends to

react positively to products that have sustainable claims on them (Barber, Kuo, Bishop, & Goodman Jr, 2012).

Following this idea, this thesis uses as starting point the 3 different value groups defined by Stern (Stern, 2000) Altruistic, egoistic and biospheric values; also it is considered that the personal values are the antecedent of the behavior and because this differs person to person and because they are stable and maintain trough time, it is believed that to study them can bring a higher understanding over the motivation and factors behind the desire of eco-friendly behavior (Koller, Floh, & Zauner, 2011), (Laroche, Bergeron, & Barbaro-Forleo, 2001); (De Groot & Steg, 2008).

On the other hand, there are other factors that can influence the green purchase behavior in a direct or indirect way. For example, Tanner and Kast (Tanner & Wölfing Kast, 2003) they believe that environmental knowledge is one of these factors, they stablish that certain degree of environmental knowledge is important for the "green behavior" to happen and this knowledge is a key on the understanding of the green consumer behavior. Other literature questions the influence of knowledge on the behavior and signals other factors, as attitudes towards environment, possess a major impact on the final green purchasing behavior (Schlegelmilch, Bohlen, & Diamantopoulos, 1996), (Joshi & Rahman, 2016).

Environmental knowledge, as a cognitive factor that an individual uses to take decision over environmental related choices are composed by facts or environmental concepts, problems, consequences, their relationship with their personal behavior, actions on what to do or not to do and the responsibilities of society as whole (Thøgersen, How may consumer policy empower consumers for sustainable lifestyles?, 2005) (Mostafa, 2007).

In this thesis we are also evaluating the influence of this factor by using a well-spread sustainable claim and European logo: Their knowledge of "Organic food" is tested. In order to further check the influence of this factor independently for the initial knowledge the respondents might have, two versions of the survey use for this empiric study had been carried out, in one the respondents receive feedback in case their answer is wrong, and the right definition is given before asking them to express their willingness to pay. More information on the next chapters.

3. Modern consumer trends:

Mintel, in their Global Consumer Trends 2022 Report (Mintel, 2022) and in the Global Food & Drink 2022 trends (Mintel, 2022) highlights the main trends of consumers:

1. In control

In times of uncertainty, people crave a sense of control over their lives and brands can give the information that consumers need to feel like they are the protagonist and in control. The heightened sense of vulnerability and insecurity, exacerbated by the pandemic, compels consumers to seek a greater sense of control. Concurrently, the proliferation of misinformation poses challenges, hindering consumers from conducting the essential research needed for making well-informed decisions.

Therefore, consumers need not only clarity but also transparency, flexibility, and the chance to make the choices that fit their induvial changing needs and circumstances. As example, they want to understand about the ingredients, what is included and why, but also to have transparency on the efficacy to be sure that product deliver what they promise.

Technology is facilitating methods of verification, tracking and tracing that helps to consumers to feel in control.

Regarding food industry in particular, consumers want transparency across the food and drink categories and claims, as they are seeking for clarity and transparency to inform their decisions.

This expected transparency includes topics regarding brand's climate-friendly and ethical commitments. For this, brands can add accountability with third party verification or measurements via rating systems. However, consumers also recognize that it takes time to build more environmental-friendly and ethical food systems, that's why if a brand misses targets or have low rating, they can still earn trust with honest admissions and transparent plans for improvement.

In the proximate future, companies will be expected to provide updates on progress relate to long-term or transitional policies, even more trust will be won by providing verified information, such as claims certified by third party organizations.

2. Enjoyment everywhere

After the lockdowns during pandemic years, people are happy and enthusiastic to go out of their confines and explore, play, and embrace novelty, both virtually and in the real physical world.

Consumer are seeking sources of joy after all the political unrest, post-pandemic and environmental threats have caused them anxiety and stress. Digital technology has become a common way for many people to find entertaining, but consumers are looking for fun and playfulness in all areas of their life.

Brands are noticing the importance of uplifting people during these times of uncertainty and distress by highlighting good news and emphasizing positivity in communication.

During the pandemic, food, beverages, and foodservice served as platforms for the creativity that consumers were seeking. Many people have even acquired new skills in cooking, baking, and drink-making, providing them with outlets for play, creativity, and the ability to make an impression when needed. For the future, consumers will be seeking products that amplify flavors, color, texture, aromas and interactively create moments of happiness or memorable experiences. To consider that multisensory products and gamified elements on the products can make food more fun.

3. Ethics Check:

While many brands have made their opinion heard on controversial topics, consumer want to see measurable progress against their goals. Consumer demand for, and expectation of, brands' ethical commitment is evolving. Consumers are not any more just waiting brands to "to be ethical" but rather they are demanding to see measurable, transparent, and consistent actions from the brands they chose to support. This pushes brands to ensure that ethical practices are not just a consideration but that they are fixed feature of their business model and long-term strategies.

With a growing concern about a range of issues, from food safety and ethical sourcing to data security and algorithm bias, consumers want to know more about the produces they buy and the brands they are buying them from.

Utilizing metrics to showcase ethical efforts, brands can assist consumers in quantifying the impact of their achievements, influencing in this way consumer purchasing decisions. Since ethical standards vary across industries, it is effective to seek support from, or collaborate with, specialized organizations that can offer more comprehensive guidance.

4. Climate complexity

Consumer are looking to brands to help them mitigate their impact on the environment. Companies that don't proactively change ahead of the climate crisis will be forced to change because of it.

These reports mentions that the global consumer of today and tomorrow they will demand to feel in control and will require transparency from brands and companies in all the touchpoints with them. Regarding sustainability, the current consumer is not any more impressed by simple promises from companies or considers sustainability's actions as "nice-to-have" characteristics, but rather expects that companies are already taking responsibility in their relationship with environment.

II. Companies: towards more ethical companies?

1. Role of the companies in society

For many years the role that companies have in our society has been a topic of research and debates, which has started taking significance in the past years as consumers are more aware of the influence their consumer behavior has in the industry: understanding the power of their demand to shape the actions and responsibilities of companies.

Companies are being called now to respond to the environmental challenges and this have made them re-design the way they operate, for example using new material on their products, renewable energy, reducing their emissions and use of polluting substances etc. All these activities and other regarding society are examples of the Corporate Social Responsibility – CSR.

First seeds of CSR can be traced back to the 40s, where after the WW2, big companies as Hormel in US started collaborating with the US government in programs related to help families affected by war with food. This non-profit collaboration gave Hormel great brand image and great publicity. During the 50s, Cold War times, CSR concept continued shaping and going towards the current concept: Howard R. Bowen in his book "Social responsibilities of the businessman" coins the words "Corporate Social Responsibility" and defines it as: CSR refers to the obligation of businessman to pursue those policies which are desirable in term of the objectives and values of our society (Bowen, 1953). It was during this politically volatile time (due to the war again communism) that companies started applying CSR initiative to show consumers that companies are able to pursuit business goals while also contributing to society (Latapí Agudelo & Davídsdóttir, 2019).

Some events in the 60s led companies to take further steps and to show that they were also capable to protect civil rights and promote social good, as example, when Coca Cola CEO Paul Austin Jr. threated to relocate the company from Atlanta if the city didn't honor Dr. Martin Luther King, Nobel prize winner, as planned due to social conservatives group opposition. This action highlights the enormous power and influence that private societies have on social issues as racism (Rogers & Kaplan, 2020)

The following years were marked by a decline of trust in companies: environmental catastrophes like the Oil Spill in Santa Barbara California for example generated massive protest across US ending up in the creation of "Earth Day" celebrated for first time in 1970. In 1971, the publication of "Social Responsibilities of Business Corporations" by the Committee for Economic Development of US fomented the public debate around CSR by stating that "Business functions by public consent, and its basic purpose is to serve constructively the needs of society – to the satisfaction of society" (Committee for Economic Development, 1971).

As explained in "Corporate social responsibility: the centerpiece of competing and complementary frameworks" by Archie B. Carrol (Carroll, 1991) it was from the 90s that CSR started being taken seriously in the companies and started taking international importance: "Globalization played a huge role here, as companies during this decades started growing internationally and therefore new upcoming challenges arrive as to identify and respond to social issues in the new markets and adapting to new policies and practices in the new hosting nations". Globalization also brough new competitors' landscape and greater visibility worldwide, pushing companies to be more careful on their sustainability initiatives. Internet further increase the access to information in an easy and quicky manner to a more conscious aware population and therefore labor conditions in developing countries, environmental catastrophes worldwide and other environmental degradation caused by companies were the main topics.

With the publication of the "Our common future" report by Brundtland report which defines Sustainable development as "Development that meets present needs without compromising future generations' ability to meet their own needs" an important step was taken and it widespread the believe of the need of constructing a more sustainable society (Brundtland Commission, 1987). From this point on, many companies started to publicly express their ethical efforts looking to improve their reputation: Ben & Jerry financial report and their view of the company environmental impact, Shell first ever annual report of sustainability explaining their efforts to become socially responsible in different areas, etc.

In 2001, the European Union in order to offer a guide for the investments in sustainable development published the "Green Paper on Corporate Social Responsibility" where CSR was defined as "The voluntary integration of companies' social and ecological concerns into their business activities and their relationships with their stakeholders. Being socially responsible

means not only fully satisfying the applicable legal obligations but also going beyond and investing 'more' in human capital, the environment, and stakeholder relations." (COMMISSION OF THE EUROPEAN COMMUNITIES, 2001)

When the Sustainable Development Goals (SDG) was stablished in 2015, a new social contract was created among companies and society: Companies were expected to play an important part in the global efforts to achieve the SGDs.

From company perspective, good CSR strategies can benefit them by increasing the loyalty from the consumers and employees, while increasing their brand reputation. (Righetto, 2021)

2. Green Marketing and Greenwashing

Hennion and Kinnear (1976) introduced the term "ecological marketing" as an effort to call for solutions to environmental problems, However, it wasn't until the 1980s, marked by a surge in environmental issue awareness, that scholars began delving into the connection between marketing and the environment (Coddington, 1993) (Peattie & Crane, 2005).

Even thought at first glance it seems that profit-seeking and protecting the environment objectives for a company are two different roads to go, numerous examples over the years have shown that it is feasible to, for instance, simultaneously decrease pollution and boost profits (Hart, 1997)This is where Green Marketing comes into play, presenting a creative opportunity to innovate in ways that make a positive impact while also achieving business success (Grant, 2007). Paetti (Peatti, 1995) defines green marketing management as "the holistic management process responsible for identifying, anticipating and satisfying the requirements of consumers and society, in a profitable and sustainable way".

Since the 80s a big boom of "green" products started filling the markets, as companies and government started paving the way towards sustainable developments. Prothero (Prothero, 1990) observed a rapid increase in the adoption of ecological products, which, in his view, signified a notable shift in consumer behavior during that period.

Green marketing began to be perceived holistically, prompting marketers to consider the entire chain of events in which a company engages. Consequently, activities such as planning, production, product features, logistics, and packaging became integral components of the

marketing process, alongside promotion, advertising, and other traditional elements (Ottman, 1993).

Nevertheless, after this initial boom of green products, it was discovered that the growth of green consumerism was slowly decreasing (Peattie, 1999), Crane (Crane, 2000) and similar authors explain that issues arising in the late 80s and early 90s, particularly concerning green product performance and green claims, led to a consumer backlash against green marketing. This backlash was fueled by a prevailing climate of skepticism. A feeling of distrust started appearing among consumers, especially after the unveiling of questionable actions committed by multinational companies: Nike in the 90s supered an incredible damage in their brand reputation and overall company image after accusations of underpaying workers in their factories in Asia, as well as employing child-labor on other developing countries.

Green marketing defined by The American Marketing Association (2016) is "the marketing of products that are presumed to be environmentally safe." And it redefines the 4Ps as follow (Calomarde, 2000):

1. Product

   The environmental objective for the green products consists in reducing the consumption of resources and contaminants in the production process, also to increase the conservation of scarce resources (Nandini & Desphande, 2011).

   The products should identify the environmental concerns of the consumers and adapt the products to meet these needs ((Kontic & Biljeskovic, 2010)

   The concept of product involves design, packaging, and ecolabels.

2. Price

   It is a key factor, as the majority of consumers will only be willing to pay a premium price when they see an additional value added to the product or services when compared to a "conventional" offer (Nandini & Desphande, 2011)

   It should have added value proportional to it's the premium price to pay (Kontic & Biljeskovic, 2010)

3. Place

   The management and integration of the supply chain should be considered when implementing practices to reduce the environmental impact. (Nandini & Desphande, 2011).

4. Promotion

   The relationship between the product and the environment should be leveraged and a greener lifestyle should be promoted by companies. In this way companies can also link their reputation and values towards an environmentally friendly one (Nandini & Desphande, 2011).

   The message and the ways to communicate the environmental information regarding the product should be consider. (Kontic & Biljeskovic, 2010).

As mentioned before, the current pro-environmental trend in the consumers keeps growing and therefore Green Marketing now plays an important role in the strategy of companies. Its result not only helps the environment but also helps to build the brand image and trust both for consumers and internal members of the organization.

Regarding the Promotion and the information transmission, Banerjee (Banerjee, Gulas, & Iyer, 1995) defines green advertising as any advertising that meets one or more of the following:

- Explicitly or implicitly addresses the relationship between a product/service and the biophysical environment.
- Promotes a green lifestyle with or without highlighting a product/service.
- Presents a corporate image of environmental responsibility.

Authors like Pranee (Pranee, 2010) stablished that for a green advertising to be honest and legal, it must oblige to the all the environmental regulations and policies, otherwise it risks for fall into the "greenwashing" area.

As companies started to understand the huge benefits of improving their environmental positioning trough green marketing, another social phenomenon started taking place: "Greenwashing phenomenon". Aggarwal in 2011 has demonstrated how the companies with a higher CSR score are even those more guilty of greenwashing. (Aggarwal, 2011)

"Greenwashing" was coined in 1986 by Jay Westerveld, as a protest to a controversial campaign called "Save the towel" promoted by many hotels that aimed to persuade clients to signal when a towel had been used or not in order to reduce the washing water, electricity and effort to wash an unused towel (Becker-Olsen & Potucek, 2013). Westerveld accused hotels of trying to save money rather than help the environment and point it out the many ways hotels were polluting and wasting resources. He defines as the act to mislead the consumer regarding to the company actions related to environmental matter, or to the benefits a product or service has towards environment.

Some tactics are the exaggeration of company actions, use of color or images that communicate something that doesn't display accurately what the company really is, or the use of irrelevant information that aims to deceive the shoppers and consumers.

In Italy, before 2014, greenwashing was part of the disciple of "Misleading advertising. "Regarding the particular phenomenon of "greenwashing," the Advertising Self-Regulatory Institute (IAP) released the 58th edition of the Corporate Governance Code of Commercial Communication in March 2014, the article 12 of the code suggests the following as a first step toward addressing the misuse of terms associated with environmental protection: "Commercial communication that declares or evokes benefits of an environmental or ecological nature must be based on truthful, relevant and scientifically verifiable data. This communication must make it possible to clearly understand which aspect of the advertised product or activity the benefits claimed refer to " (Istituto dell'autodisciplina pubblicitaria , 2014)

The information asymmetry between consumers and producers is a huge risk because If consumers doesn't trust the information transmitted by the companies and brands, then they will be reluctant to purchase pro-environmental products and therefore to carry out their sustainable purchases: Studies show that consumer often fear being scammed by unscrupulous sellers when products are promoted with green claims (D'Souza, 2004).

For this reason, companies should commit to deliver complete and easy-to-understand information about the product regarding its pro-environmental characteristics. This has pushed companies to use ecolabels in their products, in the following chapters, this topic will be further explained.

III. Society: towards a sustainable society?

1. Environmental sustainability concept evolution

When talking about the relationship between the impact of humankind activities in nature and its resources many terms are used such "Environment", "Eco-system", "Sustainability", "Sustainability Development".

To correctly define "Environment" is not an easy task as it has a double nature. There are two perspectives for these terms: "anthropocentric" and "eco-centric". Anthropocentrism in ethics is the view in which only humans' interests are morally important and therefore, effects on nature matter only indirectly, forasmuch as they also affect human interest, while natural resources and ecosystem do not deserve a per se protection (McShane, 2016)). Following this definition, environment "embraces all the external elements and factors that influence human life and can be use by individuals to satisfy their needs". On the other hand, Ecocentrism "considers all living beings and nature, deserving by themselves some form of protection irrespectively of the value they provide for humankind" (Muraca, 2021). The choice of one approach is not only a matter of ethics but also heavily influence policies.

Anthropocentric approach has been traditionally present on Western regulatory systems, where human wellbeing and health has been the center of any environmental measure. Also, at UN level we can find the use of this approach as environment is not conceived as a good/value to be protected by itself but rather an instrument at the disposal of humankind and therefore its protection is justified as far as it coincides with human interest, this can be found both in the Rio and Stockholm Declarations (Kingston, Heyvaert, & Čavoški, 2017).

Sustainability, and more specifically Environmental sustainability, goes back to the 70s where the first concerns about the consequences of unlimited growth started. (Meadows, 1974). Following the UN conference of Stockholm in 1972, the first major international conference related to environmental issues, many governments acknowledge the importance of protecting and improving environmental conditions as major issues, which affect the wellbeing of people

and that the natural resources of the earth must be safeguarded for the benefit and future (United Nations, 2023). These considerations started an era of agreements, summits, and other international commitments addressing the protection of the environment and demanding cooperation among nations. As result "Sustainability" and "Sustainable development" started being part of the public debate.

Etymologically, the word comes from the Latin "sustinere" which can be translated to hold, to preserve, to protect. Nevertheless, there were disagreement about the content and final meaning, then in 1987 UN Brundlant report brough a consensus regarding the meaning and the concept of Sustainable development defined as "Development that meets present needs without compromising future generations' ability to meet their own needs" (Brundtland Commission, 1987) and building therefore the concept around three pillars: social equality, economic growth and environmental protection. As it can be noticed, the concept has an intrinsic anthropocentric connotation as it focuses on protecting human well-being, this is further confirmed on the UN convention on Climate Change that mentions its main purpose as the protection of the climate system for the benefit of present and future generations of humankind (United Natons, 1992).

2. Sustainability policies evolution in Europe

The early environmental policy developed in the European Unition was based on the sectorial approach (i.e., Chemicals material risk, pollution limits, etc.) whit a lack of comprehensive vision about the important of environmental protection as a transboundary objective. Initially such initiatives were promoted at national level as "EU didn't have the necessary competences or institution to play a more effective role" (Muraca, 2021).

The EU environmental policy was formally founded right after the Stockholm conference in 1972 and the First Action Program in 1973 was adopted, this set out the principles and main objectives of its environmental policy.

Since the 90s, EU assumed a leading role in the international landscape by promoting initiatives in order to achieve global consensus and cooperation. Rio conference in 1992, represented a crucial moment in the development of this international partnership for social and environmental actions.

Kyoto Protocol in 1997 further confirm the international cooperation as 36 industrialized nations compromised to individual targets for the reductions of emissions (United Nations, 1997); here also it was set-up some market-based mechanism to meet the targets as the International Emission Trading System, the Celan Development Mechanism and the Joint Implementation. These instruments assume that it doesn't matter where pollution reductions occur, as long as they do. For example, the first instrument mentioned, allows countries that have emission units, which are permitted but not used, to sell them to countries that can't meet their targets this mechanism work primarily for carbon dioxin emission and therefore established a "Carbon market" where carbon was traded as any other commodity.

In 2015, the UN adopted the 2030 agenda for sustainable development (Unitated Nations, 2015) which identifies 17 goals and 169 associated targets to achieve a development which is sustainable in social, economic, and environmental terms.

3. Eco-labels in Europe

The increasing demand for sustainable food products has driven manufacturers to adopt a larger number of sustainability claims, certifications, messages, and other information tools to differentiate their products (Annunziata, Mariani, & R., 2018) . Sustainability characteristics are "credence attributes, and thus producers and distributors need ways to communicate to consumers, and consumers need ways to identify the desired attributes" (Sirieix, Delanchy, Remaud, Zepeda, & Gurviez, 2013).

Labelling has been given an increasingly important role in achieving sustainability goals by proving consumers the opportunity to consider environmental, social and ethical impacts on their choices. Ecolabelling schemes provide consumer with information about the environmental quality of individual products, at the point of purchase in order to enable them to choose products that are acceptable from an environmental point of view. (Thøgersen, Haugaard, P., & Olesen, 2010), therefore, Ecolabelling is an important tool to enhance the transparency and the consumer trust in the environmental claims present on the product, and therefore a tool for assisting consumers in their decisions-making process.

Many scholars support the idea that sustainability labels in general assist in decreasing information asymmetry between the supply and demand regarding environmental and social

issues. Important to consider that the current proliferation of standards and labels could also jeopardize consumer and could create skepticism (Sirieix, Delanchy, Remaud, Zepeda, & Gurviez, 2013) and the information overload generated "could limit the use of the sustainability labels".

Important point to consider is that the use of sustainability labels are nor a cost-free option for manufacturers due to the standards companies needs to achieved compared to conventional production, which according to many researches, this is compensated by the willingness of consumers to pay a premium price from them. (Annunziata, Mariani, & R., 2018)

With a growing number of consumers expressing concern about the environmental repercussions of their purchases, they are becoming more mindful of how their consumption practices can either positively or negatively affect the global environment (Verain, et al., 2012). Therefore, information instruments as the eco-labels have emerged as an important mean to support consumer food choices. (Thøgersen, Haugaard, P., & Olesen, 2010). For producer side, eco-labels also enable products to better differentiate food products on the basis of a further quality dimension which depends on the specific eco-label attribute (Pietro-Sandoval, Alfaro, Mejia-Villa, & Ormazabal, 2016).

In this way, eco-labeling creates additional value for consumers and provides producers with a competitive edge, simultaneously contributing to the reduction of environmental impacts in food production through market self-regulation (Pietro-Sandoval, Alfaro, Mejia-Villa, & Ormazabal, 2016).

In the food industry, in addition to the well-known organic label (Giannoccaro, Carlucci, Sardaro, Roselli, & Gennaro, 2019), other eco-labels with different standards have been introduced in the market as carbon footprint, rainforest alliance, MSC, etc. (Grunert, 2011), making more important to educate consumers the meaning of them as is it possible that they are all perceived as eco-friendly and therefore interchangeable among them: It is important to stated that an eco-label "covers a limited aspect of the broader concept of environmental sustainability and therefore its success or failure on the food market may be attributed to the scheme itself, to the general context in which it is implemented, and/or to the characteristics of the consumers who uses the eco-labels in their decision-making process" (Giannoccaro, Carlucci, Sardaro, Roselli, & Gennaro, 2019).

