Willingness to pay for organic food in Dublin

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Abstract

The purpose of this dissertation is to analyse the attributes that influence willingness to pay for organic food in Dublin. The data analysed in this research comes from 105 people surveyed, where sociodemographic factors, current consumption habits, attributes of organic food and consumption habits influenced by the covid-19 pandemic are analysed. For the analysis of the attributes, the attributes were ranked through the conjoint analysis (CA) method and the Excel 365 regression tool was used to perform the calculations to measure the WTP of onion and organic milk.

The results show that the most appreciated attribute and that most influences the WTP is the lowest price, with slight differences according to the type of product, in the case of organic onion the attributes that most influence the WTP are price and the non-use of pesticidal chemicals and for organic milk is the price and low levels of antibiotics. According to the type of products, organic fruits and vegetables are the foods most consumed by those surveyed. On the other hand, the results also show that the Covid-19 pandemic did not positively stimulate or increase the consumption of organic food among those surveyed. Regarding consumption habits, the most consumed category of organic foods are fruits and vegetables.

Keywords: Organic foods, Consumer behaviour, Willingness to pay, Dublin, Conjoint Analysis.

Declaration

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CA	Conjoint Analysis
Covid-19	Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)
CVM	Contingent Valuation Method
WTP	Willingness to pay

1. Introduction

In recent years, consumers have shown more interest in health care and concern for the deterioration of the environment, and they understand that they continue to support the consumption of conventional products that put the health and well-being of the planet at risk (Nandi et al., 2017), which is why it is increasingly common for people to adopt healthy diets and habits, and the Covid 19 pandemic has further promoted these changes in habits (Sheth, 2020). People understand the attributes of food and how this can help improve their health and the planet, so they choose what they perceive as most beneficial for them. This brings with it giant challenges to the current food industry, which must understand these changes to innovate and adapt.

In this context, organic foods have taken a leading role in these consumer concerns. The interest that organic products have gained in recent years has been the focus of research by researchers and scientists, studies that have shown that depending on sociodemographic factors and attributes of food, consumers are willing to pay more for them (Nandi et al., 2017).

Organic foods have gained an important share in the preferences of European consumers, their demand growth in recent decades (DOVLEAC, 2016) (Hughner et al., 2007), in the world people increasingly understand and demand for products pesticide-free, concerned about the effects against the environment, overexploitation, climate change and people's health, (Cachero-Martínez, 2020) (Camarena, Romero and Camarena, 2020); This accelerated growth in the market for organic products brings with it many growth opportunities for the sector, as well as challenges for producers and manufacturers of organic food due to the intensification of competition (Cheikhrouhou, Bélisle, and Legendre, 2020), And challenges for companies and the market who must respond and seek strategies to respond to this need; there has been a considerable increase in the supply of these products in recent years, for its part, the Irish government, headed by the Department of agriculture food and the marine (DAFM), has been developing programs to encourage and increase the cultivation of organic foods in the country (gov.ie (2021). Today consumers have more access to organic products, thanks to specialized stores and spots where previously organic products such as retail supermarkets were not seen, who thanks to their logistics network can go further, giving more accessibility to buyers (Cachero-Martínez, 2020).

Consuming organic food means protecting the health of the planet and the people who live on it since these products are free of toxic synthetic chemical pesticides, artificial fertilizers or genetically modified organisms, and hormones or antibiotics that cause health problems.

Instead, organic food farmers use techniques that help preserve the soil and improve the health of ecosystems. Compared to conventional foods, organic foods are richer in healthy nutrients and antioxidants (SMITH, 2021). In addition, by avoiding the use of chemicals, damage to plant and animal species is reduced, helping to preserve ecosystems and rural development is improved, making it more sustainable (Cachero-Martínez, 2020).

Consumers of organic products prioritize these attributes of benefits that they generate to the environment and people's health over taste attributes (Camarena, Romero and Camarena, 2020). Organic foods have gradually left the category of niche products, so the commercial potential can be enormous in the coming years, and they should be given the importance they deserve (Kuchler, F. et al., 2020). This gives us indications of people's concern for the environment and the future of the planet. All this knowledge helps to develop better business strategies for marketing organic products and strengthen the industry. A valuable reason to develop this research.