In order to streamline environmental communication, the Environmental Product Declaration (EPD) has been established. This tool aims to enhance interactions between distributors and consumers (B2C) and producers (B2B). Employing the life-cycle assessment (LCA) methodology, it quantifies the impact of products on the environment and consumer health. Through the EPD, derived from ISO 14020 standards, companies can communicate their actions regarding environmental commitment and strategies aimed at reducing environmental impact while highlighting the product.

ISO 14020 standards define three distinct types of environmental labels (Panconi, 2021):

- Type I: Voluntary ecological labels based on a multi-criteria system considering the entire product life cycle, externally certified by an independent body (e.g., the European ECOLABEL)

- Type II: Ecological labels with self-declarations by producers, importers, or distributors without the involvement of an independent certification body (e.g., "Recyclable," "Compostable")

- Type III: Ecological labels providing declarations based on established parameters and containing a quantification of environmental impacts associated with the product life cycle calculated through an LCA system. They undergo independent verification and are presented in a clear and comparable form.

The EU label criteria encompass various environmental aspects, including energy and water usage, chemical substances, waste production (multi-criteria system), product functionality, and service quality evaluation. These criteria have a validity period ranging from two to six years, after which they undergo reexamination considering regulatory and market developments, as well as scientific and technological progress. (Ministero dell' Ambiente e della Sicurezza Energetica, 2023)

In Italy, as of 2021, more than 224 Ecolabel (EU) licenses are active, covering a total of 8,195 goods and services across 17 different product categories. In the year 2020, there was a significant increase in the number of licenses compared to the previous year (from 179 to 224). However, there was a reduction in the number of certified products (8,560 to 8,195). The data

on the number of active licenses in a country is particularly crucial for understanding the dissemination of ecological and environmental certifications in the manufacturing sector. According to the Institute for Environmental Protection and Research (ISPRA), data on the prevalence of ecological labels indicates a concentration of these labels in the northern regions of Italy, including Lombardy (44 labels), Emilia-Romagna (36 labels), and Veneto and Piedmont (both with 29 labels).

Regarding the types of ecological labels present in Italy and internationally, they can be categorized into four main groups: environmental Ecolabels, ecological/organic Ecolabels, fair trade and solidarity trade labels and quality certifications. These four categories of ecological labels exhibit distinct characteristics and uses. However, within each category, individual labels share similar features. In this thesis we are focusing on the second category, the organic ecolabels.

Organic labels represent a significant production and commercial reality both in Italy and internationally. These labels communicate to consumers that the production adhered to the prohibition of pesticide use and involved natural animal farming, excluding intensive farming practices. Consequently, for a product to be defined as organic, it must adhere to precise rules, including the exclusion of chemical substances and a completely segregated supply chain, separate from conventional products. The main organic labels found in Europe are:

- Eurol-leaf for organic products

  It is a European label that certifies a product as originating from organic farming. When this certification is displayed on a product's packaging, the buyer can be assured that it does not contain any synthetic chemicals and has been produced naturally. Its use is mandatory for organic products sold within the European Union. In the following pages, this label will be further analyzed. (European Commission, 2023)

Figure 5 Euro-leaf logo for organic products

- Ecocert

It is more commonly found on beauty creams, but its scope is expanding to include organic cosmetics as well as textiles and fair-trade products. (Group Ecocert, 2023)

Figure 6 Ecocert logo

- CosmeBio

It ensures that purchased cosmetics are produced through processes that respect both humans and the environment, without containing GMOs, colorants, petroleum derivatives, or synthetic fragrances. (Cosme Bio, 2023)

Figure 7 Cosme Bio logo

- Nature & Progress

It is one of the most stringent ecological quality marks in terms of compliance with the specifications and standards set by the association. (IFOAM ORGANICS INTERNATIONAL, 2023)

Figure 8 Nature & Progress logo

2.1 Euro-leaf logo for organic products

The organic label gives consumer access to information about the social and environmental performance of a food supply (Anastasiou, et al., 2017).

Different certification logos had been present in Europe that at the end gave as a result the current "Euro-Leaf" organic certification. The initial voluntary certification emblem for organic products made its debut in the late 1990s. It featured the EU flag with an ear of wheat in the center and the phrase "Organic Farming" on top, presented in the official language of its use.

With the introduction of Regulation 834/2007, this logo was replaced by a mandatory one. However, it was promptly withdrawn from the market following a legal dispute with the German retailer Aldi, who raised concerns about its resemblance to Aldi's existing logo for their organic product range. Additionally, the logo had the word "BIO" in the center, which posed challenges for English-speaking countries where the term "Organic" is commonly used to describe organic products (in Latin languages the translation is similar to Biologico, Biologique, etc.). (Anastasiou, et al., 2017).

The increase of consumer's demand for food quality and safety, led EU to adopt new policy measures and initiative to promote the consumption of organic products, as the redesign of the organic logo and in July 2010, the EU launched the new European logo, the "Euro-leaf" for organic food certification. Some of the challenges the current logo has are the following (Anastasiou, et al., 2017):

- How quickly and easily could the new logo win the consumers recognition and trust. The EU initiated campaigns to promote and educate the public about the logo. The logo incorporates a green background, typically associated with "Natural" and "high nutritional value." However, the absence of the terms "Organic" or "Bio" on the logo may potentially hinder consumers from establishing a positive connection between the emblem and the intended message.

- Whether it would cause a premium on organic foods. Not yet a final conclusion whether the use of the logo is perceived for the consumers as actual "added value". Many researches continue to explore this topic. Some articles as (Anastasiou, et al., 2017) after an empirical study in Greece, concludes that the confidences of consumers or willingness to purchase didn't increase if compared with the previous logos and that it is unclear if the new logo brings "added value" for an organic product in the willingness to pay of the customers. This report finally concludes that the EU competent authorities should invest more in marketing communication in order to increase de consumer awareness of the Euro-leaf logo.

IV. Food industry and sustainability: The Italian case

1. The Organic Olive Oil industry in Italy from the farm to the shelves.

"The global food system is one of the main responsible for many environmental impacts as the greenhouse gas emissions, water consumption, soil erosion and degradation as well as biodiversity losses" (Tilman, K.G., Matson, Naylor, & Polasky, 2002)

Agriculture has a substantial environmental impact in three key aspects: (Ritchie, Rosado, P., & Roser, 2023)

- Water Usage: Agriculture requires extensive freshwater resources, leading to environmental strain in water-stressed regions. It both consumes significant water and pollutes water bodies with nutrient releases.

- Climate Change: Agriculture is a major contributor to climate change, accounting for approximately 25% of global greenhouse gas emissions.

- Land Use: Agriculture utilizes a vast amount of habitable land, with half of such land worldwide dedicated to farming. This extensive land use has led to the loss of natural habitats, reducing biodiversity. Reducing agricultural land use and allowing natural lands to recover can help wildlife rebound.

The global food system has experienced escalating pressure due to population growth and shifts in food consumption patterns (Godfray, et al., 2010) To meet the rising demands for food, there is a necessity for improving the productivity of food supply chains. However, such improvements often involve the intensification of farming methods, further amplifying the environmental impact of the food industry (Garnett, et al., 2013)

In 2018, a multidisciplinary study published in the Journal Natured showed show that between 2010 and 2050, as a result of expected changes in population and income levels, the environmental effects of the food system could increase by 50–90% in the absence of

technological changes and dedicated mitigation measures, reaching levels that are beyond the planetary boundaries that define a safe operating space for humanity (Springmann, Clark, & Mason-D'Croz, 2018)

Therefore, adopting sustainable practices in the olive oil sector can gain competitive advantage and contribute to territorial well-being, considering environmental, economic, social, and generational aspects. (Viola & Marinelli, 2016)

The Olive oil system plays an important role in the sustainability of the food system that underlies the Mediterranean diet patterns, for both environmental and socioeconomic aspects (Dernini & Berry, 2015) (Carzedda, et al., 2021) Different from other derivates of the olive oil industry (lampante oil, refined oil, ordinary oil, olive-pomace, etc.), the EVOO is solely obtained through thermically controlled mechanical extraction processes.

The EVOO production is composed by the following phase (ASSISTOL, 2023):

1. Harvesting the Olives: The olive harvest typically takes place during the autumn months when the olives have ripened. In traditional methods, skilled workers carefully hand-pick the olives from the trees, ensuring minimal damage to the fruit. In modern production, mechanical harvesters are sometimes employed to streamline the process. Usually because of the geographical characteristics where these plantations take places, areas with slopes, mechanical harvesting is not always possible. Traditional harvesting is quite time-consuming and requires a lot of employed labor.

2. Transportation to the Mill: Speed is of the essence in preserving olive quality. Immediately after harvesting, the olives are swiftly transported to the mill to avoid any degradation.

3. Cleaning and Washing: Upon arrival at the mill, the olives undergo a rigorous cleaning process to eliminate any extraneous materials, such as leaves and twigs. Subsequent thorough washing ensures the olives are free from contaminants.

4. Crushing the Olives: To extract the oil, the olives are crushed to create a paste. While traditional stone mills are still used in some regions, modern facilities commonly

employ stainless steel or granite mills. The objective is to rupture the olive cells and release the oil within.

5. Malaxation: Following crushing, the olive paste is subjected to a phase known as malaxation. During this stage, the paste is gently stirred, facilitating the aggregation of oil droplets and the separation of oil from other components. Malaxation can be conducted at controlled temperatures to optimize the extraction process.

6. Separation of Oil: The olive paste is then directed to a centrifuge or press for separation. Centrifugation is the prevailing method, efficiently dividing the oil, water, and solids. The resultant mixture is spun to separate the constituents, with the oil naturally ascending to the surface.

7. Decantation: Post-separation, the oil undergoes a decantation process, separating it from any residual water or solids. Some producers may employ natural settling and decantation, while others employ advanced techniques.

8. Filtration (Optional): Filtration is an optional step in the process, employed by some producers to eliminate any remaining impurities. This can enhance the oil's clarity and extend its shelf life.

9. Storage: The finished extra virgin olive oil is stored in carefully chosen containers, typically stainless-steel tanks, or dark glass bottles. The choice of dark glass containers is vital, as it shields the oil from detrimental effects of light and oxygen. Storage in a cool, dark environment is essential to maintain the oil's quality.

10. Quality Testing: Rigorous quality and sensory tests are conducted to ensure that the extra virgin olive oil meets strict standards regarding flavor, aroma, and chemical composition. Only oils that pass these stringent tests are granted the esteemed "extra virgin" designation.

11. Bottling and Distribution: After successfully meeting the quality criteria, the extra virgin olive oil is bottled for distribution. Bottles are selected with an emphasis on preserving the oil's integrity, typically using dark glass to protect against light exposure. It is then stored in suitable conditions for eventual market release.

EVOO is specially valued for their organoleptic and nutritional properties: Low acidity levels (less than 0,8% according to European standards) and the high content of monosaturated fat and polyphenolic, antioxidants, and anti-inflammatory compounds (Serreli & Deiana, 2018)

The value of EVOO is further enhance by its potential to promote multifunctional and sustainable agricultural models, which is particularly true and beneficial for traditional olive tree growing regions (Casini, Contini, Romano, & Scozzafava, 2016)

Within the agrifood sector, sustainability is historically closely linked to organic production. Important to remember that sustainability can refer to a wider range of agricultural elements and practices (Carzedda, et al., 2021) as: agroecology, precision agriculture, organic farming, agroforestry and animal welfare standards, carbon management and storage and adoption of circular economic models (European Commission., 2019)

Nevertheless, organic certification is for the consumer the main recognizable sing of the environmental sustainability in food (Carzedda, et al., 2021). The International Federation of Organic Agriculture Movements (IFOAM) defines the Basic Standards for Organic Production and Processing (IBS) which stablishes the principles, definitions, and requirements on which the different national organic certification schemes are based, some of the certifications that are regulated by them are: Soil Association Standard in UK, USDA National Organic Program, etc.. (Ward & Mishra, 2019;)

Whereas at European level is the Council Regulation No. 384/2007 (Council Regulation, 2007) is the one that sets the legal basis for the organic farming in Europe and defines as "Organic production is the integral system of managing and production food products, which combines the best practices with regard to the preservation of the environment, the level of biological diversity, the preservation of natural resources, the application of high standards and proper maintenance (welfare) for animals and a method of production that corresponds to certain requirements for products manufactured using substances and process of natural origin (Dreval, et al., 2020)

Whitin the sustainable food systems approach, the mediterranean diet has a key role, (Amiot-Carlin, et al., 2017) as this diet requires less soil, water and energy compared with other

consumption patterns like those based on meat which has a high environmental impact (Pairotti, et al., 2015)

Mediterranean region has been a major food-producing area with a large agro-biodiversity, but this region has been facing massive environmental changes that are threatening their local food system capacities like land usage and degradation, scarcity of water, pollution, climate change, and biodiversity loss (García-Martín, Torralba, Quintas-Soriano, Kahl, & Plieninger, 2020)

The environmental challenges that the region is facing has brough up progressive evolution to the concept of Mediterranean Diet over the past decade: from a healthy dietary pattern to a sustainable diet model and to a catalyst for a resilient strategy of the Mediterranean area (Hachem, et al., 2016)

The perception of Mediterranean Diet as a healthy diet and the fact that it has as symbol the olive tree for this lifestyle has pushed the demand for typical local food of the mediterranean region, especially for EVOO (Xiong, Sumner, & Matthews, 2014) which has become one of the most recognizable components of this diet and is conventionally linked to the concept of well-being worldwide (Hachem, et al., 2016) : Olive oil is a main ingredient in the Italian cuisine, which cannot be absent of Italian homes and restaurants.

Spain, Italy and Greece produce around 70% of the global olive oil supply, and the Mediterranean countries of Europe consumed more than half of the world production, the EU olive oil industry is expected to grow in production capacity in average 1,1% per year, landing up to 24 million tons in 2030 (European Commission, 2019)

The olive oil has evolved from a traditionally "Bulk" market, which considered the olive oil as a commodity, to a more customized market where quality and sustainability claims are increasing. As a result, the olive oil is increasingly being perceives a food specialty, like wine and other high-end quality products (Cacchiarelli, Carbone, Laureti, & Sorrentino, 2016)

In mediterranean countries such as Spain, Italy, Greece and Portugal, the olive oil industry has a great economic importance as olive farming covers a large portion of the agricultural land, and depending on the level of production intensity, provides positive or negative environmental externalities (Beaufoy & Pienkowski, 2020). Although the increment of intensive modern

plantation, most of the European olive farming are still "low-input traditional plantation" which have the following characteristics (Giannoccaro, Carlucci, Sardaro, Roselli, & Gennaro, 2019)

- Low-density planation with large and very old trees
- Location in hilly or mountainous areas, frequently on terraces
- Not irrigated
- Minimal use of agro-chemicals
- Soil management with minimal tillage and/or grazing

As mentioned, olive plantations have a significant positive environmental impact, particularly in preventing soil erosion on sloping lands. Additionally, they exhibit low negative environmental impacts, characterized by minimal water resource utilization and limited use of agro-chemicals. (Beaufoy & Pienkowski, 2020), however these traditional olive plantations are less viable in economic terms and most vulnerable to abandonment (Roselli, De Gennaro, Cimino, & Medicamento, 2009)

Many researchers have been carried out to understand better some contradictions found in the value chain of organic extra virgin olive oil (Santucci, Callieris, & Bello, 2021):

- There is formally organic certified vast area of approximately 239 000 hectares in December 2018, but relatively small quantity of certified organic EVOO: 40 009 tons. Meaning that there are volumed of potentially organic EVOO not valorized compared to the large area with olive trees that actually receive subsidies.
- There is a high number of small and tiny producers, who respect the rules of organic farming but who don't want to apply for the certification.

In both cases, the premium price potentially achievable from the market does not materialize, leading to losses for the organic system and the overall territories (Stotten, Bui, Pugliese, Schermer, & Lamine, 2017). This results in reduced demand for skilled labor and materials used in organic pest control, as well as a decreased need for other components such as bottles, labels, boxes, etc.

(Santucci, Callieris, & Bello, 2021) suggests that this problematic is due to the political decision for the decoupled subsidies to organic areas as it does not favor the growth of the certified organic output and consequently undermines the potential positives impacts of the organic option as more labor, more income and wider rural development. This study suggested that government should give "emphasis to an integrated value chain approach in order to exploit the synergies between the area subsidy and the valorization of the raw output though contracts with millers and other stakeholders of this value chain".

Olives produced in the areas after period of conversion can be considered "organic", then all olives conventional or organic, are quicky process in an olive mill to avoid fermentation that can affect the quality or the oil. In Italy, the larger producers have their own olive mill with machinery for bottling, but the small and tiny producer must bring their olives to the external mill that can be managed by cooperatives or individual owners. The smallest producers usually consume the oil among family or friends which doesn't requires the certification or labels. On the other hand, medium and large producers tend to have their oil valorized trough packaging, certification at the mill.

Other actors are also specialized bottlers, which are medium or large companies, local or international, that buys the olive oil in bulk from the producers or from the olive mills and proceed with the blending, bottling or canning in large and authorized plants with their own brands or private label for supermarkets. (Santucci, Callieris, & Bello, 2021). As we can see there is a complicated network of actors which requires control and certification in each stage, as not mixing the organic olives with conventional one in any part of the process.

The study carried out (Santucci, Callieris, & Bello, 2021) has identify 2 possible explanations for the gap between the planted organic olives and the organic EVOO output:

1. The existence of the so called "Eco-smart" landowners.

   Which can be producers because their objective is not the production of olives and/or oil but rather the decoupled area subsidies. They normally have olive plantation in marginal areas, like slopes difficult to mechanized, old plantations, or even plantations that have been abandoned time ago. This kind of eco-small landowners are not found only the olives but also in other agricultural sectors as pastures and meadows. This is

causing a "Organic Paper Farming" where there is no reduction of pollution, reduction of chemicals, or any increase of the supply of sustainable food to the consumers.

2. The technical and bureaucratic barriers that the olive mills can be facing if they want to be certified to produce organic EVOO oils.

The research indicates a decrease of 14.7% in the number of olive mills compared to previous years (2002 vs. 2017), particularly in central and southern Italy, where the majority of olive production is concentrated. This reduction is attributed to various factors, including the closure of older and smaller mills in favor of more modern, specialized, and larger facilities. Additionally, some mills closed due to decreased volumes of olives to process, stemming from the abandonment of olive lands.

Worth to mention that the reduction of number of olive mills has been accompanied by the progressive adoption of the organic option, which by 2020 was accepted by 33,1 % of all olive mills. These mills usually accept both conventional and organic olives and this requires them to be careful with separating the lines of production and therefore it implies investment in compulsory documentation, labor, and others, specialized advisors and certification bodies. Same situation goes for the bottling process, carried out either in millers or in specialized bottling facilities where in order to be continuing to obtain the "organic" certification must assured that there was not mix of conventional olives with those coming from organic farming and assure the content of the bottle trough different controls.

In 2018 (SINAB 2020) there were in Italy 4138 label holders of the organic EVOO, from which 3 150 of these belong to farmers while the rest belongs to the other actors of the value chain as millers and blender/bottlers. (Santucci, Callieris, & Bello, 2021) compares 3 150 labels own by farmers to the 43 069 people who apply for the decoupled subsidy for the organic olives tree cultivation: only 7,3% of them valorize autonomously their organic olive oil.

One suggested reason for this "Gap" was the hypothesis that the "premium" price paid for organic was no so attractive: Time ago, the organic EVOO were in an almost similar range as high quality conventional EVOO, even some nicely packed and promoted conventional EVOO could be more expensive than organic, but as Meo showed in 2020 (Meo, 2020) the market

prices for bulk quantities from 2009 -2019 indicates that nationwide the organic EVOO has always received a relative higher price than the conventional counterpart reaching a peak in 2010.

Similarly, many studies like (Giannoccaro, Carlucci, Sardaro, Roselli, & Gennaro, 2019) suggest that consumers recognized the value of the organic EVOO and therefore the gaps of subsidized organic olives and certified EVOO cannot be justified with the scare demand from the consumers.

Year	Farm gate			Retail		
	Conv	Org	Δ%	Conv	Org	Δ%
2009	2.5	3.6	44.0	4.0	7.9	97.5
2010	2.7	4.1	54.0	3.8	7.9	107.9
2011	3.2	4.3	35.0	3.8	7.7	102.6
2012	2.6	3.8	44.0	3.7	7.7	108.1
2013	3.0	4.3	41.0	4.1	7.9	92.7
2014	3.9	4.8	23.0	4.0	8.0	100.0
2015	5.4	6.0	12.0	4.7	9.6	104.3
2016	4.1	5.9	44.0	4.8	9.0	87.5
2017	5.5	7.1	28.0	5.1	8.4	64.7
2018	4.6	5.9	29.0	4.9	8.0	63.3
2019	4.9	7.0	42.0	4.5	7.7	71.1

Table 1 Historical Prices for Organic vs Conventional EVOO. Source: Meo, 2020 - SINAB

This nationwide average covers up that there are differences among the regions, as prices tend to be lower in southern Italy, in the areas where most of the production is based while central and northern regions, prices are much higher. (Santucci, Callieris, & Bello, 2021). For example, in Tuscany, the organic EVOO was priced – at the farm gate - around 16.9 euros per liter vs the 5.5 euros of conventional one, whereas in Sicily, the organic EVOO at farm gate is 6,3 euros vs the 6 euros paid for the conventional EVOO. (Santucci, Callieris, & Bello, 2021)

These premiums gain increased significance when the oils reach the shelves, where they face competition with a diverse array of products. This includes products of national or imported origin, from EU member countries or third countries, blended or unblended, geographically indicated or not, organic or conventional, bottled or in thin cans, varying in packaging volume, featuring private labels or brand labels, and more. Additionally, the wide variety of distribution

channels, such as large retailers, national retailers, specialized shops, gastronomy boutiques, online stores, etc., further complicates the dynamics that impact the final prices of these products.

For the second point, it can be related to the large amount (not quantifiable) of small and tiny olive producers that find the certification was too costly or complicated and therefore they don't apply for their and even lose the decoupled area subsidy given by European union (Santucci, Callieris, & Bello, 2021). This leads to underestimate the areas with olive trees under organic management and consequently the output of olives and Evoo. This phenomenon has been observed in other agricultural sectors as well. In order to facilitate this the European commission, with the regulation 848/2018 has opened to the "Group Certification" which helps small and tiny produces to receive the decouple subsidy and possible obtain a proper premium price.