The current pandemic that the world has experienced for more than a year due to the Covid-19 disease has generated chaos, social and economic crisis, has changed aspects of daily life as we knew it and has made people and companies adapt to be able to survive (OANA, 2020). The low moods derived from the confinements and quarantine have led to the consumption of unhealthy foods, which is an interesting result to investigate in-depth in the population of Dublin (Romeo-Arroyo, Mora and Vázquez-Araújo, 2020). However, on the other hand, this tragic situation has made people re-evaluate the impact that humanity is generating in the deterioration of ecosystems and the environment in general, changing their mentality and showing more concern towards these issues (Qi, Yu and Ploeger, 2020), as well as there is a greater awareness of consuming healthy foods to support the immune system, a valuable reason to carry out this study (Ali and Ali, 2020).

The Covid-19 pandemic is not the first that humanity has faced, however, the reactions to these events are always fear and panic, this brings changes in the consumer behaviour of the people and the masses; The reactions to this are varied, people do not want to spend their money for fear of events that may occur in the future, and they begin to save money by buying less expensive products (OANA, 2020). Every social and economic change impacts people's consumption habits, the duration of the crisis is a factor that aggravates the changes and makes them more drastic (VALÁŠKOVÁ & KLIEŠTIK, 2015).

At the beginning of the pandemic, Ireland was experiencing panic purchases, over buying products to store at home for fear of shortages, a normal reaction to this type of situation of chaos and crisis (Ward, 2020). New dynamics such as the use of masks and social distance are

new aspects for people and society in general, changing access restrictions to places that have increased online sales by not being able to leave home, restaurants have changed their operations towards deliveries and the consumption of what is considered essential has been prioritized (Ward, 2020). All these changes have been sudden, they have substantially and dramatically changed the lives of people around the world in recent months, as well as their consumption habits.

Even though the vaccine has been developed to combat Covid-19, recent studies carried out are limited since the Covid-19 pandemic is still in force on the global scene, so the future health and economic implications are unknown (Meixner and Katt, 2020), in addition, the appearance of new strains of the virus could extend the pandemic and therefore continue to affect society, the economy and its consumption habits. The restrictive measures will continue for the moment, everything else is uncertain, there is concern about what will happen and this makes people cautious about the cost of the products they consume (Borsellino, Ahmadi Kaliji and Schimmenti, 2020). In times of crisis, people are unwilling to pay more for expensive or premium products and shift their preferences towards cheaper products when they spend the money. Although, as things return to normal, people return to their previous consumption habits (Bohlen et al., 2010).

In this context, the research questions posed by this study are the following: What attributes influence the willingness to pay for organic food in consumers between 20 and 60 years of age in the city of Dublin-Ireland? What are the most valued attributes by consumers? Were there positive changes towards the consumption of organic food as a result of the pandemic? What are the preferred places for consumers to buy organic products?

This dissertation aims to research the willingness to pay (WTP) of organic food by the inhabitants of the city of Dublin, with the aim of understanding and identifying the factors that motivate or restrict people to pay for them, for this attributes of organic products to determine their weight in WTP, in addition to knowing how the pandemic caused by the virus *severe acute respiratory syndrome coronavirus 2* (SARS-CoV-2), better known by the name of its disease (Covid -19) (World Health Organization, 2021), has influenced the consumption habits of the inhabitants towards organic products.

On the other hand, no research evidence was found that addresses the willingness to pay for organic products in this Ireland, despite the significant growth in its consumption and that the government has programs to encourage organic cultivation in Ireland. By understanding these purchasing behaviours, better public policy, marketing, commercial and logistics strategies

can be applied to influence new consumers to further develop the domestic market and boost rural economies.

The methodology applied in this quantitative research, based on the method of Conjoint Analysis by Framework Based on Ratings, a survey was carried out among Dublin inhabitants in an age range between 20 and 60 years, this survey collects sociodemographic data, and consumption habits usual. The Excel 365 regression tool was used to analyse the preferred attributes in organic foods, according to the results of the data collected in the CA by frame based on ratings. On the other hand, 3 Tesco stores were visited in the city of Dublin with the aim of identifying organic food by retail stores and complementing the research.

This dissertation is structured as follows: chapter two presents the review of the literature, the background of the research on sociodemographic factors of consumers, attributes of organic products, concepts related to willingness to pay. Chapter three raises the research question, objectives and hypotheses and chapter 4 the applied methodology. Then in chapter 5 the analysis of the data found is presented, the findings, analysis and discussion will be presented and finally in chapter 6 the conclusions and limitations of this work.