In 2019, the organic agriculture area in Italy covered nearly 2 million hectares and involved almost 70,000 producers (ISMEA-CIHEAM, 2019) . Many scholars often refer to organic agriculture as an "Italian success story" because various socio-economic indicators, such as the average size, age, and education of farmers, turnover, marketing strategies, income, and employment, surpass those of the overall Italian agriculture (Santucci & Pignataro, 2002).

One of the main problems the Italian olive agriculture faces, as seen before, is that the primary production is very much fragmented, with a huge number of small and tiny units and it is even difficult to quantify. In 2007, ISTAT, quantified in 775 783 the specialized olive farms, while in 2010, MiPAAF indicated that there were about 1 050 000 people who cultivated some olive trees.

The structural analysis of the Italian farms with olive trees has been characterized by (MiPAAF 2016)

- Average size slightly over one hectare, accompanied by fragmentation in many plots.
- Over 60 percent with less than 100 olive trees.
- 78 per cent of the units with less than 250 trees, representing 46 per cent of the olive output.

- 12 percent between 250 and 500 olive trees.
- 1.3 percent above 1000 trees, representing 25 percent of the output.
- 30 percent of area in difficult orographic situations.
- 66.1 percent are producing for self-consumption, only 4.3 percent are managed professionally; 29.6 percent are classified "complementary", meaning that the farmer has other sources of income.
- Quite high age of producers.

In the last decades there have been a decrease of the olive-oil sector as the rural exodus have reduced the labor force that due to the steepness of the slopes where the olive trees are cultivated makes difficult to automize its harvesting or pruning (Santucci, Callieris, & Bello, 2021).

A substantial portion of the Italian olive oil sector operates at a financial loss and relies heavily on European subsidies for support. The demand is primarily met by oils of varying qualities imported from other European countries such as Spain, Greece, and nations in the southern Mediterranean region, including Tunisia. This importation has played a role in sustaining olive oil prices in the Italian market (Niklis, Baourakis, Thabet, & Manthoulis, 2014)

Over the past three decades, various initiatives have been implemented to counteract the gradual decline of the olive oil sector and to persuade both domestic and international consumers (Mili, 2006) to embrace higher prices for Italian Extra Virgin Olive Oil (EVOO) with certified qualities, such as Geographical Indications, eco-labels like the Organic label, promotional campaigns linked to tours (such as Oil Routes, fairs, and events), as well as increased national and international marketing efforts. Consequently, Italy boasts 46 geographical indications for EVOO, the highest number within the European Union.

Since 1991, the organic farming has been supported by the European Union, initially with a definitory Regulation, then since 1992 with the provision of a decoupled subsidy that is given for the "conversion" phase (when farmers start using organic techniques takes 3 years to fully convert to organic), and then the "maintenance" of the organic methods. In 2018 both conversion and maintenance areas were 238 129 hectares, 21,3% of the total national surface

with olive trees. Compared to other organic surfaces, organic farming of olives is in the 4th position, after Meadows and Pastures, Fodder crops and all Cereals together. In 2020, organic olive farming Accounts for 22% of the whole olive surface (ISMEA, 2020)

Since agriculture is devolved by the national government to the regional ones, each region can autonomously decide the amount per hectare to better calibrate the amount of the subsidy and to support some categories of producers. The per hectare subsidy is calculated with the back-up of experts and it could be (Santucci, Callieris, & Bello, 2021):

- Cover the supposed difference between the conventional income and the organic income.
- Pay the farmer for the positive externalities (nicer landscape, lesser pollution, more shelter for wildlife, more nutritious foods, etc.
- Counterbalance the higher transactions.

2. EVOO trend in Italy:

In the latest edition of "Olio Officina Festival 12va edizione" it was stated the main objectives of this industry: the cultural switch and the perspective change of consumers to the Olive Oil products: If the consumers keep looking at the EVOO as a mere condiment, and not as a food itself, it will be difficult to give more added value to it. (GDOWeek, 2023). In order to execute these changes, it is necessary the active participation of the GDOs, the large-scale distribution channels, to re-assess their promotional strategies towards EVOO.

Currently, according to the Nielsen Data (FOOD Magazine, 2023), the market trend for the EVOO in Italy are: (2021 VS 2022) – Sales data from Large-scale distributions (Ipermercati, Supermercati, Liberi servizi and Discounters) which according to Nomisma (ANSA , 2023) 40% of Italian consumers buy EVOO trough this channel:

- Sales Value in Euro: 848 900 734 euros (+7,3% vs Previous Year)

- Sales Volume in Liter: 160 117 530 liters (-5,9% vs Previous Year)

- Average price (euro per liter): 5,30 eur/liter (+14%0 vs Previous Year)

The main Trends of the market are:

1. Growing of 100% Italian EVOO

As we can see on the sales data, there has been an important decrease of sales volumes due to the different problems the EVOO industry has endured in the last year in the Mediterranean Region, that spiked up the price, +14% vs previous year. This high increment on price still allowed the industry to have positive results in their revenue.

Among the main segments of EVOO consumed in Italy, the biggest one is the "Comunitario EVOO" which uses a blend of olives from European Union countries in order to produce the EVOO. This segment alone that represent more than the 65% of liters of EVOO ourchased in Italy, experienced a hug drop of sales volume of almost 10% compared to 2021 due to the increment of price of +18% vs 2021, and as a result the profitability of this segment drop by -6,6%.

On the other hand, the second segment, the "100% Italian" EVOO, that represents around 25% of the national consumption, showed an increment both in volumes (liters) and in sales value of +8.8% vs 2021 even if average price had an increment of around +4%. This important increment on sales of the 100% Italian EVOO can be explain also due to the bigger increase of price of the "Comunitario" EVOO that influenced consumers to shift to 100% Italian EVOO.

ASSISTOL, the Associazione Italiana dell'Industria Olearia (Italian Association of the Oil Industry), highlights what they considered the one of the worst and most complex oil campaign in the last decades, the oil season of 2022-2023 due to several factors: scarcity of raw materials, inflations, high price of energy, adverse climate, etc. According to them, the Italian production for 2023 won't be able to arrive to 200 000 t. of EVOO, similar situation for the other mediterranean countries: Spain will stop at 900 000 t. for this upcoming season even if normally they don't go lower than 1,3 Mio t. this creates

even more uncertainty on the EVOO offer worldwide; Portugal will also produce -30% vs previous campaigns, and Tunisia -16%.

In the following figure we can see how in the last 13 years, Italy have been suffering a drop in their production of EVOO, specially affected are the southern regions. With the expected low production for the current season 2022/2023, the volume will further decrease, similar to the other Mediterranean producers.

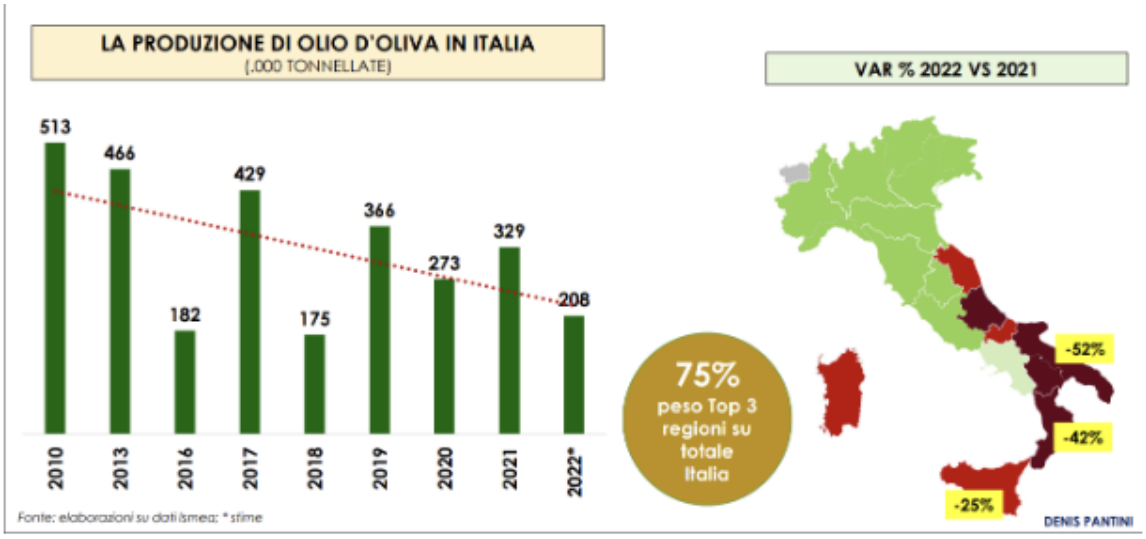


Table 2 Olive Oil Production in Italy. Source TerraEVitta, URL: https://terraevita.edagricole.it/featured/olio-oliva-produzione-calo-strutturale/

ASSITOL, also raises the point to create synergies with other actors of the supply chain and other stakeholders, in order to faced together the upcoming supply problems. Also, the topic of low sterols level found in the olive plantations, that they consider a "nature's anomaly" that can put into risk great quantities of high quality olive (FOOD Magazine, 2023): The required amount of these natural lipid compounds, which is considered a measure of purity, is causing challenges for companies. This is true even for high-quality productions, where the overall sterol content is lower than the legal limit of 1000 mg/kg.

The specific amount of sterols is crucial for determining the authenticity of the oil, and not meeting this requirement may lead to legal consequences. Italy has raised this concern with regulatory bodies, but finding a resolution is taking a considerable amount of time.

In the realm of extra virgin olive oil (EVOO), the surge in prices, propelled by a 50% reduction in Spanish olive yields and a 240% price hike over a few years, is casting a shadow on the Italian sector. Previously lamenting the undervaluation of their product, Italian producers now find themselves grappling with a reality different from their expectations. Despite EVOO now being consistently priced above 7 to 8 euros per bottle, the anticipated celebration is turning into a realization that all is not well.

This price increase has led to a noticeable decline in consumption, causing concern even for those who have strengthened their income during this period. According to Circana data, a company specializing in consumer behavior analysis in Italian retail, EVOO sales dropped by 9% in the first ten months of 2023. The international scenario is no better, with global olive oil consumption decreasing by 18% in 2023, as reported by the EU Commission.

A key factor contributing to this situation is the drastic reduction in Spanish olive oil production, plummeting from 1.8 million tons in 2018-19 to a mere 663,000 tons in the 2022-23 season. This decline is attributed to drought affecting super-intensive olive orchards in Spain, necessitating triple the water quantity compared to Italian orchards. Consequently, the reduced water availability has negatively impacted production, leading to a significant increase in the original price of Spanish olive oil.

However, this surge in price has not been sudden, as Spain has been actively enhancing the value of its olive oil over the past decade. In the last ten years, Spanish olive oil prices have risen by 240%, outpacing the +173% increase for Italian olive oil. The pricing dynamics of Spanish olive oil directly affect the retail prices of EVOO bottles sold in Italy. According to Assitol, the Italian association of olive oil industries, only 24% of shelf EVOOs are 100% Italian, with the remaining 76% being blends of extra virgin oils from various sources, predominantly composed of Spanish and Italian oils.

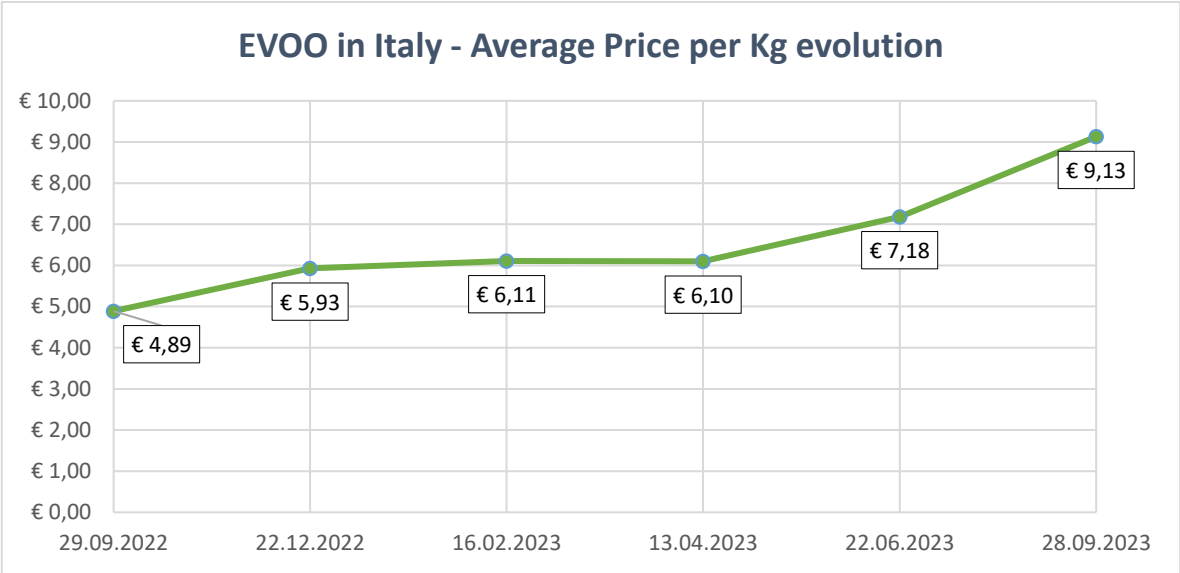
Another perception challenged by the current market conditions is that of promotions. Long criticized by producers and industrialists for devaluing olive oil, promotions have significantly diminished. While over 70% of EVOO sold in Italian retail was previously offered in promotions, this figure has now dropped to 54%. Despite this reduction, the

turnover from promotional sales in the first ten months of the year stalled at 69 million euros, indicating a loss of 28 million compared to the same period last year.

However, neither the price increase nor the decline in promotional sales has proven to be a remedy for the sector. Some entities are exploring market diversification through new products and distribution channels. The president of Assitol's Olive Oil Group, Anna Cane, sees the current situation as an opportunity. She advocates for a robust promotional campaign explaining to consumers that the shelf price increase, when spread over the bottle's usage period, amounts to only a few cents. Additionally, she emphasizes the need to communicate and appreciate the nutritional qualities of EVOO, likening it to a food supplement. Despite the short-term dip in consumption, Cane believes that a concerted effort to highlight the virtues of EVOO is crucial for the sector's sustained growth. (dell'Orefice, 2023)

Latest sales data shows (August 2021-2022 vs August 2022-2023) even a higher effect of the industry difficulties: a sales drop in volume (liters) of -9%, an average price increase of +27,4% around of 6,34 euros per liter, and consequently an increase in sales value of 16%.

But the spike of prices is constantly growing month by month as shown in the following chart (Price per KG of EVOO around, 1.1 L per KG, and at factory level – excluding transportation or other additional costs- using the data provided by ISMEA (FOOD Magazine, 2023):



Graph 1Evolution of Kg. Price of EVOO in Italy. Source: ISMEA. Own elaboration

2. Higer relevance to sustainability:

The offer of EVOO on the supermarket shelves continue to aim towards the appeal of Sustainability. (GDOWeek, 2023) (FOOD Magazine, 2023):

- Big players as Carapelli (260 Mio Euro Company Revenue in 2021- (ReportAziende, 2023)) had invested in sustainability topics in order to face their current decline of the EVOO sales in Italy. They had invested in "Traceability" projects and packaging innovation and sustainability: their consumers can now track the value chain of the bottle acquired through scanning the code found in the label, the bottles are now using more recycled glass and recyclable packaging materials, and the company is applying diverse sustainability protocols through all the value chain.

Figure 9 Carapelli portfolio EVOO. Source: https://www.carapelli.it/

- Oleificio Zucchi, (378 Mio Euro Company Revenue in 2022 - (ReportAziende, 2023)) managed to keep a positive sales results vs previous year in the current context, thanks to some of their most premium product as the 100% Italian Sustainable EVOO, the first EVOO in Italy that comes from a supply chain completely traceable and with a sustainable certification. Trough QR codes located on the back of the label, consumers can check the origin of the blend, the plant varieties, and all the sustainability parameters applied in each step. The DTP 125, is the first and only sustainability certification for the entire extra virgin olive oil supply chain at national level, and it was developed by CSQA Certifizazione S.R.L for Zucchi. This certification is aligned with the model of three pillars of sustainability and a 4th component is added, the nutritional and health pillar. Nevertheless, this certification lacks an economic and social component and also it is difficult to interpret and complex to apply. (Lombardo L, 2021). According to the company, their latest positive sales results for this particular product in an overall negative context for the category of EVOO, confirms that that consumers are looking for products that are healthy, traceable and 360' degrees sustainable from the farming practices to the packaging.

Figure 10 Zucchi portfolio of EVOO. Source: https://www.oleificiozucchi.it/business-area/portfolio-prodotti/

- Farchioni (129 Mio Euro Company Revenue in 2022 - (ReportAziende, 2023)), underlines that their attention to Environmental sustainability is an important part of their company history and that nowadays becomes active target for their investment. Currently they have more than 589 hectares of Olives in Italy and approximately 100 hectares are dedicated to the conservation of biodiversity with the goal of preserving habitats. These are areas planted with mixtures of plant species that ensure the maximum extension of vegetation and flowering to promote the creation of shelters for both wild fauna and avifauna. Also, the company have all their 589 hectares under organic farming, 60% of them currently certified while the rest, 200h, currently finishing the conversion phase towards organic farming. (FOOD Magazine, 2023)

Figure 11 Farchioni portfolio EVOO. Source: https://farchioni1780.com/olio/

Overall the Extra Virgin Olive Oil (EVOO) brands are placing their bets on offering 100% Italian EVOO, and they are also exploring various avenues to incorporate "sustainability" features into their offerings. This includes enhanced transparency, where brands share the origin of the olives and provide insights into all stages of the supply chain. They are also working on improving packaging by making it more recyclable or utilizing recycled materials. Additionally, these brands are showcasing their social commitments, such as ensuring fair payment to olive farmers, pledging to biodiversity in their olive plantations, and expressing support for "Olivicoltori eroici," which refers to farms cultivating in challenging steep terrain with century-old olive trees, and more.

Figure 12 Farchioni Olivicoltura Eroica EVOO. Source:https://farchioni1780.com/olive-oil-heroic-olive-growing/?lang=en

3. Organic Food trend in Italy:

In the latest edition of SANA 2023 "Salone Internazionale del Biologico e del Naturale" promoted by BolognaFiere, FederBio and AssoBio, it was highlighted the great performance of the Organic food products in Italy ("Biologico" in Italian) in an overall negative economic context that the Italian market is undergoing (FOOD Magazine, 2023). This signals a big opportunity for the Organic products even in adverse context but that in order to continue growing needs to evolve from the "niche" concept, in other words, needs to increase its buyer base.

Even if the current Italian market is shadowed by a context of inflation, energy and climate emergencies, these positive trends shows that the consumers continue to choose organic products. Nomisma, had calculated that in a course of the last 2.5 years, consumers in Italy have lost 6 700 euros of purchasing power per capita, and that this huge drop has influenced the lifestyle of the consumers and also their purchase behavior. The trend of organic products consumption registers a positive sales trend of +7% for domestic consumption (through traditional purchase channels i.e., Large-distribution channels and to be consumed at home) and +18% for out-of-home consumption (i.e., restaurants, mensa, caffes, etc.) making an estimated total of 5,5 Mio Euros the sales for Organic in Italy. Important to mention is the key role of the GDOs, that around 60% of the purchase for Organic product takes place, this channel has increased the sales value for organic of +8%, thanks to the increase of price, but showing a slight decrease in volume sold by -3,3%.

The organic products have a high estimated penetration in Italy (NOMISMA, 2023): The results of the Nomisma consumer survey involving 1,000 Italian food buyers revealed that the consumer base for organic products remained consistent compared to the previous year. Approximately 89% of the population aged 18-65 consciously purchased at least one organic food product in the last year.

According to the results, Organic is the first choice when buying fresh fruits and vegetables, eggs, EVOO, fruit jam and meet; followed by milk, cheeses, meat substitutes, pasta and yogurt.

Among those who choose organic products, the primary consideration is the origin. About 29% prefer products that are 100% Italian organic, while an additional 17% opt for those with a

local/zero-kilometer origin. Furthermore, 11% actively seek products with the DOP/IGP (Protected Designation of Origin/Protected Geographical Indication) label. The brand also plays a crucial role in the decision-making process, with 8% preferring industrial brands and 7% favoring supermarket brands.

The importance of promoting effective information actions towards consumers to strengthen knowledge and awareness of organic values and the guaranteed underlying certification is crucial for the further affirmation of the sector. It is essential to consolidate the distinctive position of organic as an agricultural model capable of reinforcing ecological transition and combating progressive climate change.

Nine out of ten consumers lack sufficient information or would like to know more about the innovations and technologies used in organic farming, the controls applied to organic products, and the contribution of the organic method to sustainability. Italians have clear preferences regarding the information they desire: 55% seek additional details on the distinctiveness of organic compared to conventional products, 54% want more information on the benefits of organic for diet and health, and an equal percentage is interested in greater details about the traceability of organic products.

An additional key aspect to maintain the positioning of organic products in both domestic and international markets is the assurance of the Italian origin of raw materials. Two-thirds of Italians consider it important to find organic food and beverage products with 100% Made in Italy raw materials. Moreover, a significant majority of organic consumers would find it useful for organic products to have a logo certifying the Italian origin of the raw materials. Thus, 75% of Italians would support the introduction of a "Bio Made in Italy" label as it would represent a crucial additional guarantee regarding the origin of purchased organic products.

Kantar, on a recent article published online, also highlights that Sustainability is always more and more important for consumers, and that they are, in fact, a real opportunity for the value creation for brands. (Donati, 2023).

In this report, Kantar's Senior Marketing Executive states that there is a big chance to build brand value because customers are becoming more and more interested in sustainability. It offers a real opportunity for business development and brand building, going beyond just a reputational

boost. Companies need to undergo a thorough change in several operational areas, including as employee engagement, communication, innovation, and brand purpose, in order to successfully integrate sustainability. It is important that this integration not be interpreted as just another layer or as a social or environmental cleansing tactic.

According to Kantar consumer surveys, there is a growing awareness of sustainability: in 2020, the percentage of eco-aware customers raised from 16% to 20%. Of the citizens, 27% believe that environmental issues are important. 58% of the population is made up of millennials and centennials, who say they are willing to pay more for environmentally friendly products and that they are very sensitive to sustainability.

The concept of sustainability is now at the center of brand expansion and development initiatives. The impact of perceived responsibility on business reputation has increased thrice in the last ten years, making it a significant factor. Sustainable business strategies are linked to an estimated $12 trillion in yearly economic potential by 2030.

Chief Impact Officer at Kantar Cristina Colombo emphasizes that sustainability is a big business potential as well as something that's not just about reputation. But integrating sustainability into business models needs rethinking consumer outreach, market strategies, and product offerings.

It is critical to ensure the Italian origin of raw materials in order to preserve and improve brand internal and external positioning. Two-thirds of Italians think it's crucial to be able to find 100% Made in Italy organic food and beverages, and the majority favors the establishment of a "Bio Made in Italy" designation.

Companies should think about how to integrate sustainability into their value chain naturally, avoiding practices that could be interpreted as just social washing or greenwashing, which can seriously damage their reputation. Brands and companies must adopt an integrated and methodical strategy to sustainability in order to successfully navigate the changing consumer and market landscape.

V. Empirical Analysis: Sustainability claims and the Consumer Purchase Behavior: EVOO in Italian supermarkets.

1. Methodology

As a recap, here the reasons why The Organic EVOO was used as the case study for this thesis:

- The great potentiality this product has in a country like Italy. As expressed in sections above this industry benefits a lot from organic farming and processing, according to data the number of farms who are adapting to organic farming exceeds to the current output of organic olive oil, this gap should be further studied and it needs to be determined whether it is influenced by buyer's awareness, the prices, availability, etc.

- Organic olive farming is the 4th most extended organic farming in surface in Italy after Meadows and Pastures, Fodder crops and all Cereals. It is also on the top 10th of organic products purchased and in 2021 had a positive trend vs 2020. Great potentiality not only for side of supplier but also consumers.

- This product is one of the main protagonists of the Mediterranean diet, a culinary concept that recalls healthy lifestyle and ancient traditions. The Italian cuisine has the olive oil as a main player.

- Italy is on the top countries to produce olive oil and the first to consume it: With a per capita consumption of 8 kg (486 thousand tons in 2022/2023), Italy is the world's top consumer and the second-largest exporter with 343 thousand tons valued at 1.5 billion euros (2021), following the undisputed leader, Spain. (Saggio, 2023)

The survey has 15 questions divided in the following sections, and related to the hypothesis that are described in the next sub-chapter.

Section	Section	Related Hipothesis	Description
1	Demographics	-	Basic information of the respondent is requested for statistical purposes: age, sex, region, educational level, and average gross income.
2	Purchase habits	H6,H8,H9,H10	Here respondents are asked questions related to their current purchase habits in the supermarkets, as frequency, the importance they give to certain attributes when choosing EVOO and how much they consume food that claims to be sustainable. The scope of this section is to determine the habits of the respondents when purchasing EVOO in a supermarket.
3a	Concepts	H3	Here respondents are asked what better defines for them "Organic" EVOO, and as possible answers they have the right definition, and two other options containing the most common misconceptions people have when buying Organic products. (Kamara, 2019) The scope of this question is to measure the knowledge of the respondents regarding the Eco-label Organic European logo.

3b	Concepts	H3	Similar question and options as in 3a but in this case if the respondents chose the wrong definitions, a feedback messages opens telling them that their answer is wrong and then a quick definition of organic EVOO appears. The survey also asks them to please continue without changing the answer. The purpose of these alternate questions is to gain a deeper understanding of how respondents' level of knowledge regarding the definition of "Organic" can impact their willingness to pay for a bottle of Organic EVOO
4	Willigness to Pay	H1, H2,H3,H4,H5, H6,H7,	Respondent are requested to assign a price they would be willing to pay for a 1L Classic EVOO and for an Organic EVOO. Then a question regarding the European organic logo is asked. In here the respondents are asked whether the presence of this logo affected how much they are willing to pay for the Organic EVOO.
5	Drivers	H2,H3,H7,H8,H10	Here questions aim to determine the values that drives the respondents to buy

			sustainable food behind according to the VBN theory. (Stern, 2000) Also, a question was made to determine other factors that can influence the respondents 's WIP for sustainable food products such as interest in sustainability topics, openness to try new food and the perceived availability of such products for them.

Table 3 Survey Sections

To evaluate all the hypothesis, an online survey was created. The survey follows an A/B test: respondents are showed a version of the survey randomly:

- "A" version which gives feedback in case their concept of Organic EVOO is not correct and gives them the right definition. (Section 3a of the survey)
- "B" version which does not give any feedback about the Organic EVOO concept whether wrong or right.
- Both versions have 2 available languages to answer: English and Italian.

In this way we can measure how much the knowledge of the Euro-leaf Organic logo affects the willingness to pay of the buyers. For this purpose, the tools used were:

- Google forms: for the survey display and collection of data.
- Allocator.monster: a tool that replicates the A/B testing, it created the randomized delivery of the survey versions. (Fergusson, 2016)

The survey was online for 3 weeks and distributed among different university groups and workplace of the author. 107 complete surveys were received from which 4 were excluded.

2. Hypothesis

For this purpose, an experimental analysis was created in order to analyze and test the following hypothesis.

Name	Hypothesis
H1	Individuals will pay more for an Organic product than for a Classic product with similar characteristics.
H2	Individuals driven by biospheric, and altruistic values are willing to pay more compared to those with egoistic values when purchasing organic products.
H3	The premium price an individual will pay for an Organic product vs Classic is higher when they are driven by biospheric, and altruistic values compared to those driven by egoistic values
H4	The premium price an individual will pay for an Organic product vs Classic is higher when they are informed about the meaning of Organic, regardless of their initial level of knowledge.
H5	The presence of the EU organic logo on the packaging's front has a positive influence on premium price individuals are willing to pay for Organic Extra Virgin Olive Oil (EVOO) compared to a classic one
H6	Individuals that consider sustainability characteristics important or more when choosing EVOO will pay more for an organic product.
H7	Individuals with high interest or knowledge in sustainability tend to pay a higher premium price for an Organic Product.

H8	Individuals with high interest or knowledge in sustainability tend to make more frequent purchases of sustainable products.
H9	Individuals with high interest or knowledge in sustainability place greater importance on sustainability characteristics when choosing Extra Virgin Olive Oil.
H10	Individuals with higher availability of sustainable products, purchases them more often.

Table 4 Hypothesis

3. Results

The survey received 107 total answers:

- 54 from the Feedback (Type A)
- 53 from the Non-Feedback (Type B)

From this total, 4 answers were deleted due to the following reasons:

- The respondents did not consume/purchase EVOO.
- The respondents go to supermarket less often than once a month.

Therefore, a total of 103 final answers were analyzed using the software IBM – SPSS.

3.1 Demographics

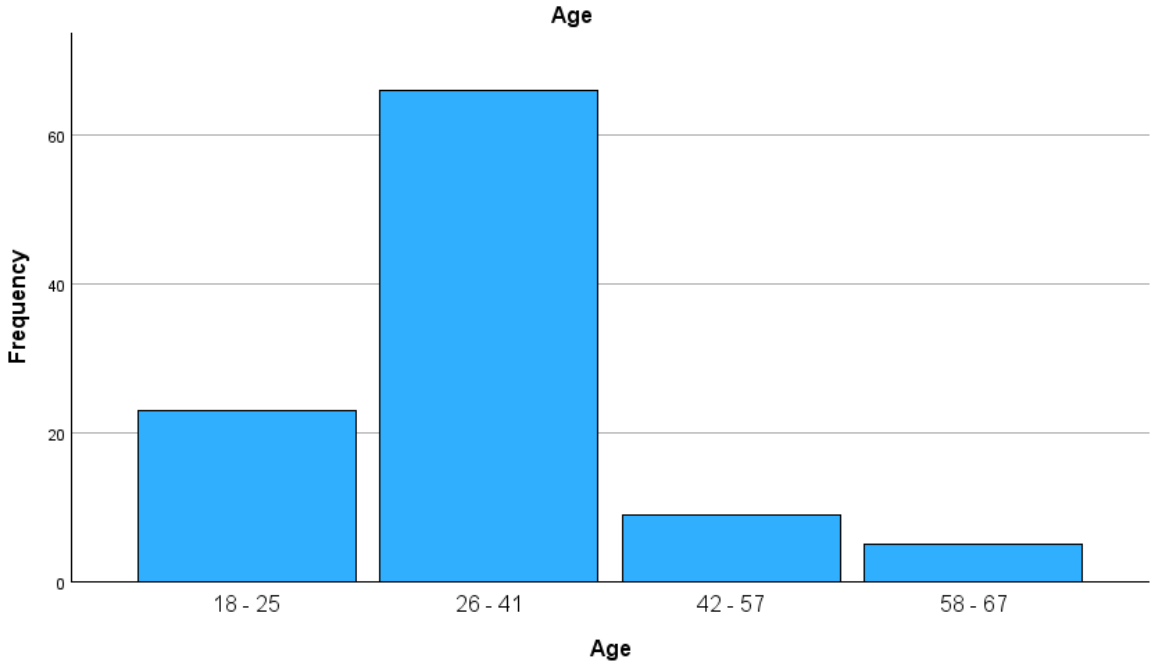
- Age

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18 - 25	23	22,3	22,3	22,3
	26 - 41	66	64,1	64,1	86,4
	42 - 57	9	8,7	8,7	95,1

	58 - 67	5	4,9	4,9	100,0
	Total	103	100,0	100,0	

Table 5 Age



Graph 2Age

The age distribution of the participants was as follows:

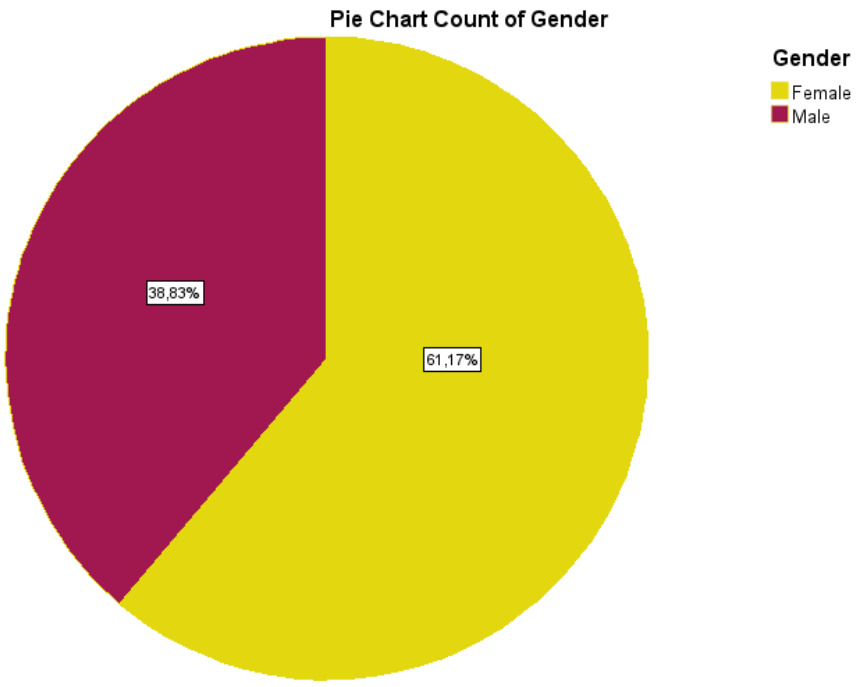
18 - 25: 23 participants, constituting 22.3% of the sample.
26 - 41: 66 participants, making up the majority with 64.1%.
42 - 57: 9 participants, representing 8.7% of the sample.
58 - 67: 5 participants, accounting for 4.9%.
In the table above, we can see the total of 103 responses analyzed, with the cumulative percentages indicating the overall distribution of participants across the specified age ranges (see table above).

- Gender

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	63	61,2	61,2	61,2
	Male	40	38,8	38,8	100,0
	Total	103	100,0	100,0	

Table 6 Gender



Graph 3 Gender

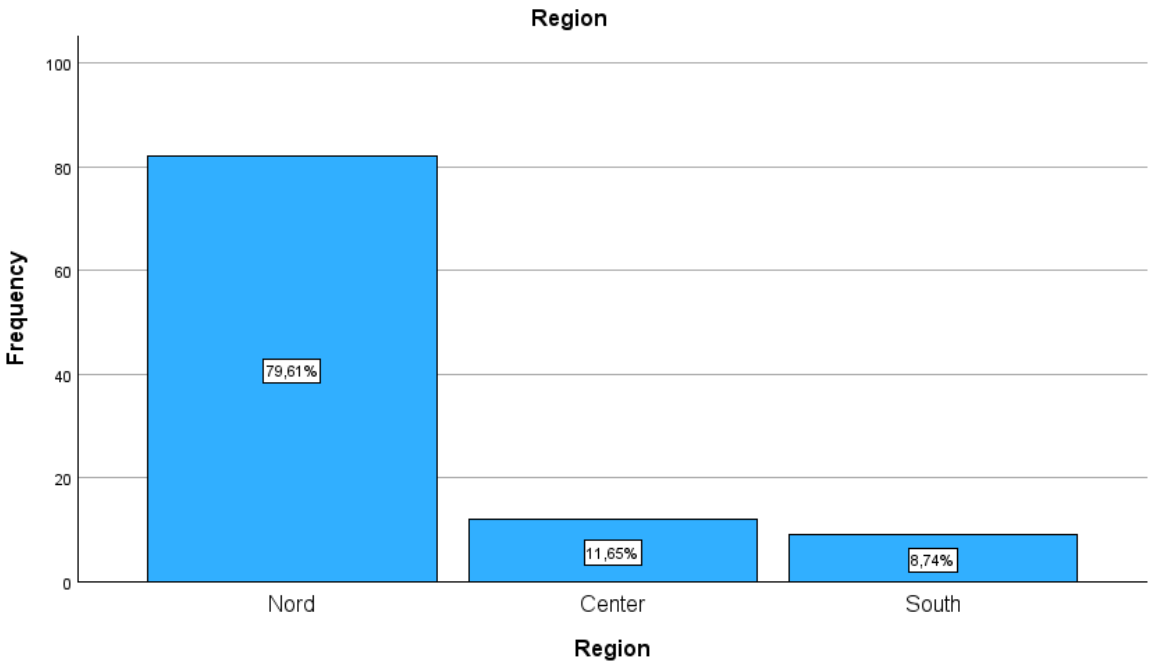
As we can see, most of the respondents were females, representing a 61,17% of all the 103 analyzed answers.

- Region

Region

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Nord	82	79,6	79,6	79,6
	Center	12	11,7	11,7	91,3
	South	9	8,7	8,7	100,0
	Total	103	100,0	100,0	

Table 7 Region



Graph 4 Region

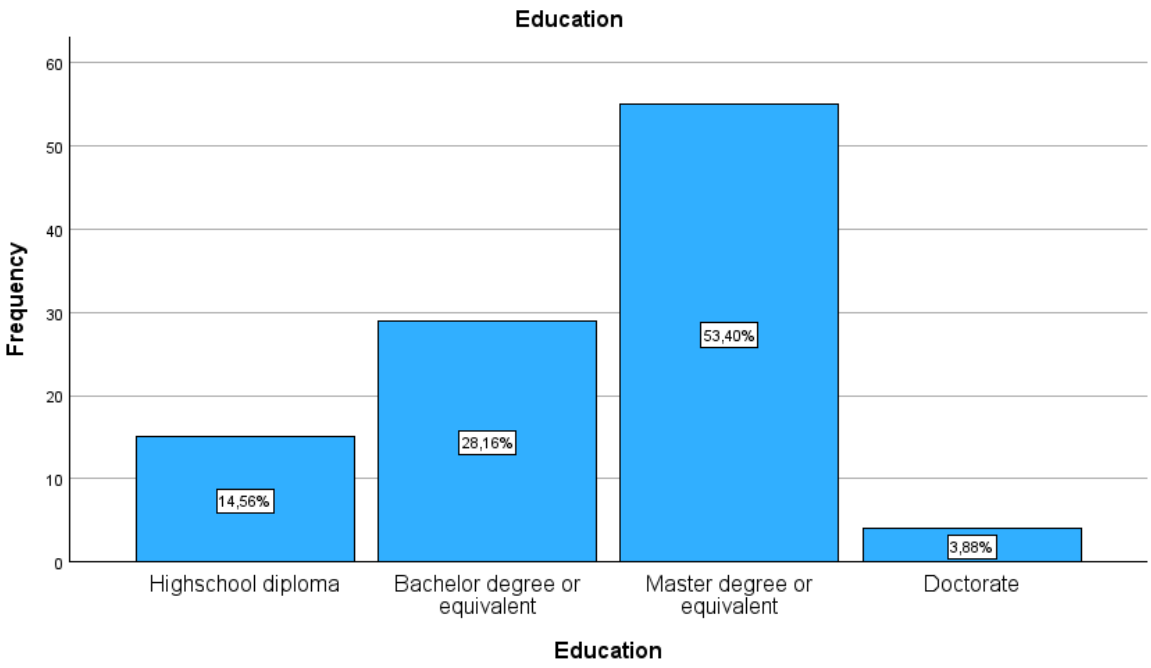
79% of the respondents currently live in North – Italy, which is composed by the four Northwestern regions of Piedmont, Aosta Valley, Liguria and Lombardy in addition to the four Northeastern regions of Trentino-Alto Adige, Veneto, Friuli Venezia Giulia and Emilia-Romagna.

- Education

Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Highschool diploma	15	14,6	14,6	14,6
	Bachelor degree or equivalent	29	28,2	28,2	42,7
	Master degree or equivalent	55	53,4	53,4	96,1
	Doctorate	4	3,9	3,9	100,0
	Total	103	100,0	100,0	

Table 8 Education



Graph 5 Education

More than half of respondents possess a master's degree or equivalent as their latest obtained education degree, followed by those who obtained a Bachelor or equivalent.

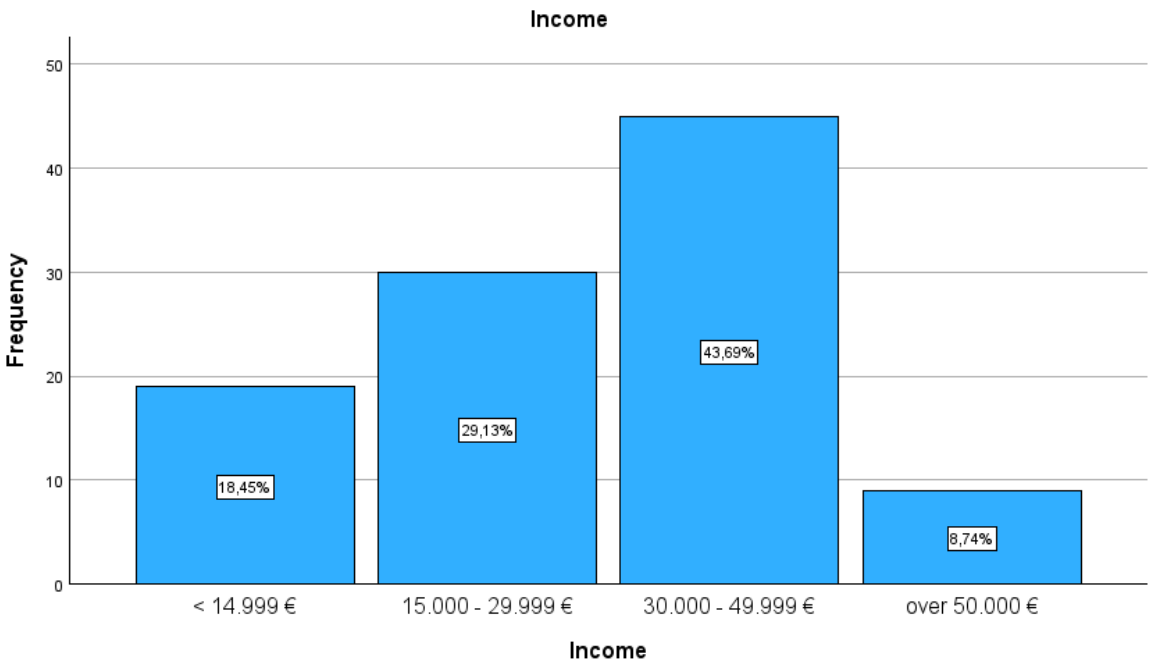
A total of 85% of respondent possess a higher educational level with at least one University degree.

- Income

Income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 14.999 €	19	18,4	18,4	18,4
	15.000 - 29.999 €	30	29,1	29,1	47,6
	30.000 - 49.999 €	45	43,7	43,7	91,3
	over 50.000 €	9	8,7	8,7	100,0
	Total	103	100,0	100,0	

Table 9 Income



Graph 6 Income

The majority of the respondents have an annual gross income in the range of 30k – 49,9k, which is expected as the majority of respondents comes from North-Italy, especially from the region of Trentino – South Tyrol.

According to Italia in Dati website, the average RAL in the North at the beginning of 2021 is 30,800, in the Center 29,300, and in the South and Islands 26,300. More large companies are located in the North and therefore require more profiles with high skills (Italia in dati, 2022).

Figure 13 Gross income distribution in Italy

3.2 Liker scale variables

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Relevance [Brand]	103	1	4	2,22	,779
Relevance [Price]	103	1	4	3,03	,785
Relevance [Country of origin]	103	1	4	3,11	,885
Relevance [Sustainability]	103	1	4	2,65	,893
Relevance [Taste]	103	1	4	3,17	,818
Relevance [Quality]	103	1	4	3,41	,633
Relevance [Nutritional values]	103	1	4	2,48	,958
Valid N (listwise)	103				

Table 10 Relevance of characteristics when purchasing EVOO

- Brand:

The average relevance rating for the brand factor is 2.22, indicating a moderate level of importance. The standard deviation of 0.779 suggests some variability in respondents' opinions about the importance of the brand.

- Price:

Respondents, on average, considered price to be more relevant, with a mean rating of 3.03. The standard deviation of 0.785 indicates some diversity in how individuals value price in their decision-making.

- Country of Origin:

The mean rating for the country of origin is 3.11, suggesting that respondents find this factor moderately relevant. The standard deviation of 0.885 implies a notable range in how individuals perceive the importance of a product's country of origin.

- Sustainability:

Sustainability has an average relevance rating of 2.65, indicating a moderate level of importance among respondents. The standard deviation of 0.893 suggests variability in opinions regarding the relevance of sustainability.

- Taste:

Taste received a relatively high mean rating of 3.17, suggesting it is a significant factor in respondents' decision-making. The standard deviation of 0.818 indicates some diversity in opinions about the importance of taste.