2. Literature Review

This chapter of the dissertation is divided into 5 parts, the first part describes the concept and theories of willingness to pay, where the work of Lancaster is highlighted, in the second part it is explained that they are organic foods and the benefits that motivate to consumers according to demographic characteristics and also describes some studies carried out in Ireland about organic foods, the third part describes the attributes of organic foods considered in this study and the gaps identified in the reviewed papers, the fourth part describes the barriers that consumers have to purchase organic products and finally the segmentation of organic food is described. This chapter aims to describe the concepts and theories that support the selection of variables for the measurement of willingness to pay and support the selection of variables and attributes for the questionnaire made to the respondents.

2.1. Willingness to pay (WTP)

Before addressing the concept of WTP, it is important to know how consumers make their choices. Consumers' choices for certain options, their preferences for one good or another are studied by the economic theory of consumption. These preferences are faced with different budgetary barriers that condition the quantity and options of goods that consumers can acquire, therefore, the study of these preferences seeks to identify the combination of goods that maximizes utility to the consumer (Perloff, 2012) (Gravelle & Rees, 2004) (Mankiw, 2016).

The literature shows us two avenues to analyse consumer choices, the traditional perspective, and the Lancaster perspective. Both approaches seek to understand how consumers choose products according to their preferences and barriers, however, the difference between these two avenues lies in the motivation for the choice. The traditional perspective suggests that all goods offered to the consumer are equal, and quality attributes are not considered in this line of thought, since goods are direct objects of utility. On the other hand, Lancaster suggests that the consumer optimizes the utility of goods based on their characteristics, that is, attributes, not the good itself, for which their purchasing decisions are based on the attributes of the goods that maximize their utility. In addition, this new approach differs from the previous ones since the price is considered as an additional attribute of the product (Gravelle & Rees, 2004) (Mankiw, 2016) (Lancaster, 1966).

The WTP is the highest price that consumers are willing to pay for a certain good or service. This concept is widely used in marketing to establish the price strategy of the products and predict the demand for the products placed in the market. In addition, it is very important since it allows to know the interests of potential consumers related to the price and the characteristics

or attributes of the products (Nandi et al., 2017). In this sense, consumers are willing to pay a higher price for organic products, the more the characteristics and attributes that they perceive in organic food will depend on.

There are two different avenues to determine the WTP defined as maximum price and reserve price and it is very important to differentiate these concepts to carry out the measurements and analyses correctly, however, despite the fact that they are different concepts and measurements, the reaction of consumers reflected in the stimuli or attributes in the product configuration is the same, so the most important thing is to determine the behaviour in the consumer's choices (Breidert, 2005). For this dissertation, we will work with the WTP concept based on the maximum price, which is defined as the sum of the reference price perceived by the consumer and the value of the differentiation, where the reference price is the price of the product of the competition in which the consumer sees it as their best option and the differentiation value are the differences perceived by the consumer between the product of interest and the reference product (Nagle and Holden, 2002).

There is a wide variety of methods in the literature to measure consumer willingness to pay; These include the Contingent Valuation Method (CVM), Conjoint analysis, and experimental auctions (Breidert, Hahsler and Reutterer, 2006). For this study, the CA methodology will be used, with which a great variety of investigations and studies have been carried out in different countries that cover the WTP for organic products using this method. In the Conjoint analysis, indirect surveys are carried out to consumers, classifying different products, and giving them to choose according to different scales of values that are represented in attributes or characteristics, and from those preferences and variations of the attributes, the WTP, the attributes have different possible combinations with their respective levels in order to stimulate consumer decision (Breidert, Hahsler and Reutterer, 2006). Nutritional properties, awareness for the environment focused on the use of pesticides and animal welfare, quality and price will be the attributes to be used to measure consumer stimuli towards WTP. On the other hand, Covid-19 has influenced consumers to consume more organic food (Cachero-Martínez, 2020), which is why it aims to evaluate how this change in behaviour has been in the inhabitants of Dublin.

2.2. Organic foods

2.2.1. Concepts and context

The literature review was conducted to search and understand the most important attributes of the Organic food. For a product to be considered organic, it must meet certain standards,

among these are the non-use of chemical fertilizers in products of plant origin, using defence systems and pesticides of the plant (Popa. Et al., 2018) and the no use of antibiotics in animals, must also respect the soil and its nutrients. Products that meet these requirements are certified by organizations and give the accreditation seals, which influence the purchase decision of consumers (Cachero-Martínez, 2020).