- Quality:

Quality is considered highly relevant, with a mean rating of 3.41. The low standard deviation of 0.633 suggests a more consistent agreement among respondents regarding the importance of quality.

- Nutritional Values:

Respondents, on average, gave nutritional values a relevance rating of 2.48, indicating a moderate level of importance. The higher standard deviation of 0.958 suggests a wider range of opinions on the relevance of nutritional values.

The characteristics with the highest mean are Quality, Taste, and Country of origin suggesting that respondents, on average, find them to be the most relevant when making a purchasing decision for EVOO. Quality has the lowest standard deviation among the top three factors mentioned which means it received less variability in responses, while taste and country of origin have slightly higher standard deviations, suggesting more variability in how respondents rated these characteristics.

From here we can infer that a consumer living in Italy, when purchasing EVOO, he/she places Quality as the most important characteristic in average, this is an important message for the companies and brands that consumer of today is being more attentive to all information cues that is related to Quality for the EVOO, for example nowadays many brand promise high control and quality by using QR codes and other traceability tools to allow consumers to check all the value chain their EVOO bottle has.

As mentioned in the chapter before, Origin seems to be a relevant trend in the EVOO industry in Italy, with more and more consumers demanding Italian EVOO possibly due to the fact that inflation that has made the "European" EVOO more expensive and therefore the Italian EVOO more attractive. Same trend can be seen in the Organic market with more consumers demanding Italian organic products and also the creation of a "Bio made in Italy" designation. (Donati, 2023)

Important to mention, following the consumer trends, people are demanding and expecting sustainable initiative from their favorite brands, but taste (part of the "expected enjoyment") continues to be the king characteristics for consumers, and these results confirm it. Consumers will be willing to consume sustainable food as long as the "Taste" characteristic is either enhance or maintain vs conventional. Consumers are not willing to give up taste for any other characteristic overall. This should suggest Brands, to also emphasize taste characteristics on their sustainable food products in order to further attract the modern consumers. More studies should be carried out in order to test whether the influence of taste in "green products" enhances or jeopardize the purchase behavior. Some studies have started to investigate this correlation based

on Schwartz value theory and using Stern nomenclature but so far there has not been found significant correlation between values and their influence in the purchase of organic wine (Rahman & Reynolds, 2017).

- Drivers

Descriptive Statistics

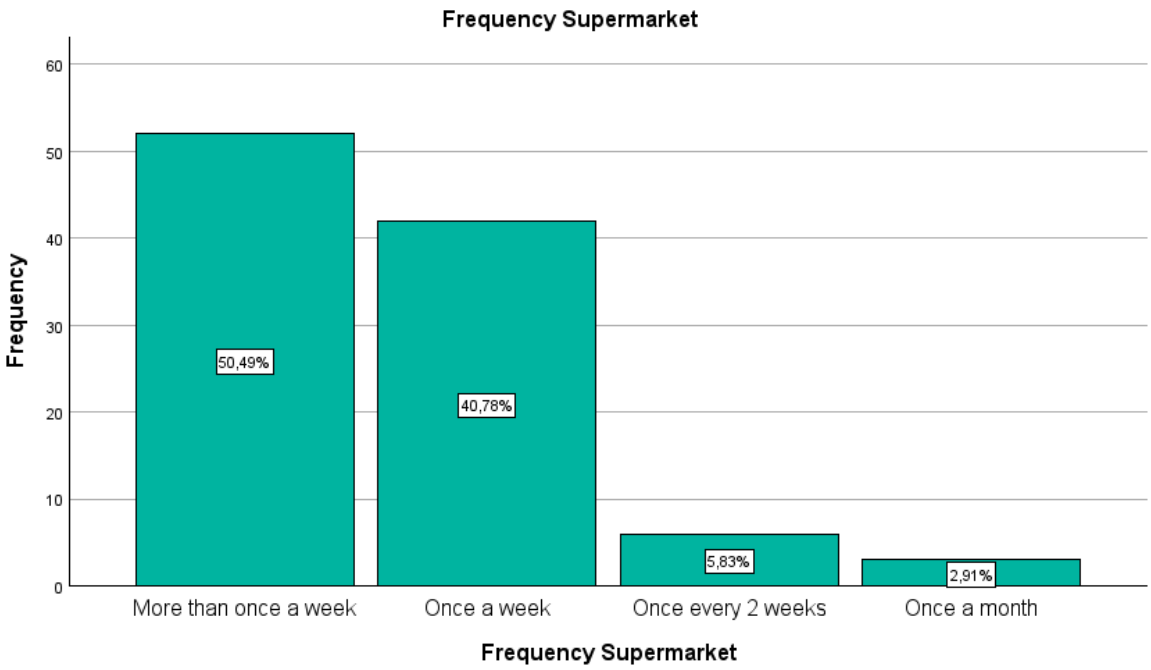
	N	Minimum	Maximum	Mean	Std. Deviation
Drivers [I try to stay informed regarding sustainability issues]	103	1	5	3,51	,979
Drivers [It is easy to find sustainable food products when I go to my supermarket]	103	1	5	3,34	1,044
Drivers [I like to try new food products.]	103	2	5	4,02	,840
Valid N (listwise)	103				

Table 11 Descriptive Statistics - Drivers

For the analysis of other factors that can influence the purchase behavior, on average respondents express a moderate level of trying to stay informed about sustainability issues (Mean = 3.51), finding it somewhat easy to locate sustainable food products in supermarkets (Mean = 3.34), and showing a high inclination to try new food products (Mean = 4.02). The standard deviations indicate variability in responses across these drivers.

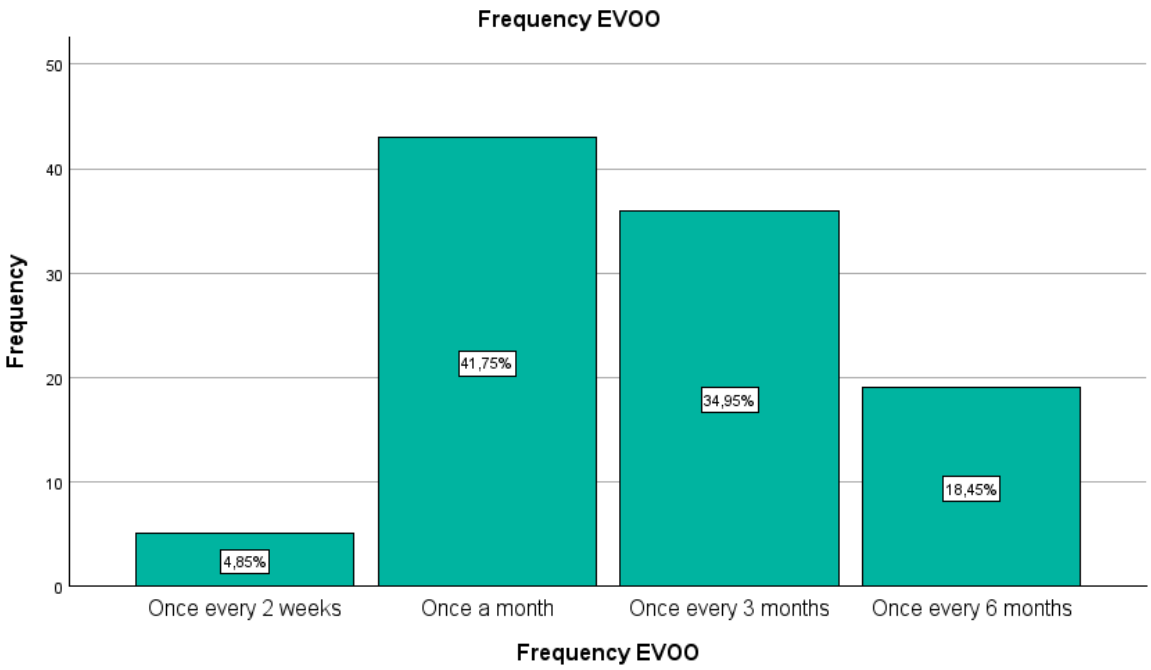
From here we can infer that on average the respondents are interested in or have knowledge about sustainability issues, on average can easily sustainable products in their local supermarket, therefore have access to this kind of products, and are especially keen to try and explore new food products.

3.3 Categorical variables – Frequencies



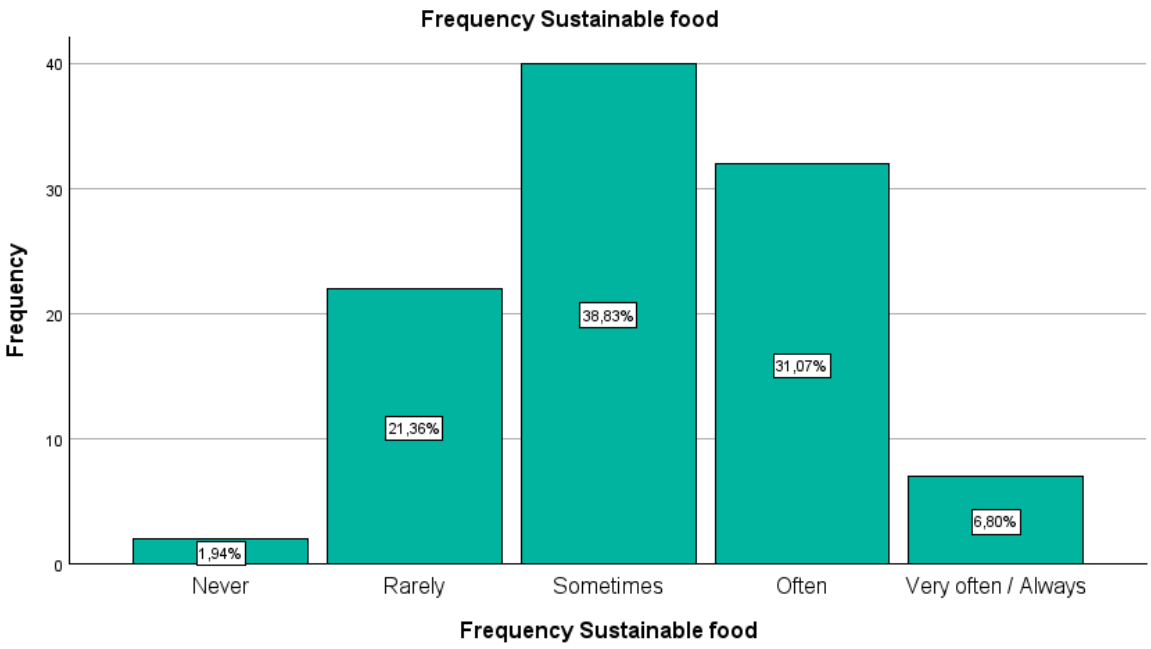
Graph 7 Frequency of purchase in Supermarket

The majority of respondents visit the supermarket frequently, with more than half going more than once a week, and a significant portion going once a week. Only a small percentage visit less frequently. Therefore, at least 90% of the respondents goes to supermarket at least once a week, and based on the demography of the respondents, we can assume that they are also the responsible for purchasing products in the supermarkets.



Graph 8 Frequency of purchase EVOO

The frequency of purchasing Extra Virgin Olive Oil (EVOO) varies, with the majority buying it once a month. A significant portion buys it less often, either every three months, or every six months. More than 80% of responds purchases EVOO at least once every 3 months. Hence, we can infer that the big majority of the consumers are familiar with EVOO, its characteristics and prices at least from the last 3 months. This is important considering the rapid increase in prices seen in the shelves for EVOO in the last months, and the increasing relevance of 100% Italian EVOO in this context.



Graph 9 Frequency of purchase of Sustainable food

The responses indicate a range of frequencies in the purchasing sustainable food. A notable portion of respondents sometimes or often buy sustainable food, while a smaller percentage rarely or never do. We can infer from this that at least 75% of respondents are familiar with sustainable food and therefore the claims, certificates, or other information cues that the food industry in Italy uses to transmit the sustainable characteristics of its products.

3.4 Hypothesis testing

- **H1: Individuals will pay more for an Organic product than for a Classic product with similar characteristics.**

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	WIP Classic EVOO	6,8781	103	2,87996	,28377
	WIP Organic EVOO	9,0831	103	4,41139	,43467

Paired Samples Correlations

		N	Correlation	Significance One-Sided p	Significance Two-Sided p
Pair 1	WIP Classic EVOO & WIP Organic EVOO	103	,862	<,001	<,001

Paired Samples Test

		Paired Differences					t	df	Significance One-Sided p	Significance Two-Sided p
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	95% Confidence Interval of the Difference Upper				
Pair 1	WIP Classic EVOO - WIP Organic EVOO	-2,20505	2,41821	,23827	-2,67766	-1,73243	-9,254	102	<,001	<,001

Paired Samples Effect Sizes

			Standardizer[a]	Point Estimate	95% Confidence Interval Lower	95% Confidence Interval Upper
Pair 1	WIP Classic EVOO - WIP Organic EVOO	Cohen's d	2,41821	-,912	-1,140	-,680
		Hedges' correction	2,43618	-,905	-1,132	-,675

a. The denominator used in estimating the effect sizes.
Cohen's d uses the sample standard deviation of the mean difference.
Hedges' correction uses the sample standard deviation of the mean difference, plus a correction factor.

Paired Samples Statistics (N: 103)

- Mean (WTP Classic EVOO): 6.8781; Std. Deviation (WIP Classic EVOO): 2.87996
- Mean (WTP Organic EVOO): 9.0831; Std. Deviation (WIP Organic EVOO): 4.41139
- Std. Error Mean (WIP Classic EVOO): 0.28377; Std. Error Mean (WIP Organic EVOO): 0.43467

Paired Samples Correlations:

- Correlation (WIP Classic EVOO & WIP Organic EVOO): 0.862
- Significance (Two-Sided p): < 0.001

Paired Samples Test:

- Paired Differences Mean: -2.20505; Std. Deviation of Differences: 2.41821; Std. Error Mean of Differences: 0.23827
- 95% Confidence Interval of the Difference: (-2.67766, -1.73243)
- t(df): -9.254 (102)
- Significance (Two-Sided p): < 0.001

Paired Samples Effect Sizes

- Cohen's d: -0.912 ; 95% CI: (-1.140, -0.680)
- Hedges' correction: -0.905; 95% CI: (-1.132, -0.675)

Here a Paired Sample t-test was applied as all respondents were asked first their WTP (Willingness to Pay) for Classic EVOO and then for Organic EVOO with the same characteristics in terms of packaging, claims "Cold pressed", and origin "100%Italian".

The paired samples t-test revealed a significant difference in the willingness to pay for Classic Extra Virgin Olive Oil (EVOO) compared to Organic EVOO ($t(102) = -9.254$, $p < 0.001$). Participants, on average, were willing to pay significantly less for Classic EVOO ($M = 6.8781$, $SD = 2.87996$) compared to Organic EVOO ($M = 9.0831$, $SD = 4.41139$). The effect sizes, Cohen's $d = -0.912$ and Hedges' correction $= -0.905$, indicate a moderate to large practical significance, suggesting that the observed difference is not only statistically significant but also substantial in magnitude.

The results of the paired samples t-test provide robust evidence in support of Hypothesis 3, suggesting that participants are willing to pay more for Organic Extra Virgin Olive Oil compared to Classic Extra Virgin Olive Oil. The high correlation between the two conditions indicates a consistent pattern among participants. The effect sizes further emphasize the practical significance of the observed difference, emphasizing that the willingness to pay more for Organic EVOO is not merely a statistical artifact but holds substantial real-world importance.

These findings align with the notion that consumers accept and gives a premium on organic products vs its classical counterparts.

- **H2: Individuals driven by biospheric, and altruistic values are willing to pay more compared to those with egoistic values when purchasing organic products.**

Group Statistics

	ValuesPairing	N	Mean	Std. Deviation	Std. Error Mean
WIP Organic EVOO	Biospheric & Altruistic	88	9,3589	4,58500	,48876
	Egoistic	15	7,4653	2,80398	,72398

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
WIP Organic EVOO	Equal variances assumed	,295	,588	1,547	101	,062	,125	1,89353	1,22394	-,53444	4,32150
	Equal variances not assumed			2,168	28,710	,019	,039	1,89353	,87352	,10619	3,68087

Independent Samples Effect Sizes

		Standardizer[a]	Point Estimate	95% Confidence Interval	
				Lower	Upper
WIP Organic EVOO	Cohen's d	4,38157	,432	-,120	,982
	Hedges' correction	4,41444	,429	-,119	,975
	Glass's delta	2,80398	,675	,064	1,266

a. The denominator used in estimating the effect sizes.
Cohen's d uses the pooled standard deviation.
Hedges' correction uses the pooled standard deviation, plus a correction factor.
Glass's delta uses the sample standard deviation of the control (i.e., the second) group.

The respondents were divided in two groups based on the ranking they provided on the last question of the survey which aim to identify the values behind their sustainable purchase behavior. They were grouped in "Egoistic" for those respondents that ranked as 1rst driver "They are healthier than conventional" among the three possible answers; and in "Biospheric & Altruistic" for those respondents that ranked in 1st place "The help to preserve the environment" or "They help to improve our society".

Therefore, an independent samples t-test was conducted to examine the difference in the amount participants are willing to pay for organic Extra Virgin Olive Oil (EVOO) between those with biospheric & altruistic values and those with egoistic values. Levene's test for equality of variances indicated that the assumption of homogeneity of variances was met, $F(1, 101) = 0.295$, $p = 0.588$.

The t-test for equality of means revealed a significant difference in the amount participants are willing to pay between the Biospheric & Altruistic group ($M = 1.89$, $SD = 4{,}58$) and the Egoistic group ($M = 0.06$, $SD = 2{,}8$) $t(101) = 1.547$, $p = 0.062$. When assuming equal variances, the mean difference was 1.89 ($SE = 1.22$), and the 95% confidence interval ranged from -0.53 to 4.32. When variances were not assumed to be equal, the t-value became 2.168, and the significance level was 0.039. To provide a measure of the practical significance of this difference, effect size estimates were calculated. Cohen's d ($d = 4.38$), Hedges' correction (4.41), and Glass's delta (2.80) all indicated large effect sizes. The confidence intervals for these effect sizes further supported the substantial difference, ranging from -0.12 to 0.98 for Cohen's d, -0.12 to 0.98 for Hedges' correction, and 0.06 to 1.27 for Glass's delta.

These findings suggest a trend in participants with biospheric & altruistic values that are willing to pay more for organic EVOO compared to those with egoistic values. However, the difference did not reach conventional levels of statistical significance ($p < 0.05$), although it approached significance ($p = 0.062$).

- **H3: The premium price an individual will pay for an Organic product vs Classic is higher when they are driven by biospheric, and altruistic values compared to those driven by egoistic values.**

In order to test this hypothesis, I created a new variable, "Prime" that is the difference between how much the respondent is willing to pay for an organic EVOO vs how much she/he is willing to pay for a classic one with similar characteristics.

Group Statistics

ValuesPairing	N	Mean	Std. Deviation	Std. Error Mean

Prime Organic - Classic	Biospheric & Altruistic	88	2,4447	2,46334	,26259
	Egoistic	15	,7993	1,55509	,40152

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
Prime Organic - Classic	Equal variances assumed	,960	,330	2,497	101	,007	,014	1,64533	,65880	,33845	2,95221
	Equal variances not assumed			3,429	27,721	<,001	,002	1,64533	,47977	,66213	2,62853

Independent Samples Effect Sizes

			95% Confidence Interval	
		Standardizer[a]	Point Estimate	Lower	Upper
Prime Organic - Classic	Cohen's d	2,35842	,698	,140	1,252
	Hedges' correction	2,37612	,692	,139	1,243
	Glass's delta	1,55509	1,058	,374	1,717

a. The denominator used in estimating the effect sizes.
Cohen's d uses the pooled standard deviation.
Hedges' correction uses the pooled standard deviation, plus a correction factor.
Glass's delta uses the sample standard deviation of the control (i.e., the second) group.

The mean for Prime for respondents with biospheric and altruistic values (M = 2.44, SD = 2.46) is higher than for those with egoistic values (M = 0.80, SD = 1.56).

As the respondents were divided in two categories “Egoistic” and “Biospheric & Altruistic” as before, an independent samples t-test was conducted to compare the "Prime" between these two groups. The t-test revealed a significant difference in the "Prime" between the two groups (t(101) = 2.497, p = 0.014, two-tailed). The mean "Prime" for respondents with biospheric and altruistic values (M = 2.44) was significantly higher than for those with egoistic values (M = 0.80).

The effect size, Cohen's d, indicates a large effect (d = 2.36), suggesting a difference in the "Prime" between the two groups. Hedges' correction and Glass's delta further support the presence of a substantial effect.

The results provide evidence that individuals with biospheric and altruistic values exhibit a significantly higher willingness to pay a premium ("Prime") for Organic EVOO

compared to those with egoistic values. This result is aligned with the VBN theory by Stern (Stern, 2000) and supported by many researchers.

- **H4: The premium price an individual will pay for an Organic product vs Classic is higher when they are informed about the meaning of Organic, regardless of their initial level of knowledge.**

In order to test this hypothesis, I focused on the respondents who made a mistake when selecting the "EU-Leaf Organic Logo" concept. As the survey was A/B test, some of them receive feedback that the concept selected was wrong and the survey provided them with the right concept. Immediately after they were asked for their willingness to pay for both classic and organic EVOO.

Therefore, the two groups I have were:

- Feeback Received: Those who made a mistake and received feedback indicating the right concept of the "EU Organic logo". N= 23.
- No Feedback Received: Those who made a mistake but didn't receive any alert or clarification that their selected answer about the definition of "EU Organic logo" was wrong. N=14.

Here also the variable to be measure was "Prime" which is the difference between the WTP price for Organic – WTP price for conventional EVOO.

Group Statistics

	Feedback	N	Mean	Std. Deviation	Std. Error Mean
Prime Organic - Classic	Feedback Received	23	2,1522	1,18163	,24639
	No Feedback Received	14	1,9857	1,31667	,35190

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
Prime Organic - Classic	Equal variances assumed	,006	,938	,398	35	,346	,693	,16646	,41814	-,68240	1,01532
	Equal variances not assumed			,387	25,280	,351	,702	,16646	,42958	-,71777	1,05069

Independent Samples Effect Sizes

		Standardizer[a]	Point Estimate	95% Confidence Interval Lower	95% Confidence Interval Upper
Prime Organic - Classic	Cohen's d	1,23351	,135	-,531	,799
	Hedges' correction	1,26076	,132	-,520	,782
	Glass's delta	1,31667	,126	-,542	,790

a. The denominator used in estimating the effect sizes.
Cohen's d uses the pooled standard deviation.
Hedges' correction uses the pooled standard deviation, plus a correction factor.
Glass's delta uses the sample standard deviation of the control (i.e., the second) group.

Feedback Received (n = 23):

- Mean Prime Organic - Classic = 2.1522
- Standard Deviation = 1.18163
- Standard Error Mean = 0.24639

No Feedback Received (n = 14):

- Mean Prime Organic - Classic = 1.9857
- Standard Deviation = 1.31667
- Standard Error Mean = 0.35190

There was no significant difference in the "Prime" (between respondents who received feedback and those who did not ($t(35) = 0.398$, $p = 0.702$).

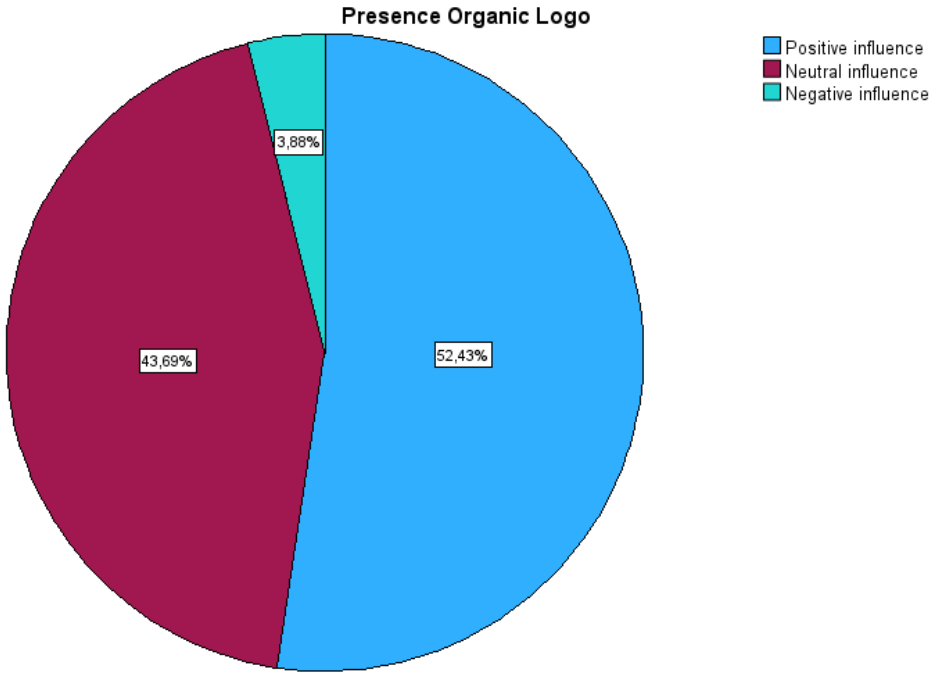
The effect size estimates (Cohen's d, Hedges' correction, Glass's delta) suggest a moderate effect, indicating that the observed difference, while not statistically significant, may still have practical importance.

Therefore, the results suggest that, despite not reaching statistical significance, there is a trend toward a higher "Prime" for respondents who received feedback, indicating a potential influence of immediate knowledge on their willingness to pay a premium for organic EVOO. However, further research with a larger sample size may be needed to confirm these tendencies.

- **H5: The presence of the EU organic logo on the packaging's front has a positive influence on premium price individuals are willing to pay for Organic Extra Virgin Olive Oil (EVOO) compared to a classic one.**

Presence Organic Logo

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Positive influence	54	52,4	52,4	52,4
	Neutral influence	45	43,7	43,7	96,1
	Negative influence	4	3,9	3,9	100,0
	Total	103	100,0	100,0	



Based on descriptive statistics, when respondents were asked how much the presence of the European Organic Logo (Euro-leaf) influenced their evaluation of an Organic EVOO, more than half mentioned that its presence made them value more the product. As mentioned before, people tend to trust when in the product is present also a 3rd party organization that certifies the claim.

Important to notice also, that there is a huge part of the respondent who believe that the presence of the euro-leaf didn't affect at all their willingness to pay for the Organic and that just the claim "Organic"/"Biologico" on the packaging front could have been enough to determine a willingness to pay.

Figure 14 WTP EVOO Classic vs Organic in Survey. Images, brand, and logo are owned elaboration.

Further studies need to analyze this result, for example asking participants to stablish their willingness to pay for a bottle of Organic EVOO and Organic EVOO certified.

- **H6: Individuals that consider sustainability characteristics important or more when choosing EVOO will pay more for an organic product.**

Group Statistics

	Relevance [Sustainability]	N	Mean	Std. Deviation	Std. Error Mean
WIP Classic EVOO	>= 4	17	7,5588	3,88861	,94313
	< 4	86	6,7435	2,64493	,28521
WIP Organic EVOO	>= 4	17	11,1176	8,13467	1,97295
	< 4	86	8,6809	3,14720	,33937

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
WIP Classic EVOO	Equal variances assumed	1,021	,315	1,067	101	,144	,288	,81534	,76390	-,70003	2,33070
	Equal variances not assumed			,827	19,030	,209	,418	,81534	,98531	-1,24672	2,87739
WIP Organic EVOO	Equal variances assumed	6,909	,010	2,116	101	,018	,037	2,43672	1,15143	,15258	4,72085
	Equal variances not assumed			1,217	16,958	,120	,240	2,43672	2,00192	-1,78776	6,66120

Independent Samples Effect Sizes

		Standardizer[a]	Point Estimate	95% Confidence Interval Lower	95% Confidence Interval Upper
WIP Classic EVOO	Cohen's d	2,87800	,283	-,239	,804
	Hedges' correction	2,89959	,281	-,237	,798
	Glass's delta	2,64493	,308	-,215	,830
WIP Organic EVOO	Cohen's d	4,33804	,562	,034	1,086
	Hedges' correction	4,37059	,558	,034	1,078
	Glass's delta	3,14720	,774	,239	1,305

a. The denominator used in estimating the effect sizes.
Cohen's d uses the pooled standard deviation.
Hedges' correction uses the pooled standard deviation, plus a correction factor.
Glass's delta uses the sample standard deviation of the control (i.e., the second) group.

Here respondents were grouped based on the importance they gave to Sustainability characteristics when choosing EVOO. The question presented a Liker-scale going 1 to 5 (5 being "Very Important").

The independent samples t-tests were conducted to examine whether there is a significant difference in willingness to pay (WIP) for Classic and Organic Extra Virgin Olive Oil (EVOO) based on participants' consideration of sustainability characteristics when choosing food products.

For WIP Classic EVOO, the results showed no significant difference in WIP between those who considered sustainability (Mean = 7.5588) and those who did not (Mean = 6.7435), regardless of the assumption about equal variances.

For WIP Organic EVOO, the results indicated a significant difference in WIP between those who considered sustainability (Mean = 11.1176) and those who did not (Mean = 8.6809). The effect sizes (Cohen's d, Hedges' correction, Glass's delta) suggest a substantial impact, emphasizing the practical significance of the observed difference.

Focusing on the hypothesis, respondents who considered sustainability characteristics when choosing food products demonstrated a significantly higher WIP for Organic EVOO compared to those who did not, supporting Hypothesis 6.

- **H7: Individuals with high interest or knowledge in sustainability tend to pay a higher premium price for an Organic Product.**

Group Statistics

	Drivers [I try to stay informed regarding sustainability issues]	N	Mean	Std. Deviation	Std. Error Mean
Prime Organic - Classic	>= 4	50	2,2864	3,19026	,45117
	< 4	53	2,1283	1,36662	,18772

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance				95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
Prime Organic - Classic	Equal variances assumed	3,548	,062	,330	101	,371	,742	,15810	,47885	-,79180	1,10800
	Equal variances not assumed			,324	65,582	,374	,747	,15810	,48866	-,81767	1,13387

Independent Samples Effect Sizes

		Standardizer[a]	Point Estimate	95% Confidence Interval Lower	Upper
Prime Organic - Classic	Cohen's d	2,42884	,065	-,322	,451
	Hedges' correction	2,44707	,065	-,319	,448
	Glass's delta	1,36662	,116	-,272	,502

a. The denominator used in estimating the effect sizes.
Cohen's d uses the pooled standard deviation.
Hedges' correction uses the pooled standard deviation, plus a correction factor.
Glass's delta uses the sample standard deviation of the control (i.e., the second) group.

For testing this hypothesis, respondents were grouped in two categories based on the relevance they placed on the driver "I try to stay informed regarding sustainability issues" which is a question presented in a Liker-scale form from 1 to 5, being 5 "I strongly agree". The groups were those who placed 4 or more, and those who selected 3 or lower with the statement. For the variable, it was used "Premium".

The t-test was conducted to examine the difference in the willingness to pay premium (Prime) for organic extra virgin olive oil (EVOO) compared to classic EVOO between respondents with high and low self-reported interest in staying informed about sustainability issues.

The results revealed a statistically significant difference in Prime between respondents with high interest ($M = 2.29$, $SD = 3.19$) and low interest ($M = 2.13$, $SD = 1.37$) in staying informed about sustainability issues, $t(101) = 0.33$, $p = 0.747$. The effect size, as indicated by Cohen's d ($d = 0.07$, 95% CI [-0.32, 0.45]), was small, suggesting a minimal practical significance.

These findings suggest that, although a statistical difference was observed, the magnitude of the difference is small. Further exploration and consideration of additional factors may be necessary to better understand the complex relationship between respondents' interest in sustainability issues and the premium price they are willing to pay for organic EVOO.

- **H8: Individuals with high interest or knowledge in sustainability tend to make more frequent purchases of sustainable products.**

Correlations

		Frequency Sustainable food	Drivers [I try to stay informed regarding sustainability issues]
Frequency Sustainable food	Pearson Correlation	1	,640**
	Sig. (2-tailed)		<,001
	N	103	103
Drivers [I try to stay informed regarding sustainability issues]	Pearson Correlation	,640**	1
	Sig. (2-tailed)	<,001	
	N	103	103

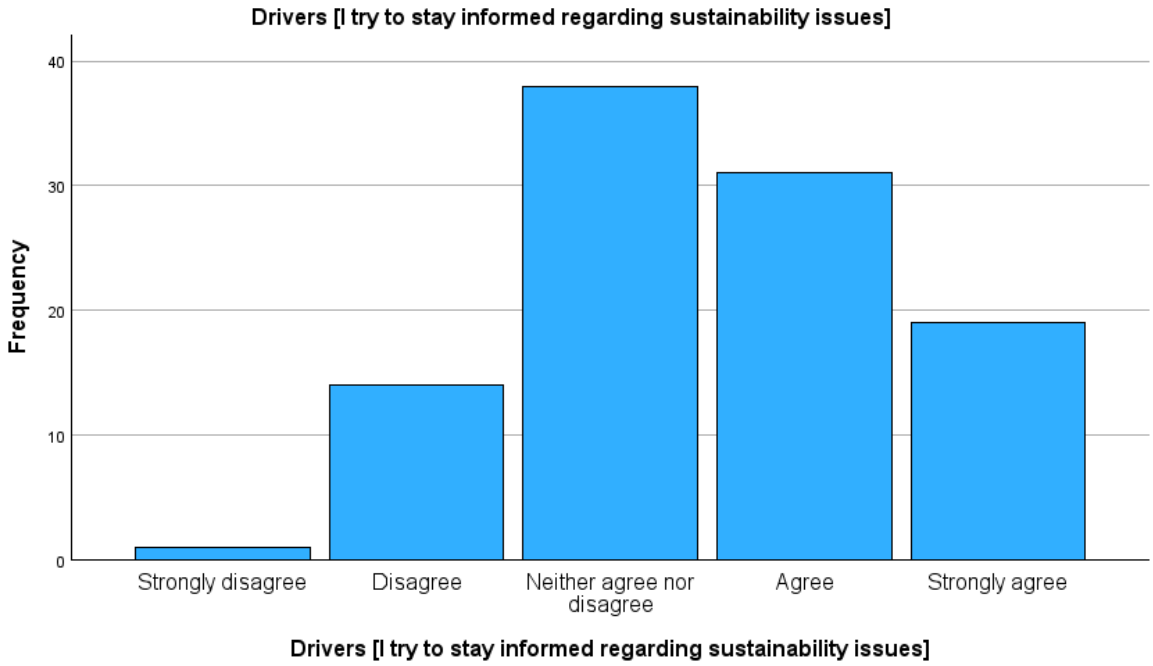
**. Correlation is significant at the 0.01 level (2-tailed).

The Pearson correlation coefficient is 0.640, indicating a moderate to strong positive correlation. The significance level is less than 0.001, which is highly significant. This suggests that the observed correlation is unlikely to have occurred by chance.

The positive correlation of 0.640 suggests that as the frequency of purchasing sustainable food increases, there is a corresponding increase in the reported drivers related to staying informed about sustainability issues. In other words, people who are more interested in sustainability issues (as indicated by their drivers to stay informed) tend to purchase sustainable food more frequently.

This supports Hypothesis 8, which posited that people with higher sustainability interest/knowledge buy sustainable products more often.

- **H9: Individuals with high interest or knowledge in sustainability place greater importance on sustainability characteristics when choosing Extra Virgin Olive Oil.**



Drivers [I try to stay informed regarding sustainability issues]

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	1	1,0	1,0	1,0
	Disagree	14	13,6	13,6	14,6
	Neither agree nor disagree	38	36,9	36,9	51,5
	Agree	31	30,1	30,1	81,6
	Strongly agree	19	18,4	18,4	100,0
	Total	103	100,0	100,0	

Respondent's levels of agreement with the statement "I try to stay informed regarding sustainability issues" varied, with 30.1% agreeing, 36.9% neither agreeing nor disagreeing, 13.6% disagreeing, and 18.4% strongly agreeing.

Correlations

		Relevance [Sustainability]	Drivers [I try to stay informed regarding sustainability issues]
Relevance [Sustainability]	Pearson Correlation	1	,342**
	Sig. (2-tailed)		<,001
	N	103	103
Drivers [I try to stay informed regarding sustainability issues]	Pearson Correlation	,342**	1
	Sig. (2-tailed)	<,001	
	N	103	103

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

A Pearson correlation was carried out in order to examine the relationship between the frequency of trying to stay informed regarding sustainability issues and the relevance participants placed on sustainability when choosing Extra Virgin Olive Oil. The correlation was significant at the 0.01 level, indicating a moderate positive relationship (r = 0.342). This suggests that people who try to stay informed about sustainability issues tend to place a higher importance on sustainability when choosing Extra Virgin Olive Oil.

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Drivers [I try to stay informed regarding sustainability issues][b]	.	Enter

a. Dependent Variable: Relevance [Sustainability]

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,342[a]	,117	,108	,844

a. Predictors: (Constant), Drivers [I try to stay informed regarding sustainability issues]

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9,534	1	9,534	13,396	<,001[b]
	Residual	71,884	101	,712		
	Total	81,417	102			

a. Dependent Variable: Relevance [Sustainability]

b. Predictors: (Constant), Drivers [I try to stay informed regarding sustainability issues]

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,553	,311		4,989	<,001
	Drivers [I try to stay informed regarding sustainability issues]	,312	,085	,342	3,660	<,001

a. Dependent Variable: Relevance [Sustainability]

A linear regression was performed to assess the predictive power of the frequency of trying to stay informed regarding sustainability issues on the relevance participants placed on sustainability when choosing Extra Virgin Olive Oil. The model was statistically significant, $F(1, 101) = 13.396$, $p < 0.001$, explaining 11.7% of the variance in sustainability relevance. The regression coefficient for the frequency of staying informed ($\beta = 0.342$, $p < 0.001$) indicates a positive relationship. This means that for each unit increase in the frequency of trying to stay informed, the relevance placed on sustainability increases by 0.342 units.

These results suggest that people who express a higher frequency of trying to stay informed regarding sustainability issues are more likely to perceive sustainability as relevant when choosing Extra Virgin Olive Oil in the supermarket's shelves. This finding highlights the potential influence of information-seeking behavior on the importance assigned to sustainability characteristics in consumer choices.

- **H10: Individuals with higher availability of sustainable products, purchases them more often.**

Correlations

		Drivers [It is easy to find sustainable food products when I go to my supermarket]	Frequency Sustainable food
Drivers [It is easy to find sustainable food products when I go to my supermarket]	Pearson Correlation	1	,237*
	Sig. (2-tailed)		,016
	N	103	103
Frequency Sustainable food	Pearson Correlation	,237*	1
	Sig. (2-tailed)	,016	
	N	103	103

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

The Pearson correlation coefficient is 0.237, indicating a relatively weak positive correlation. The significance level is 0.016, which is less than 0.05. This suggests that the observed correlation is statistically significant at the 0.05 level.

The positive correlation of 0.237 indicates that as the frequency of purchasing sustainable food increases, there is a corresponding increase in the perception that it is easy to find sustainable food products in the supermarket. In other words, people who perceived that there is higher availability of sustainable food in their supermarket, they would tend to purchase more often those products, supporting Hypothesis 10.

This result calls for the important role of the GDO participants (retailers, supermarkets, hypermarkets, discounters) as they are the most used channel for consumers in Italy to purchase of EVOO as stated on the previous chapters. For years, the producers of

EVOO has requested GDOs to help them to re-shape the concept of EVOO in the mind of consumers, to take it from a "Commodity" or "Condiment" (due to the intense promotion index that GDOs applies to this category) to its proper values as "Food", and in this way, help the companies to keep adding value to the product. (GDOWeek, 2023).

Important also is the position, the GDOs are taking in regards of sustainability issues, because their own interest in this topic can heavily influence the amount of space on shelves, and advertising they can give to sustainable products. In the recent year, we can see an increase amount of Private Label products (products using the retailer brand) going towards the direction of sustainability. For future, more studies about the role of GDOs in Italy for sustainable food should be carried out, evaluating the level of trust consumers as well may have for the private label products with sustainable claims of these GDOs.

Figure 15 Conad Italy - Private Label Bio Line

Figure 16 Esselunga Italy - Private Label Bio Line

To summarize the results of the hypothesis:

Name	Hypothesis	Result
H1	Individuals will pay more for an Organic product than for a Classic product with similar characteristics.	Accepted
H2	Individuals driven by biospheric, and altruistic values are willing to pay more compared to those with egoistic values when purchasing organic products.	Not accepted
H3	The premium price an individual will pay for an Organic product vs Classic is higher when they are driven by biospheric, and altruistic values compared to those driven by egoistic values	Accepted
H4	The premium price an individual will pay for an Organic product vs Classic is higher when they are informed about the meaning of Organic, regardless of their initial level of knowledge.	Not accepted
H5	The presence of the EU organic logo on the packaging's front has a positive influence on premium price individuals are willing to pay for Organic Extra Virgin Olive Oil (EVOO) compared to a classic one	Not accepted
H6	Individuals that consider sustainability characteristics important or more when choosing EVOO will pay more for an organic product.	Accepted

H7	Individuals with high interest or knowledge in sustainability tend to pay a higher premium price for an Organic Product.	Accepted
H8	Individuals with high interest or knowledge in sustainability tend to make more frequent purchases of sustainable products.	Accepted
H9	Individuals with high interest or knowledge in sustainability place greater importance on sustainability characteristics when choosing Extra Virgin Olive Oil.	Accepted
H10	Individuals with higher availability of sustainable products, purchases them more often.	Accepted

Table 12 Hypothesis results

CONCLUSIONS

This thesis aimed to bring light to the influence of sustainability claims on consumer choices, using Extra Virgin Olive Oil (EVOO) in Italian supermarkets as a case study. The choice of EVOO is strategic due to its central role in the Mediterranean diet and widespread use in Italian households but not only: EVOO's importance in Italy is not just about culinary traditions; it symbolizes a lifestyle deeply rooted in daily routines. Government support further emphasizes its significance, with incentives and subsidies promoting its organic farming practices. Exploring the gap between actual and potential olive oil output presents a blank opportunity space for further product valorization.

The current scenario favors EVOO sustainability initiatives. Organic olive farms rank fourth in Italy's total organic area, reflecting a positive trend. Numerous new favorable opportunities can be found in this evolving landscape, for example the latest actions EVOO's most important brands are taking towards sustainability, the ongoing recognition for more sustainable choices by consumers and of course the increasing governmental incentives. The current global context for olive farming have elevated the cost of "European" Extra Virgin Olive Oil, placing it in a comparable range with "Italian" EVOO, this development further amplifies the positive impacts that the cultivation, valorization, sale, and consumption of this product can bring to the Italian Government and society.

The empirical analysis, conducted through an A/B online Survey in supermarket contexts, provided valuable and interesting insights. Overall, consumers express a willingness to pay more for products with sustainability claims, particularly for organic EVOO confirming once more that consumers do recognize and accepts a "Premium" price for such products, even in inflationary context and the current structural problems the olive farming is facing in Europe that is spiking up the prices of EVOO in the supermarket shelves in Italy.

Utilizing Stern's Value-Belief-Norm model, this study analyzes the influence of values in consumer choices. Altruistic and biospheric values drive a higher willing to pay for a premium price for sustainable food products in comparison to Egoistic values. Nevertheless, both groups of people doesn't show an important difference in the final amount they would pay for an

Organic EVOO, which could be interpret as Biospheric & Altruistic-driven people would pay less for a non-sustainable product , therefore increasing the prime, or as in the current inflationary situation, with the EVOO price spiking at record levels, there is a new "cap" of the price consumers will pay for that particular food, independently from their own motivations or product's characteristics. Hence, more analysis should be carried out to deeper understand this spotted inconsistency.

Survey results reaffirm the role of knowledge and interest in sustainability, individuals more informed about sustainability topics exhibit a stronger preference for sustainable EVOO, willing to pay a higher premium price for organic vs conventional counterpart. Availability of sustainable products in supermarkets emerges as a crucial factor that influences the consumption of sustainable products, rising an important point for companies and governmental institutions to assess the role of Supermarkets and overall GDOs in the dynamics of the market: Retailers (GDOs) play a pivotal role as intermediaries, potentially shaping the relationship between companies offering sustainable products and consumers seeking eco-friendly choices. The influence of GDOs in being an active touchpoint to educate consumers about sustainability claims merits deeper investigation.

Additional studies are necessary for the dismissed hypotheses, given that the results of their independent sample effect sizes indicate practical significance, despite the absence of statistically significant observations. Conducting a test with a larger number of respondents could provide greater clarity in this regard.