Research carried out in different countries shows the current interest in knowing more about the demand and the market for organic products, these studies have shown the factors that influence the willingness to pay a higher price for organic food (Nandi et al., 2017). The increase in the global market for organic products generates many business opportunities, therefore, it is important to know what motivates consumers to buy these foods (Molinillo, Vidal-Branco and Japutra, 2020). The demand for organic food grows its demand every year, and it is being coupled to the conventional consumption patterns in people (Chauke and Duh, 2019); The organic food market in Europe is still developing and growing, but it does not mean that it is small, after the United States, it represents the second largest organic food market in the world, and the opportunities in this market in the future are optimistic. (DOVLEAC, 2016). Germany leads the market for organic products in Europe, followed by France, the United Kingdom and Italy, these 4 countries in total have around 66% of sales in Europe (DOVLEAC, 2016), it seems that the strengthening of these markets will be It is due to agricultural policies and government support in the countries, which promotes variety in the offer to consumers (Nasir and Karakaya, 2014). It is estimated that by 2030 in Europe 25% of farmland will be used for organic crops, all this promoted by EU policies and strategies (European Commission, 2021). To increase the consumption and production of organic food, production and logistics costs must be reduced to transfer those costs to final consumers, and this is reflected in lower prices (Nandi et al., 2017).

What was previously a niche market has been moving to the main retail markets and large supermarket chains, expanding the assortment, and offering organic food at competitive prices (DOVLEAC, 2016). Studies reveal and confirm this information, where supermarkets and specialized stores are the preferred places to buy their organic products (Camarena, Romero and Camarena, 2020).

2.2.2. Organic food in Ireland

The amount of studies and research carried out in the field of organic food in Ireland is limited and not updated in recent years, studies date back more than 20 years, in which it is shown that Ireland at that time had underdevelopment in production of organic foods, it is highlighted that the most consumed organic foods were fruits and vegetables represented by 60% of the

market in 1993 and it was evident that the demand would continue to grow but limited by their high prices (Roddy, Cowan and Hutchinson, 1994), in addition, they show us the behaviour and perception towards organic foods of consumers at that time, the potential of future consumption was predicted (Roddy, Cowan and Hutchinson, 1996) (Ní Ghraith, Cowan and Daly, 2004). O'Donovan (2002) carries out a study in which he evaluates environmental, health and animal welfare factors in the behaviour of organic meat consumers in Ireland and shows that the main barrier perceived by consumers is high prices compared to conventional products and Henchion, O'Reilly and Cowan (2003) also suggested the growth of the organic food market in the country and further indicated that future government regulations and the participation of retailers could accelerate growth.

2.2.3. Motivations for WTP for organic food

The current interest of society in nutrition, public health, animal welfare, rejects conventional methods of food production that deteriorate the environment (McFadden and Huffman, 2017) (Hung, Fu and Yuan, 2019). Likewise, the production of organic food is friendlier with the environment and the health of people and the planet, however, it is more expensive than the production of conventional food, taking this extra cost to the final consumer (Muhammad, Fathelrahman and Ullah, 2015), but this does not limit consumers who are willing to pay a higher price for healthy products with higher nutritional value (Nandi et al., 2017).

The WTP towards organic products is related to several factors, linked to the sociodemographic characteristics of consumers, and the utilitarian attitudes of the product. The demographic profiles of consumers are among the most studied in relation to the willingness to pay for organic food; age, nationality, income, education, and household size (Muhammad, Fathelrahman and Ullah, 2015), (Ha, Shakur and Pham Do, 2019), (Gustavsen and Hegnes, 2020).

In a study conducted in the United Arab Emirates, health awareness is increasing as people age, this influences ageing people to consume organic products to take advantage of their healthy qualities (Muhammad, Fathelrahman and Ullah, 2015). Even the personality of consumers, a factor not mentioned by Muhammad, Fathelrahman and Ullah (2015), has an impact on the willingness to pay for organic products, where people who are more open to new experiences are willing to pay more money for these products (Gustavsen and Hegnes, 2020). However, Ha, Shakur and Pham Do (2019) disagree on the income factor since they found that higher income in people does not contribute to the development of the organic products market.

On the other hand, research shows utilitarian motivations such as environmental awareness, health awareness (Nandi et al., 2017), and utilitarian attitudes due to the perception of nutritional value and ecological well-being (Lee and Yun, 2015). The findings in some studies differ and contrast, Suciu, Ferrari and Trevisan (2018), Hung, Fu and Yuan (2019), Leâ-Anh and Nguyenâ-To (2020) indicate that there is no weighty relationship that relates environmental awareness with the willingness to pay higher prices compared to conventional or non-organic products.

On the other hand, it was shown that there is a strong relationship between willingness to pay and health benefits (Camarena, Romero and Camarena, 2020). Hughner et al (2007) examined what motivates people to consume organic products and found that people find these products healthier, better tasting, ecological, with greater food safety, better animal welfare, support for the local economy, healthy and more fashionable. The combination of demographic variables with utilitarian attitudes broadens the spectrum of results in the studies carried out. For example, health awareness and concern for the environment are the main factors that determine the willingness to buy organic products in pregnant women, motivated by the well-being and future of their babies (Konuk, 2018), however, this behaviour changes when they are not pregnant, women show greater concern than men for nutrition, health and the environment, but despite this, men are willing to pay higher prices for organic products than women (Ureña, Bernabéu and Olmeda, 2008). Another evidence of this is the age segmentation of consumers, in this case, concern for the environment and social awareness motivates millennials (People born between 1981 and 1996) to consume organic products encouraging them to pay for them (Molinillo, Vidal-Branco and Japutra, 2020).

2.3. Attributes that influence the WTP for organic foods

The attributes of a product can make the difference between the decision to buy or not to buy a product, because it is important to know the relevant attributes that consumers prefer and that add value for them, in order to be successful in the production and marketing of these (MEAS, et al., 2015). If the consumer does not know what organic products are and their attributes, they will not buy them, it is important to make them known to generate an impact on the purchase decision (Leâ-Anh and Nguyenâ-To, 2020).

Consumers build their preferences according to the configuration of attributes that organic foods possess. Therefore, Table 1 summarizes the review of the literature addressed to know the attributes that different authors have studied from 2005 to 2020. It should be noted that the attribute of price is present in all the studies carried out, essential to know the WTP. In

addition, the attributes of awareness for health, care for the environment, nutrition, quality are addressed in much of this research, attributes which were selected to carry out this dissertation.

Table 1. Bibliographic review attributes of organic foods

Year	Title	Authors	Country	Attributes
2005	Consumers' willingness to pay for organic food	Krystallis and Chryssohoidis (2005)	Greece	country of origin-nutritional value -Environmental benefits-raw materials used to produce it-The characteristic taste of the productcertification of its production methods-
2007	Women, men and organic food: differences in their attitudes and willingness to pay. A Spanish case study	Ureña, Bernabeu and Olmeda (2007)	Spain	Health consciousness-Environmental concern-Labelling-Artifitial Additives-No Chemicals-Natural Products-Garden Products
2012	Consumer knowledge, consumption, and willingness to pay for organic tomatoes	Mesias, et al. (2018)	Spain	Organic label-Respectful with environment-Norms of production-The EU terms "bio" and "organic"-Traditional farming systems-Dietetic, functional, whole food-GMO free-Only fresh foodstuffs-No synthetic chemicals
2013	Consumer willingness to pay for organic fresh milk in Taiwan	Huang and Lee (2013)	Taiwan	Local label-Brand-Environmental Concerns-Food safety Concerns-Knowledge of Organic Food
2015	Consumer Heterogeneity in the Willingness to Pay for Local and Organic Food	HASSELBACH and ROOSEN (2015)	Germany	Local label-Brand
2015	Factors Affecting Consumers' Willingness to Pay for Certified Organic Food Products in United Arab Emirates	Muhammad, Fathelrahman and Tasbih (2015)	United Arab Emirates	No Attributes
2016	Effects of quality claims on willingness to pay for organic food	Cagalj, Haas and Morawetz	Croatia	Health consciousness-Environmental concern
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	Anastasiou, et al. (2017)	Greece	Labelling
2017	Factors Influencing Consumers' Willingness to Pay for Organic Fruits and Vegetables: Empirical Evidence from a Consumer Survey in India	Nandi, et al. (2017)	India	Health consciousness-Environmental concern-nutritional value
2017	Willingness-to-pay for natural, organic, and conventional foods: The effects of information and meaningful labels	McFadden and Huffman (2017)	USA	Labelling
2018	Antecedents of pregnant women's purchase intentions and willingness to pay a premium for organic food	Konuk (2018)	Turkey	Health consciousness-Environmental concern-Customer innovativeness
2018	Attitudes and Willingness to Pay More for Organic Foods by Tennessee Consumers	Bhavsar, et al. (2018)	USA	Environmental Concerns-Food safety Concerns-Knowledge of Organic Food
2019	Organic food in Hermosillo, Sonora: Willing to pay and consumer preferences	Camarena-Gómez, Romero-Valenzuela and Camarena-Gómez (2020)	Mexico	Health benefits-Nutrition-Free of chemicals-Natural-Help the environment-Quality-labelsl of certification