Insights from the use of claims in food products underline the importance of clarity and credibility in conveying information to consumers. Claims supported by certifications emerge as a reliable strategy to combat the perception of greenwashing.

In conclusion, as our society experiences a green wave across various fronts, it is necessary to synergize efforts and promote sustainability. This thesis aims to contributes valuable insights into the potential of sustainable EVOO in Italy and urges for a continue collaboration from all society' actors to protect our shared home—Earth.

BIBLIOGRAPHY

Aggarwal, P. (2011). Greenwashing: The Darker Side Of CSR. *Indian Journal of Applied Research*.

Ajzen, I. (2005). *Attitudes, Personality and Behaviour 2nd ed.*

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social Behavior.*

Amiot-Carlin, M., Perignon, M., Darmon, N., Drogue, S., Sinfort, C., Verger, E., & El Ati, J. (2017). *Promoting Sustainable Food Systems in Mediterranean Countries: A Framework to Implement Recommendations and Actions.* In Development of Voluntary Guidelines for the Sustainability of the Mediterranean Diet in the Mediterranean Region; FAO; International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM).

Anastasiou, C., Keramitsoglou, K., Kalogeras, N., Tsagkaraki, M., Kalatzi, I., & Tsagarakis, K. (2017). Can the "Euro-Leaf" Logo Affect Consumers' Willingness-To-Buy and Willingness-To-Pay for Organic Food and Attract Consumers' Preferences? An Empirical Study in Greece. *Sustainability*, 9(8):1450.

Annunziata, A., Mariani, A., & R., V. (2018). Efeectiveness of sustainbaility labels in guiding food choices: Analysis of visibility and understaning among young adults. *Sustainable Production and Consumption*.

ANSA . (2023, 02 14). *ANSA.it*. Retrieved from Olio d'oliva, 4 italiani su 10 lo acquistano al supermercato: https://www.ansa.it/canale_terraegusto/notizie/mondo_agricolo/2023/02/14/olio-doliva-4-italiani-su-10-lo-acquistano-nella-gdo_7e572531-bb53-437d-8f85-ccb02d68429b.html

Ansar, N. (2013). Impact of green marketing on consumer purchase intention. *Mediterranean Journal of Social Sciences*, 4(11), 650.

ASSISTOL. (2023). *Guida Olio Extra Vergine di Oliva*. Retrieved from Assitol: www.assitol.it/guida/

Baker, M. J. (2003). *The marketing book*. Oxford: Butterworth-Heinemann.

Banerjee, S. (2016). Environmental Marketing (Green Marketing Rudiments). *IOSR Journal of Business and Management*, 69-74.

Banerjee, S., Gulas, C. S., & Iyer, E. (1995). Shades of Green: A Multidimensional Analysis of Environmental Advertising. *Journal of Advertising*.

Barber, N., Kuo, P. J., Bishop, M., & Goodman Jr, R. (2012). Measuring psychographics to assess purchase intention and willingness to pay. *Journal of consumer marketing*, 29(4), 280-292.

Bazoche, P., Deola, C., & Soler, L. G. (2008). An experimental study of wine consumers' willingness to pay for environmental characteristics. No. 725- 2016-49590.

Beaufoy, G., & Pienkowski, M. (2020). The environmental impact of Olive Oil Production in the Eurropean Union: Practical Options for Improving the Environmental Impact. *European Forum on Nature Conservation and Pastoralism*. Brussels.

Becker-Olsen, K., & Potucek, S. (2013). *Greenwashing, Encyclopedia of Corporate Social Responsibility*. Springer.

Birgelen, M., Semeijn, J., & Keicher, M. (2008). Packaging and Proenvironmental Consumption Behaviour. *Envrionment and Behaviour*.

Bougherara, D., & Combris, P. (2009). Eco-labelled food products: what are consumers paying for? *European review of agricultural economics*, 36(3) 321-341.

Bowen, H. R. (1953). *Social responsibilities of the businessman*. University of Iowa Press.

Brundtland Commission. (1987). *Our Common Future*. Oxford University Press.

C.G., W., & G.W., P. (1970). *Consumer Behaviours: An integrated framework* .

Cacchiarelli, L., Carbone, A., Laureti, T., & Sorrentino, A. (2016). The Value of different Quality Clues in the Italian Olive Oil Market. *Rivista di Economia Agraria*.

Calomarde, J. (2000). *Marketing Ecologico*.

Carroll, A. (1991). The Pyramid of Corporate Social Responsibility: Toward the Moral Management of Organizational Stakeholders. *Business Horizons*.

Carzedda, M., Gallenti, G., Troiano, S., Cosmina, M., Marangon, F., de Luca, P., . . . Nassivera, F. (2021). Consumer Preferences for Origin and Organic Attributes of Extra Virgin Olive Oil: A Choice Experiment in the Italian Market. *Foods* .

Casini, L., Contini, C., Romano, C., & Scozzafava, G. (2016). New trends in food choice: What impact on sustainability of rural areas? *Agriculture and Agricultural Science Procedia*.

Chan, R. Y. (2001). Determinants of Chinese consumers' green purchase behavior. *Psychology & marketing*, 18(4), 389-413.

Chan, R., & Lau, L. (2001). Explaining Green Purchasing Behaviour: A cross-cultural study on American and Chinese consumers. *International Consumer Marketing*.

Coddington, W. (1993). *Environmental martketing: Positive strategies for reaching the green consumer.*

COMMISSION OF THE EUROPEAN COMMUNITIES. (2001). *GREEN PAPER.*

Committee for Economic Development. (1971). *Social responsibilities of business corporations.* Committee for Economic Development.

Cosme Bio. (2023). *ComeBio*. Retrieved from The ultimate reference for real organic cosmetics: https://www.cosmebio.org/en/

Council Regulation. (2007). *No 834/2007 of 28 June 2007 on Organic Production and Labelling of Organic Products and Repealing Regulation.*

Crane, A. (2000). Facing the backlash: Green Marketing & Strategic re-orientation in the 1990s. *Strategic Marketing*.

D'souza, C., & Taghian, M. (2005). Green advertising effects on attitude and choice of advertising themes. *Asia Pacific Journal of Marketing and Logistics*, 17(3), 51-66.

D'Souza, C., Taghian, M., Lamb, P., & Peretiatko, R. (2007). Green decisions: demographics and consumer understanding of environmental labels. *International Journal of Consumer Studies*, 31(4), 371-376.

De Groot, J. I., & Steg, L. (2008). Value orientations to explain beliefs related to environmental significant behavior: How to measure egoistic, altruistic and biospheric value orientations. *Environment and Behavior*, 40(3), 330-354.

dell'Orefice, G. (2023). *Olio extravergine, il caro prezzo frena i consumi.* Retrieved from Il Sole 24 Ore: https://www.ilsole24ore.com/art/olio-extravergine-cosi-cambio-strategia-spagnolo-mette-crisi-l-italia-AFbzO5TB?refresh_ce

Dernini, S., & Berry, E. (2015). Mediterranean diet: From a healthy diet to a sustainable dietary pattern. *Front. Nutr.*

Donati, C. (2023, 09). *Kantar*. Retrieved from Sostenibilità: sempre più rilevante per i consumatori: https://www.kantar.com/it/company-news/sostenibilita-sempre-piu-rilevante-per-i-consumatori

Dreval, Y., Loboichenko, V., Malko, A., Morozov, A., Zaika, S., & Kis, V. (2020). The Problem of Comprehensive Analysis of Organic Agriculture as a Factor of Environmental Safety. *Environmental and Climate Technologies*.

D'Souza, C. (2004). Ecolabel programmers: a stakeholder (consumer) perspective. *Corporate Communications*.

Dunlap, R., & Van Liere, K. (1978). The new enviroment paradigm: a proposed measuring instrument and preliminary results. *Environmental Education*.

Engel, J., Blackwell, R., & Miniard, P. (1995). *Consumer Behaviour 8th Edition.* Dryden Press.

European Commission. (2019). *EU Agricultural Outlook for Markets and Income 2019–2030*. Luxembourg: Publications Office of the European Union.

European Commission. (2023). *Agriculture and Rural development*. Retrieved from The organic logo: https://agriculture.ec.europa.eu/farming/organic-farming/organic-logo_en

European Commission. (2019). *The European Green Deal.*

Fergusson, A. (2016). *Designing online experiments using Google forms+ random redirect tool*. Retrieved from Allocate.monster: https://teaching.statistics-is-awesome.org/designing-online-experiments-using-google-forms-random-redirect-tool

Fishbein, M. (1967). *Attitude and the prediction of behaviour.*

FOOD Magazine. (2023). *Knowledge Center. Olio EVO.*

FOOD Magazine. (2023). FOOD - Ottobre 2023.

FOOD Magazine. (2023). FOOD Magazine - Novembre 2023.

García-Martín, M., Torralba, M., Quintas-Soriano, C., Kahl, J., & Plieninger, T. (2020). Linking food systems and landscape sustainability in the Mediterranean region. *Landsc. Ecol.*

Garnett, T., Appleby, M., Balmford, A., Bateman, I., Benton, T., Bloomer , P., . . . Godfray, H. (2013). Sustainable intensification in agriculture: premises and policies. *Science.*

GDOWeek. (2023). *GDO Week 2023.*

Giannoccaro, G., Carlucci, D., Sardaro, R., Roselli, L., & Gennaro, B. C. (2019). Assessing consumer preferences for organic vs eco-labelled olive oils. *Organic Agriculture.*

Godfray, H., Beddington, J., Crute, I., Haddad, L., Lawrence, D., Muir, J., . . . Toulmin, C. (2010). Food Security: the challenge of feeding 9 billion people. *Science.*

Grant, J. (2007). *The green marketing manifesto.*

Group Ecocert. (2023). *Group Ecocert.* Retrieved from Cosmetici biologici o naturali: https://www.ecocert.com/it-IT/dettagli-certificazioni/cosmetici-biologici-o-naturali

Grunert, K. (2011). Sustainability in the food secotr: a consumer behaviour perspective. *Food Systems.*

Hachem, F., Capone, R., Yannakoulia, M., Dernini, S., Hwalla, N., & Kalaitzidis, C. (2016). The Mediterranean diet: A sustainable food consumption pattern. *Mediterra 2016. Zero Waste in the Mediterranean.*

Hart, S. (1997). Beyond Greening: Strategies for a Sustainable World. *Harvard Business Review.*

Hartmann, P., & Apaolaza Ibanez, V. (2006). Green value added. *Marketing Intelligence & Planning.*

Henion, K. E., Kinnear, T. C., & Association, A. M. (1976). *Ecological marketing.* Chicago: American Marketing Association.

IFOAM ORGANICS INTERNATIONAL. (2023). *IFOAM ORGANICS*. Retrieved from Nature et Progrès: https://pgs.ifoam.bio/affiliates/771-nature-et-progres

ISMEA. (2020). *Scheda di Settore Olio d'Oliva 2020*.

ISMEA-CIHEAM. (2019). *Bio in figures 2019*.

Istituto dell'autodisciplina pubblicitaria . (2014). *Codice di autodisciplina della comunicazione commerciale 58va edizione*.

Italia in dati. (2022). *Salari e disuguaglianze in Italia*. Retrieved from Italia in dati: https://italiaindati.com/salari-e-disuguaglianze-in-italia/

Johnstone, M. L., & Tan, L. P. (2015). Exploring the gap between consumers' green rhetoric and purchasing behaviour. *Journal of Business Ethics,* , 132(2), 311-328.

Joshi, Y., & Rahman, Z. (2016). Predictors of young consumer's green purchase behaviour. *Management of Environmental Quality: An International Journal*, 27(4), 452-472.

Kamara, P. (2019). *5 common misconceptions on organic foods: Debunked!* Retrieved from dhnus: ttps://www.dhnusmcgill.com/single-post/2019/12/02/5-common-misconceptions-on-organic-foods-debunked

Kingston, S., Heyvaert, V., & Čavoški, A. (2017). *European environmental law*. Cambridge: Cambridge University Press.

Koller, M., Floh, A., & Zauner, A. (2011). Further insights into perceived value and consumer loyalty: A ―green‖ perspective. *Psychology & Marketing*, 28(12), 1154-1176.

Kontic, I., & Biljeskovic, J. (2010). Greening the marketing mix : A case study of the Rockwool Group.

Kotler, P. (1998). *Marketing Management - Analysis, Planning, Implementation adn Control 9th edition*.

Laroche, M., Bergeron, J., & Barbaro-Forleo, G. (2001). Targeting consumers who are willing to pay more for environmentally friendly products. *Journal of consumer marketing*, 18(6), 503-520.

Latapí Agudelo, M. J., & Davídsdóttir, B. (2019). A literature review of the history and evolution of corporate social responsibility. *International Journal of Corporate Social Responsibility*.

Lin, P. C., & Huang, Y. H. (2012). The influence factors on choice behavior regarding green products based on the theory of consumption values. . *Journal of Cleaner Production*, 22(1), 11-18.

Lombardo L, F. C. (2021). Sustainability Certification, a New Path of Value Creation in the Olive Oil Sector: The ITALIAN Case Study. *Foods*.

Maddux, J. E., & Rogers, R. W. (1983). Protection motivation and self-efficacy: A revised theory of fear appeals and attitude change. *Journal of experimental social psychology*, 19(5), 469-479.

McShane, K. (2016). *Anthropocentrism in climate ethics and policy*. Midwest Stud Philos.

Meadows, D. (1974). *The Limits to Growth: A Report for the Club of Rome*. Potomac Associates and Pan Books.

Meo, R. (2020). *The proces of organic oils as paid to the producers*.

Mili, S. (2006). Olive oil marketing on non-traditional markets: prospects and strategies. *New Medit*.

Miller, K. (2005). *Communications Theories: Prespectives, Processes, and Contexts*.

Ministero dell' Ambiente e della Sicurezza Energetica. (2023). *Ministero dell' Ambiente e della Sicurezza Energetica*. Retrieved from Certificazione ambientale: https://www.mase.gov.it/pagina/certificazione-ambientale

Mintel. (2022). Consumer Trends 2022.

Mintel. (2022). *Global Food & Drink trends 2022*.

Mostafa, M. (2007). A hierarchical analysis of the green consciousness of the Egyptian consumer. *Psychology and Marketing*, 24, 445–473.

Muraca, C. (2021). *Prospects for integrating Environmental and Sustainability Goals with European Competition Law and Policy. A focus on Article 101 TFEU*. UNIVERSITA' COMMERCIALE "LUIGI BOCCONI" PhD SCHOOL.

Nandini, M., & Desphande. (2011). A conceptual framework on green marketing. A tool dor sustainable development. *International Journal of Sales and Marketing Management*.

Niklis, D., Baourakis, G., Thabet, B., & Manthoulis, G. (2014). *Trade and logistics: the case fo the olive sector*.

NOMISMA. (2023). *Bio italiano: +9% le vendite sul mercato interno e +8% l'export rispetto al 2022*. Retrieved from https://www.nomisma.it/press-area/comunicato-stampa-sana-2023/

Ottman, J. (1993). *Green Marketing: Challenges & Opportunities for the New Marketing Age*.

Pairotti, M., Cerutti, A., Martini, F., Vesce, E., Padovan, D., & Beltramo, R. (2015). Energy consumption and GHG emission of the. *Journal of Cleaner Production Mediterranean diet: A systemic assessment using a hybrid LCA-IO method*.

Panconi, T. (2021). *Etichette Ecologiche Nel Settore Alimentare: Un'analisi sugli effetti delle etichette Bio, Fair trade e FSC sulla percezione del prodotto*. LUISS, Dipartimento di Impresa e Management.

Peatti, K. (1995). *Environmental Marketing Management: Meeting the Green Challenge*.

Peattie, K. (1999). Trappings versus susbtance in the greening of marketing plannning. *Strategic Marketing*.

Peattie, K. (2001a). Towards Sustainability: The Third Age of Green Marketing. *The Marketing Review*, 2, pp. 129-146.

Peattie, K. (2001b). Golden goose or wild goose? The hunt for the green consume. *Business Strategy and the Environment*, Vol. 10 No. 4, pp.187-99.

Peattie, K., & Crane, A. (2005). Green Marketing: Legend, Myth, Farce or Prophesy? *Qualitative Market Research: An International Journal*.

Pietro-Sandoval, V., Alfaro, J., Mejia-Villa, A., & Ormazabal, M. (2016). Eco-labels as a multidimentional research topic: trends and opportunities . *Clean Production*.

Pranee, C. (2010). Marketing ethical implication social responsibility. *International Journal of Organizational Innovation*, 6-21.

Prothero, A. (1990). Green consumerism and the societal marketing concept: marketing strategies for the 1990's. *Marketing Management*.

Rahbar, E., & Abdul Wahid, N. (2011). Investigation of green marketing tools'effect on consumers' purchase behavior. *Business strategy series*, 73-83.

Rahman, I., & Reynolds, D. (2017). Organic Wine: the Influence of Biospheric, Altrusitic, and Egoistic Values on Purchase Intention, Willigness to Pay More, and Willingess to Sacrifice. *International Journal of Hospitality Beverage Management*.

ReportAziende. (2023). *Report Aziende*. Retrieved from https://www.reportaziende.it

Righetto, L. (2021). *The effects of greenwashing on Italian consumers.* Venezia: Universita Ca'Foscari Venezia.

Ritchie, H., Rosado, P., & Roser, M. (2023). *Environmental Impacts of Food Production*. Retrieved from OurWorldInData.org: https://ourworldindata.org/environmental-impacts-of-food

Roberts, J. A. (1996). Green consumers in the 1990s: profile and implications for advertising. *Journal of business research*, 36(3), 217-231.

Rogers, N., & Kaplan, J. (2020). *Atlanta businesses backed Martin Luther King, Jr.'s civil rights movement in the '60s. Here's how companies can support racial equality today, according to his son*. Retrieved from Business Insider.

Roselli, L., De Gennaro, B., Cimino, O., & Medicamento, U. (2009). The effects of the health check of the common agricultural policy on Italian olive tree farming. *New Medit*.

Saggio, L. (2023, 02 15). *Terraevita*. Retrieved from Olio d'oliva, in Italia produzione in calo strutturale: https://terraevita.edagricole.it/featured/olio-oliva-produzione-calo-strutturale/#:~:text=4%20italiani%20su%2010%20acquistano,5%2C27%20euro%20al%20kilo.

Sammer, K., & Wüstenhagen, R. (2006). The influence of eco-labelling on consumer behaviour–Results of a discrete choice analysis for washing machines. *Business Strategy and the Environment*, 15(3), 185-199.

Santucci, F. M., Callieris, R., & Bello, D. d. (2021). Organic olive oil in Italy: a missed opportunity? *Bulgarian Journal of Agricultural Science*, 1039–1050.

Santucci, F., & Pignataro, F. (2002). *Organic farming in Italy. USDA-OECD Worksship on organic agriculture.*

Schlegelmilch, B. B., Bohlen, G. M., & Diamantopoulos, A. (1996). The link between green purchasing decisions and measures of environmental consciousness. *European journal of marketing*, 30(5), 35-55.

Schwartz, S. (1977). Normative influences on altruism. . *Advances in experiemental social psychology*.

Schwartz, S. (1992). Universals in the content and strusctures of values: Theoretical advances and empirical test in 20 countries. *Advances in experimental psychology*.

Serreli, G., & Deiana, M. (2018). Biological relevance of extra virgin olive oil polyphenols metabolites. *Antiox*.

Sharma, A., & Joshi, S. (2017). Green consumerism: overview and further research directions. *International Journal of Process Management and Benchmarking*, 7(2), 206-223.

Sirieix, L., Delanchy, M., Remaud, H., Zepeda, L., & Gurviez, P. (2013). Consumers' perceptions of individual and combined sustainable food labels: a UK pilot investigation. *International Journal of Consumer Studies,*.

Springmann, M., Clark, M., & Mason-D'Croz, D. e. (2018). Options for keeping the food system within environmental limits. *Natured*.

Stern, P. C. (2000). Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues*, 56, 407–424.

Stotten, R., Bui, S., Pugliese, P., Schermer, M., & Lamine, C. (2017). Organic values-based supply chains as a tool for territorial development: a comparative analysis of three European organic regions. *Soc. of Agr. & Food*.

Straughan, R. D., & Roberts, J. A. (1999). Environmental segmentation alternatives: a look at green consumer behavior in the new millennium. . *Journal of consumer marketing*, 16(6), 558-575.

Tanner, C., & Wölfing Kast, S. (2003). Promoting sustainable consumption: Determinants of green purchases by Swiss consumers. *Psychology & Marketing*, 20(10), 883-902.

Thøgersen, J. (2005). How may consumer policy empower consumers for sustainable lifestyles? *Journal of consumer policy*, 28(2), 143-177.

Thøgersen, J., Haugaard, P., & Olesen, A. (2010). Consumer responses to ecolables. *European Journal of Marketing*.

Tilman, D., K.G., C., Matson, P., Naylor, R., & Polasky, S. (2002). Agricultural sustainability and intensive production practices. *Nature*.

Unitated Nations. (2015). *2030 Agenda for Sustainable Development*.

United Nations. (1997). *Kyoto Protocol to the United Nations Framework Convention on Climate Change*.

United Nations. (2023, October). *United Nations Conference on the Human Environment, Stockholm 1972*. Retrieved from https://www.un.org/en/conferences/environment/stockholm1972

United Natons. (1992). *United Nations Framework Convention on Climate Change*.

Verain, M., Bartels, J., Dagevos, H., S.J., S., Onwezen, M., & Antonide, G. (2012). Segments of sustainable food consumers: a literature review. *International Journal of Consumer Studies*.

Viola, I., & Marinelli, A. (2016). Life Cycle Assessment and Environmental Sustainability in the Food System. *Agriculture and Agricultural Science Procedia*.

Ward, A., & Mishra, A. (2019;). Addressing Sustainability Issues with Voluntary Standards and Codes: A Closer Look at Cotton Production in India. *In Business Responsibility and Sustainability in India*.

Xiong, B., Sumner, D., & Matthews, W. (2014). A new market for an old food: The U.S. demand for olive oil. *Agricultе Economics*.

APPENDIX

- **Survey – Version "A" – Feedback given.**

(IT) Dichiarazioni di Sostenibilità e il comportamento d'acquisto dei consumatori: il caso dell'Olio extra vergine di oliva in Italia.
(EN) Sustainability claims and the Consumer Purchase Behaviour: the case of Extra virgin olive oil in Italy.