2019	Consumers' attitudes and willingness to pay for organic eggs	Güney and Giraldo	Turkey	Production method-Brand-Color
2019	Effect of utilitarian and hedonic values on consumer willingness to buy and to pay for organic olive oil in Tunisia	Ghali (2019)	Tunisia	Utilitarian value-Hedonic value-
2019	Organic wheat products and consumer choice: a market segmentation analysis	Drugova, Curtis and Akhundjanov (2019)	USA	Health consciousness-Environmental concern-nutritional value
2020	Understanding the drivers of organic foods purchasing of millennials: Evidence from Brazil and Spain	Molinillo, Vidal-Branco and Japutra (2020)	Brazil and Spain	Food safety concern-Natural content-Environmental concern-Sensorial appeal-Health consciousness-Social consciousness-Price premium

Source: Own elaboration

This study aims to know the willingness to pay for organic food in the city of Dublin; Understanding the changes in consumer habits towards organic products in recent years, driven by harnessing their perceived benefits and attributes, it is worth conducting this research in Ireland. Many researchers have enriched the literature by making valuable contributions in this area, however, they present gaps and limitations that this research seeks to fill.

These gaps and limitations can be segmented in the following way, the first are demographic, the results of the studies obtained in the studies carried out cannot be generalized and taken as decisive for all countries, for example Ha, Shakur and Pham Do (2019) study the willingness to pay for organic vegetables in Hanoi, Vietnam, a country with very different from Ireland in socio-economic conditions; On the other hand, we have limitations due to the categories of products studied, the responses of consumers vary according to the type of product being investigated, and in the field of organic foods, the types of products are very varied, in this other example Ghali (2020) carried out a specific study on organic olive oil, for its part this research aims to know the attributes that motivate Dublin consumers to pay for onion and organic milk, and as the last category of gaps identified we have the method of Research used, Huang and Lee (2014) who investigated the willingness to pay for organic milk in Taiwan, used a direct survey method so the results may be biased due to the shortcomings of the method. All these gaps and limitations are valuable reasons for conducting this research with consumers in Dublin, and the literature on organ food consumption habits in Ireland is scarce and not recent (Roddy, Cowan and Hutchinson, 1996) (Ní Ghraith, Cowan and Daly, 2004) (Henchion, O'Reilly and Cowan, 2002).

2.3.1. Organic labels and certifications for superior quality

Organic product certification labels are widely used in various countries to certify the authenticity of organic products; The USA can certify organic products if the producers

comply with the regulations of the agriculture department of that country, but with some gaps in concepts such as what is considered a natural product and what is not (Kuchler, F. et al, 2020), Europe for its part It has a label that certifies organic products, which makes it easier for the consumer to identify these organic products in the market, it is a label that gives confidence to the consumer since it can only be used on products that have been certified (European Commission, 2021). Ireland is no exception, it also has its own organization that certifies organic products, the IOA (Irish Organic Association) seal has been in force since 1982, this organization, like the European Commission, also has a series of steps and requirements that organic food products must comply to certify their products (Irish Organic Association, 2021).

Source: (Irish Organic Association, 2021), ofgorganic (2021), organictrust (2021)

The production of organic food must be certified to generate trust and transparency in the consumer, in addition to being monitored by rigorous standards (Popa. Et al., 2018); Studies carried out show that consumers are concerned about certifications in organic food since it generates confidence and security in what they are buying and positively drives purchase intention (Prentice, Chen and Wang, 2019), and they are willing to pay more for the labels and certifications affixed to the product (MEAS, et al., 2015). On the other hand, the process of these certifications is expensive and limits the income of farmers who do not have resources to sell their organic products (ATANASOAIE, 2012).

Studies agree that the identification of premium organic products generates confidence in consumers, making them willing to pay more money for them (Prentice, Chen and Wang, 2019), additionally, they also relate these products to better quality, well-being, better taste, and health (Ghali, 2020). Logos that certify the authenticity of organic products positively affect consumers' willingness to pay for organic products, identifying products with labels within the premium category encourages people to pay more money for these products (Anastasiou et al., 2017). In the same way, a study in Taiwan also supports the importance of the organic products logo in people's purchasing decisions, where consumers relate organic milk as a healthy and environmentally friendly product, increasing purchase availability. towards this product (Huang and Lee, 2014). Including quality assessment in the model improves the predictive effect on purchase intention. (Prentice, Chen and Wang, 2019).

2.3.2. Organic food – Healthier

Health concern in consumers is above other factors such as environmental awareness when buying organic food (Leâ-Anh and Nguyenâ-To, 2020) (Rizzo, et al., 2020), without, However, the health benefits generated by organic products present disagreement that has to be studied in greater depth, the willingness to pay for organic products is marked by the confidence and subjectivity of the consumer towards the benefits that they consider are positive in these products, however, it goes against the benefits studied by other studies (Suciu, Ferrari and Trevisan, 2018).

The attributes and health benefits of organic foods are exalted, noting that they do not lose nutritional value in fruits and vegetables thanks to their short shelf life (Popa. Et al., 2018), the consumption of organic foods can significantly reduce the risk of developing cancer and testimonies are evidenced by people who have had benefits in their health when they have included organic products in their diet (SMITH, 2021). However, the literature has gaps and shortcomings regarding this attribute since the number of studies comparing the nutritional benefits of organic and conventional foods is limited and contradictory, some studies show higher nutritional values in some organic products compared to conventional products (Popa. et al., 2018) and antioxidants beneficial to health (SMITH, 2021), but they do not clarify in which foods specifically; Suciu, Ferrari and Trevisan (2018) point out that the difference in nutritional values is insignificant compared to conventional products and on the other hand (Ponder and Hallmann (2020) evidence that some foods such as conventional raspberries have vitamin C values a lot higher than organic raspberries.

Even though health benefits are a questionable topic and disagreement in the literature, the perception of consumers towards health is positive, which positively affects their purchase decision towards organic products, regardless of whether they are more expensive (Rizzo, et al., 2020), (Suciu, Ferrari and Trevisan, 2018). For example, in this specific case, consumers perceive organic eggs to be healthier, more nutritious, and better tasting, compared to non-organic eggs, and the production of these eggs is better viewed regarding animal welfare and ethical dilemmas. (Güney and Giraldo, 2020), in addition, consumers who have a high level of health awareness will prefer organic foods over conventional ones (Shin and Mattila, 2019) and these benefits could be attributed to subjective well-being in people who consume organic food with greater awareness of health (Apaolaza. et al., 2015), but it is still a matter of subjective perception of consumers, to know the nutritional properties of each product would need more studies.

2.3.3. Environmental awareness

In recent years, people have shown more concern about environmental sustainability and with the Covid-19 pandemic, this concern has accelerated (Cachero-Martínez, 2020). Authors defend that organic agriculture systems tend to be more friendly and respectful with the environment than traditional agriculture (Popa. Et al., 2018), (Hung, Fu and Yuan, 2019), however, Suciu, Ferrari and Trevisan (2018) maintains that they do not generate greater benefits since the carbon footprints generated in the production of organic food are negligible compared to conventional products.

Cachero-Martínez (2020) shows in his research that higher levels of concern for the environment do positively influence the WTP for organic products, since the consumer is willing to be part of the solution to the environmental problem, but another group of research agree that concern for the environment is not a determining motive in the consumer of organic food, and can be an insignificant attribute, since if there is no environmental awareness this will not affect the decision or behaviour of purchase (Hung, Fu and Yuan, 2019), particularly in developing countries, who do not see an immediate effect on their well-being (Leâ-Anh and Nguyenâ-To, 2020).

2.3.4. Prices

Different authors have investigated the influence of price as one more attribute in goods and services, price is one of the main barriers that consumers have, and it is important to establish information campaigns so that consumers understand the reason for higher prices in organic food (ATANASOAIE, 2012).