Ciao! Sono Mirna, una studentessa magistrale al Politecnico di Torino. Questo questionario mira a esplorare quanto le dichiarazioni di sostenibilità influenzino il comportamento d'acquisto dei consumatori in Italia, in particolare nel caso dell'olio extra vergine d'oliva.

Rispondere al sondaggio richiederà circa 4 minuti. Tutte le risposte sono anonime, e non è richiesta alcuna conoscenza preliminare.

Le informazioni raccolte saranno utilizzate esclusivamente per scopi accademici legati alla mia tesi, non per ricerche di mercato.

Ti ringrazio per la tua gentile collaborazione!

Hello! I'm Mirna, a master's student at Politecnico di Torino. This survey is designed to explore the extent to which sustainability claims influence consumers' purchasing behavior in Italy, particularly in the case of the extra virgin olive oil.

Completing the survey will take approximately 4 minutes. All responses are anonymous, and no prior knowledge is necessary.

The information collected will be used exclusively for the academic purposes of my thesis, and this is not a market research study.

Thank you for your kind cooperation!

* Indicates required question

1. Select the language you would like to use: *
   Seleziona la lingua che desideri utilizzare:

   Mark only one oval.

   ◯ English *Skip to question 2* ◯ Italiano *Skip to question 17*

Demographics

2. Select your age: *

   Mark only one oval.

   ◯ 18 - 25
   ◯ 26 - 41
   ◯ 42 - 57
   ◯ 58 - 67
   ◯ 68 - 76
   ◯ 77+

3. Select your gender: *

Mark only one oval.

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

4. Select the region you are currently living in: *

Mark only one oval.

- ◯ Abruzzo
- ◯ Aosta Valley
- ◯ Apulia
- ◯ Basilicata
- ◯ Calabria
- ◯ Campania
- ◯ Emilia-Romagna
- ◯ Friuli-Venezia Giulia
- ◯ Lazio
- ◯ Liguria
- ◯ Lombardy
- ◯ Marche
- ◯ Molise
- ◯ Piedmont
- ◯ Sardinia
- ◯ Sicily
- ◯ Trentino-Alto Adige/Südtirol
- ◯ Tuscany
- ◯ Umbria
- ◯ Veneto

5. What is your highest degree obtained? *

Mark only one oval.

- ◯ Elementary school diploma
- ◯ Highschool diploma
- ◯ Bachelor degree or equivalent
- ◯ Master degree or equivalent
- ◯ Doctorate
- ◯ Other: _____

6. What is your average annual gross income? *

Mark only one oval.

- ◯ < 14.999 €
- ◯ 15.000 - 29.999 €
- ◯ 30.000 - 49.999 €
- ◯ over 50.000 €

Purchase habits

7. How often do you go to the supermarket? (in average) *

Mark only one oval.

- ◯ More than once a week
- ◯ Once a week
- ◯ Once every 2 weeks
- ◯ Once a month
- ◯ Once every 3 months
- ◯ Other: _____

8. How often do you buy Extra virgin olive oil on average? *

Mark only one oval per row.

	Once a week	Once every 2 weeks	Once a month	Once every 3 months	Once every 6 months	I dont buy it / I dont consume it
I buy it ...	◯	◯	◯	◯	◯	◯

9. When choosing a bottle of Extra virgin olive oil, how important are the following characteristics in your decision? *

Mark only one oval per row.

	Not important	Somewhat important	Important	Very important
Brand	◯	◯	◯	◯
Price	◯	◯	◯	◯
Country of origin	◯	◯	◯	◯
Sustainability	◯	◯	◯	◯
Taste	◯	◯	◯	◯
Quality	◯	◯	◯	◯
Nutritional values	◯	◯	◯	◯

10. Do you usually buy sustainable food? *

Mark only one oval.

	1	2	3	4	5	
Nev	◯	◯	◯	◯	◯	Very often/Always

Concepts

11. Which one of the following sentences, best defines "**Organic Extra virgin olive oil**" for you? *

Organic Extra virgin olive oil ...

Mark only one oval.

- ◯ is produced from olives cultivated using organic farming methods, without synthetic pesticides or fertilizers, to reduce environmental impact *Skip to question 12*
- ◯ is free from harmful substances, making it a safer and higher quality option compared to the classic one *Skip to section 5 (Friendly message :))*
- ◯ is a healthier choice compared to classic extra virgin olive oil due to its natural production methods and high content of antioxidants, offering potential health benefits *Skip to section 5 (Friendly message :))*

Friendly message :)

Oops, that's not quite right.

Organic Extra virgin olive oil is produced from olives cultivated using organic farming methods, without synthetic pesticides or fertilizers, to reduce environmental impact.

Please continue with the survey without changing your previous answer. Thank you!

Willigness to Pay

12. How much would you pay for this 1-liter Extra virgin olive oil bottle in a supermarket? *
Please enter the amount without the euro symbol (€) and use a period (.) for decimals if needed.

13. How much would you pay for this 1-liter **Organic** Extra virgin olive oil bottle in a supermarket? *
Please enter the amount without the euro symbol (€) and use a period (.) for decimals if needed.

14. If the Organic Extra virgin olive oil bottle above **would not have the EU organic logo** but just mention"Organic" on the packaging then you... *

European organic logo

Mark only one oval.

- ◯ would have paid less if the logo was not present
- ◯ would have paid more if the logo was not present
- ◯ would have paid the same even if the logo was not present

Drivers

15. How do you feel about the following statements? *

1: I do not agree , 5: I strongly agree

Mark only one oval per row.

	1	2	3	4	5
I try to stay informed regarding sustainability issues	◯	◯	◯	◯	◯
It is easy to find sustainable food products when I go to my supermarket	◯	◯	◯	◯	◯
I like to try new food products	◯	◯	◯	◯	◯

16. From the following statements, which one influences you the most to consider buying sustainable food? *

Rank the statements from 1° (more influential) to 3° (less influential)

Mark only one oval per row.

	1st	2nd	3rd
They are healthier than conventional options	◯	◯	◯
They help to preserve the environment	◯	◯	◯
They help to improve our society	◯	◯	◯

Demografia

17. Seleziona la tua età: *

Mark only one oval.

- ◯ 18 - 25
- ◯ 26 - 41
- ◯ 42 - 57
- ◯ 58 - 67
- ◯ 68 - 76
- ◯ 77+

18. Seleziona il tuo genere: *

Mark only one oval.

- ◯ Femmina
- ◯ Maschio
- ◯ Non binario/Altro
- ◯ Preferisco non rispondere

19. Seleziona la regione in cui vivi attualmente: *

Mark only one oval.

- Abruzzo
- Basilicata
- Calabria
- Campania
- Emilia-Romagna
- Friuli-Venezia Giulia
- Lazio
- Liguria
- Lombardia
- Marche
- Molise
- Piemonte
- Puglia
- Sardegna
- Sicilia
- Toscana
- Trentino-Alto Adige
- Umbria
- Valle d'Aosta
- Veneto

20. Qual è il titolo di studio più alto che hai ottenuto? *

Mark only one oval.

- Scuola primaria o inferiore
- Scuola secondaria di primo grado
- Diploma di scuola secondaria di secondo grado
- Laurea triennale o equivalente
- Laurea magistrale o equivalente
- Dottorato
- Other: _____

21. Qual è il tuo reddito lordo annuo medio? *

Mark only one oval.

- < 14.999 €
- 15.000 - 29.999 €
- 30.000 - 49.999 €
- Oltre 50.000 €

Abitudini di acquisto

22. Quanto spesso vai al supermercato? (in media) *

Mark only one oval.

- Più di una volta alla settimana
- Una volta a settimana
- Una volta ogni 2 settimane
- Una volta al mese
- Una volta ogni 3 mesi
- Other: _____

23. Con che frequenza acquisti in media l'olio extra vergine di oliva? *

Mark only one oval per row.

	Una volta alla settimana	Una volta ogni 2 settimane	Una volta al mese	Una volta ogni 3 mesi	Una volta ogni 6 mesi	Non lo compro / non lo consumo
Lo compro ...	◯	◯	◯	◯	◯	◯

24. Nella scelta di una bottiglia di Olio extra vergine di oliva, quanto sono importanti le seguenti caratteristiche nella tua decisione? *

Mark only one oval per row.

	Non importante	Poco importante	Importante	Molto importante
Marca	◯	◯	◯	◯
Prezzo	◯	◯	◯	◯
Paese d'origine	◯	◯	◯	◯
Sostenibilità	◯	◯	◯	◯
Gusto	◯	◯	◯	◯
Qualità	◯	◯	◯	◯
Valori nutrizionali	◯	◯	◯	◯

25. Di solito acquisti prodotti alimentari sostenibili? *

Mark only one oval.

	1	2	3	4	5	
Mai	◯	◯	◯	◯	◯	Molto spesso/Sempre

Concetti

26. Quale tra le seguenti frasi definisce meglio "**Olio extra vergine di oliva biologico**"? *

L'olio extra vergine di oliva biologico...

Mark only one oval.

- ◯ è prodotto da olive coltivate in agricoltura biologica, senza pesticidi o fertilizzanti sintetici per ridurre l'impatto ambientale *Skip to question 27*
- ◯ è privo di sostanze dannose, rendendolo una scelta più sicura e di alta qualità rispetto a quello convenzionale *Skip to section 11 (Messagio cordiale :))*
- ◯ è una scelta più salutare rispetto all'olio extra vergine di oliva classico grazie ai suoi metodi di produzione naturali e all'alto contenuto di antiossidanti, offrendo potenziali benefici per la salute *Skip to section 11 (Messagio cordiale :))*

Messagio cordiale :)

Oops, non è del tutto corretto.

L'olio extra vergine di oliva biologico è prodotto da olive coltivate in agricoltura biologica, senza pesticidi o fertilizzanti sintetici per ridurre l'impatto ambientale.

Prosegui con il sondaggio senza modificare la tua risposta precedente. Grazie!

Disponibilità all'acquisto

27. Quanto pagheresti per questa bottiglia di Olio extra vergine di oliva 1 L in un supermercato? *

Per favore, inserisci l'importo senza il simbolo dell'euro (€) e usa un punto (.) per i decimali, se necessario.

28. Quanto pagheresti per questa bottiglia di Olio extra vergine di oliva **biologico** 1 L in un supermercato? *

Per favore, inserisci l'importo senza il simbolo dell'euro (€) e usa un punto (.) per i decimali, se necessario.

29. Se la bottiglia di Olio extra vergine di oliva biologico qui sopra non avesse il logo biologico europeo ma solo la scritta 'Biologico' sulla confezione, tu ... *

Logo biologico europeo

Mark only one oval.

- avresti pagato di meno se il logo non fosse stato presente
- avresti pagato di più se il logo non fosse stato presente
- avresti pagato lo stesso anche se il logo non fosse stato presente

Fattori influenzanti

30. Come la pensi riguardo alle seguenti affermazioni? *

1: Sono completamente in disaccordo , 5: Sono pienamente d'accordo

Mark only one oval per row.

	1	2	3	4	5
Cerco di tenermi informato sui temi della sostenibilità	◯	◯	◯	◯	◯
È facile trovare prodotti alimentari sostenibili quando vado al mio supermercato di fiducia	◯	◯	◯	◯	◯
Mi piace provare nuovi prodotti alimentari	◯	◯	◯	◯	◯

31. Tra le seguenti affermazioni, quale ti influenzano di più nella considerazione di acquistare prodotti alimentari sostenibili? *

Classifica le opzioni dal 1° (più influente) al 3° (meno influente).

Mark only one oval per row.

	1° posto	2° posto	3° posto
Sono più sani rispetto agli altri prodotti	◯	◯	◯
Aiutano a preservare l'ambiente	◯	◯	◯
Aiutano a migliorare la nostra società	◯	◯	◯

- **Survey – Version "B" – No Feedback given.**

(IT) Dichiarazioni di Sostenibilità e il comportamento d'acquisto dei consumatori: il caso dell'Olio extra vergine di oliva in Italia.
(EN) Sustainability claims and the Consumer Purchase Behaviour: the case of Extra virgin olive oil in Italy.

Ciao! Sono Mirna, una studentessa magistrale al Politecnico di Torino. Questo questionario mira a esplorare quanto le dichiarazioni di sostenibilità influenzino il comportamento d'acquisto dei consumatori in Italia, in particolare nel caso dell'olio extra vergine d'oliva.

Rispondere al sondaggio richiederà circa 4 minuti. Tutte le risposte sono anonime, e non è richiesta alcuna conoscenza preliminare.

Le informazioni raccolte saranno utilizzate esclusivamente per scopi accademici legati alla mia tesi, non per ricerche di mercato.

Ti ringrazio per la tua gentile collaborazione!

Hello! I'm Mirna, a master's student at Politecnico di Torino. This survey is designed to explore the extent to which sustainability claims influence consumers' purchasing behavior in Italy, particularly in the case of the extra virgin olive oil.

Completing the survey will take approximately 4 minutes. All responses are anonymous, and no prior knowledge is necessary.

The information collected will be used exclusively for the academic purposes of my thesis, and this is not a market research study.

Thank you for your kind cooperation!

* Indicates required question

1. Select the language you would like to use: *
   Seleziona la lingua che desideri utilizzare:

   Mark only one oval.

   ◯ English *Skip to question 2* ◯ Italiano *Skip to question 17*

Demographics

2. Select your age: *

   Mark only one oval.

   ◯ 18 - 25
   ◯ 26 - 41
   ◯ 42 - 57
   ◯ 58 - 67
   ◯ 68 - 76
   ◯ 77+

3. Select your gender: *

   Mark only one oval.

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

4. Select the region you are currently living in: *

Mark only one oval.

- ◯ Abruzzo
- ◯ Aosta Valley
- ◯ Apulia
- ◯ Basilicata
- ◯ Calabria
- ◯ Campania
- ◯ Emilia-Romagna
- ◯ Friuli-Venezia Giulia
- ◯ Lazio
- ◯ Liguria
- ◯ Lombardy
- ◯ Marche
- ◯ Molise
- ◯ Piedmont
- ◯ Sardinia
- ◯ Sicily
- ◯ Trentino-Alto Adige/Südtirol
- ◯ Tuscany
- ◯ Umbria
- ◯ Veneto

5. What is your highest degree obtained? *

Mark only one oval.

- ◯ Elementary school diploma
- ◯ Highschool diploma
- ◯ Bachelor degree or equivalent
- ◯ Master degree or equivalent
- ◯ Doctorate
- ◯ Other: _____

6. What is your average annual gross income? *

Mark only one oval.

- ◯ < 14.999 €
- ◯ 15.000 - 29.999 €
- ◯ 30.000 - 49.999 €
- ◯ over 50.000 €

Purchase habits

7. How often do you go to the supermarket? (in average) *

Mark only one oval.

- ◯ More than once a week
- ◯ Once a week
- ◯ Once every 2 weeks
- ◯ Once a month
- ◯ Once every 3 months
- ◯ Other: _____

8. How often do you buy Extra virgin olive oil on average? *

Mark only one oval per row.

	Once a week	Once every 2 weeks	Once a month	Once every 3 months	Once every 6 months	I dont buy it / I dont consume it
I buy it ...	◯	◯	◯	◯	◯	◯

9. When choosing a bottle of Extra virgin olive oil, how important are the following characteristics in your decision? *

Mark only one oval per row.

	Not important	Somewhat important	Important	Very important
Brand	◯	◯	◯	◯
Price	◯	◯	◯	◯
Country of origin	◯	◯	◯	◯
Sustainability	◯	◯	◯	◯
Taste	◯	◯	◯	◯
Quality	◯	◯	◯	◯
Nutritional values	◯	◯	◯	◯

10. Do you usually buy sustainable food? *

Mark only one oval.

	1	2	3	4	5	
Nev	◯	◯	◯	◯	◯	Very often/Always

Concepts

11. Which one of the following sentences, best defines "**Organic Extra virgin olive oil**" for you? *

Organic Extra virgin olive oil ...

Mark only one oval.

- ◯ is produced from olives cultivated using organic farming methods, without synthetic pesticides or fertilizers, to reduce environmental impact
- ◯ is free from harmful substances, making it a safer and higher quality option compared to the classic one
- ◯ is a healthier choice compared to classic extra virgin olive oil due to its natural production methods and high content of antioxidants, offering potential health benefits

Willigness to Pay

12. How much would you pay for this 1-liter Extra virgin olive oil bottle in a supermarket? *
Please enter the amount without the euro symbol (€) and use a period (.) for decimals if needed.

13. How much would you pay for this 1-liter **Organic** Extra virgin olive oil bottle in a supermarket? *
Please enter the amount without the euro symbol (€) and use a period (.) for decimals if needed.

14. If the Organic Extra virgin olive oil bottle above **would not have the EU organic logo** but just mention"Organic" on the packaging then you... *

European organic logo

Mark only one oval.

- would have paid less if the logo was not present
- would have paid more if the logo was not present
- would have paid the same even if the logo was not present

Drivers

15. How do you feel about the following statements? *

1: I do not agree , 5: I strongly agree

Mark only one oval per row.

	1	2	3	4	5
I try to stay informed regarding sustainability issues					
It is easy to find sustainable food products when I go to my supermarket					
I like to try new food products.					

16. From the following statements, which one influences you the most to consider buying sustainable food? *

Rank the statements from 1° (more influential) to 3° (less influential)

Mark only one oval per row.

	1st	2nd	3rd
They are healthier than conventional options			
They help to preserve the environment			
They help to improve our society			

Demografia

17. Seleziona la tua età: *

Mark only one oval.

- 18 - 25
- 26 - 41
- 42 - 57
- 58 - 67
- 68 - 76
- 77+

18. Seleziona il tuo genere: *

Mark only one oval.

- Femmina
- Maschio
- Non binario/Altro
- Preferisco non rispondere

19. Seleziona la regione in cui vivi attualmente: *

Mark only one oval.

- Abruzzo
- Basilicata
- Calabria
- Campania
- Emilia-Romagna
- Friuli-Venezia Giulia
- Lazio
- Liguria
- Lombardia
- Marche
- Molise
- Piemonte
- Puglia
- Sardegna
- Sicilia
- Toscana
- Trentino-Alto Adige
- Umbria
- Valle d'Aosta
- Veneto

20. Qual è il titolo di studio più alto che hai ottenuto? *

Mark only one oval.

- Scuola primaria o inferiore
- Scuola secondaria di primo grado
- Diploma di scuola secondaria di secondo grado
- Laurea triennale o equivalente
- Laurea magistrale o equivalente
- Dottorato
- Other: _____

21. Qual è il tuo reddito lordo annuo medio? *

Mark only one oval.

- < 14.999 €
- 15.000 - 29.999 €
- 30.000 - 49.999 €
- Oltre 50.000 €

Abitudini di acquisto

22. Quanto spesso vai al supermercato? (in media) *

Mark only one oval.

- Più di una volta alla settimana
- Una volta a settimana
- Una volta ogni 2 settimane
- Una volta al mese
- Una volta ogni 3 mesi
- Other: _____

23. Con che frequenza acquisti in media l'olio extra vergine di oliva? *

Mark only one oval per row.

	Una volta alla settimana	Una volta ogni 2 settimane	Una volta al mese	Una volta ogni 3 mesi	Una volta ogni 6 mesi	Non lo compro / non lo consumo
Lo compro ...	◯	◯	◯	◯	◯	◯

24. Nella scelta di una bottiglia di Olio extra vergine di oliva, quanto sono importanti le seguenti caratteristiche nella tua decisione? *

Mark only one oval per row.

	Non importante	Poco importante	Importante	Molto importante
Marca	◯	◯	◯	◯
Prezzo	◯	◯	◯	◯
Paese d'origine	◯	◯	◯	◯
Sostenibilità	◯	◯	◯	◯
Gusto	◯	◯	◯	◯
Qualità	◯	◯	◯	◯
Valori nutrizionali	◯	◯	◯	◯

25. Di solito acquisti prodotti alimentari sostenibili? *

Mark only one oval.

	1	2	3	4	5	
Mai	◯	◯	◯	◯	◯	Molto spesso/Sempre

Concetti

26. Quale tra le seguenti frasi definisce meglio per te l'**Olio extra vergine di oliva biologico?** *

L'olio extra vergine di oliva biologico...

Mark only one oval.

◯ è prodotto da olive coltivate in agricoltura biologica, senza pesticidi o fertilizzanti sintetici per ridurre l'impatto ambientale

◯ è privo di sostanze dannose, rendendolo una scelta più sicura e di alta qualità rispetto a quello convenzionale

◯ è una scelta più salutare rispetto all'olio extra vergine di oliva classico grazie ai suoi metodi di produzione naturali e all'alto contenuto di antiossidanti, offrendo potenziali benefici per la salute

Disponibilità all'acquisto

27. Quanto pagheresti per questa bottiglia di Olio extra vergine di oliva 1 L in un supermercato? *

Per favore, inserisci l'importo senza il simbolo dell'euro (€) e usa un punto (.) per i decimali, se necessario.

28. Quanto pagheresti per questa bottiglia di Olio extra vergine di oliva **biologico** 1 L in un supermercato? *

Per favore, inserisci l'importo senza il simbolo dell'euro (€) e usa un punto (.) per i decimali, se necessario.

29. Se la bottiglia di Olio extra vergine di oliva biologico qui sopra **non avesse il logo biologico europeo** ma solo la scritta 'Biologico' sulla confezione, tu ... *

Logo biologico europeo

Mark only one oval.

- avresti pagato di meno se il logo non fosse stato presente
- avresti pagato di più se il logo non fosse stato presente
- avresti pagato lo stesso anche se il logo non fosse stato presente

Fattori influenzanti

30. Come la pensi riguardo alle seguenti affermazioni? *
1: Sono completamente in disaccordo , 5: Sono pienamente d'accordo

Mark only one oval per row.

	1	2	3	4	5
Cerco di tenermi informato sui temi della sostenibilità	◯	◯	◯	◯	◯
È facile trovare prodotti alimentari sostenibili quando vado al mio supermercato di fiducia	◯	◯	◯	◯	◯
Mi piace provare nuovi prodotti alimentari	◯	◯	◯	◯	◯

31. Tra le seguenti affermazioni, quale ti influenzano di più nella considerazione di acquistare prodotti alimentari sostenibili? *
Classifica le opzioni dal 1° (più influente) al 3° (meno influente).

Mark only one oval per row.

	1° posto	2° posto	3° posto
Sono più sani rispetto agli altri prodotti	◯	◯	◯
Aiutano a preservare l'ambiente	◯	◯	◯
Aiutano a migliorare la nostra società	◯	◯	◯