Consumers with higher incomes underestimate the price difference with respect to non-organic foods, and people who frequently consume organic foods may have negative considerations towards low prices, considering them of low quality (Aschemann and Zielke, 2017). People with higher incomes are more willing to pay the price of organic products than people with lower incomes, which is a fact that price has a decisive influence on purchasing decisions (Bhavsar. Et al., 2018). However, the knowledge of organic products about how they are produced can positively influence the high prices in the WTP, making consumers more aware of organic production. (Mesias, et al., 2015), in addition the certification seals also stimulate consumers to pay higher prices (Huang and Lee, 2014)

Exalting the attributes of organic food is a strategy that can be applied so that consumers increase their willingness to pay, consumers who know how to differentiate the attributes of

conventional and organic foods put the price in second place and highlight the benefits that organic food offers offer (Rödiger, Plaßmann and Hamm, 2016), for millennials this knowledge generates greater social and health awareness, which positively influences the willingness to pay even and the products have overpricing (Molinillo, Vidal-Branco, and Japutra, 2020)

Despite the fact that organic foods are more expensive, if we compare them with non-organic products (Prentice, Chen and Wang, 2019), organic foods are more valued by consumers, and they point out that the price does not affect their purchase intention (Suciu, Ferrari and Trevisan, 2018), as long as the consumer perceives the cost-benefit relationship that these foods have (Galindo, De Morais Watanabe and Alfinito, 2019), (Rizzo, et al., 2020), this agrees with Prentice, Chen and Wang (2019) who also suggest that consumers with low wages will continue to prefer to buy organic food despite their low income.

2.4. WTP barriers

Another group of studies identify and expose the barriers that affect the willingness to pay and the consumption of organic food. Non-availability, high prices, lack of variety and irregular supply are barriers that consumers must face to obtain organic food (Nandi et al., 2017) (Suciu, Ferrari and Trevisan, 2018). People may be willing to pay for organic food, yet not everyone has the resources to buy it (Ha, Shakur, and Pham Do, 2019). Another important barrier to the consumption of organic food, in the case of producing countries, most of the production is exported to rich countries, where these products are better paid than in the domestic market (Ureña, Bernabéu and Olmeda, 2008). In countries where incomes are low, it is difficult for people to pay for products in premium categories (Ghali, 2020). On the other hand, consumers tend to confuse functional products, not necessarily organic, with organic products (Annunziata and Vecchio, 2016). The knowledge or ignorance that people have about organic products affects the willingness to pay, despite having stamps or logos that identify them (Mesías et al., 2012). In addition, studies also show that local products (non-organic foods) have preference over organic products in the willingness to pay, these products have direct competition with organic products, increasing barriers to organic products (Hasselbach and Roosen, 2015), (Denver. et al., 2015).

2.5. Organic food segmentation for products

Within consumers of organic products, segmentation by product type is also a determining factor that influences purchasing decisions (Drugova, Curtis and Akhundjanov, 2020).

Although organic products are beneficial for health, consumers are not willing to pay a higher price for organic wine (Jorge, López-Valeiras and González-Sánchez, 2020). However, organic products such as fruits and vegetables are the foods for which people are most willing to pay high prices (Ureña, Bernabéu and Olmeda, 2008). In addition, innovative organic products also increase the willingness to pay for these products (Konuk, 2018).

Consumers perceive organic fruits and vegetables in a different way than other organic products, thus being the category of organic products with the highest percentage of purchase and willingness to pay (Krystallis and Chryssohoidis, 2005) (Nandi et al., 2017). The reason why the product to be evaluated in the survey carried out in this dissertation is the inion and one of the products of daily consumption in Ireland (Milk).

3. Research Question

What attributes influence the willingness to pay for organic food in consumers between 20 and 60 years of age in the city of Dublin-Ireland?

3.1. Objective

Determine the attributes that affect the willingness to pay for organic food and evaluate if the Covid-19 pandemic has generated changes in purchasing habits in consumers between 20 and 60 years of age in the city of Dublin-Ireland

3.1.1. Sub- Objectives

- Identify the attributes that influence the willingness to pay for organic food in consumers between 20 and 60 years of age in the city of Dublin-Ireland.

- Evaluate the attributes that influence the willingness to pay for organic food in consumers between 20 and 60 years of age in the city of Dublin-Ireland.

- Analyse the attributes that influence the willingness to pay for organic food in consumers between 20 and 60 years of age in the city of Dublin-Ireland.

- Present the attributes that influence the willingness to pay for organic food in consumers between 20 and 60 years of age in the city of Dublin-Ireland.

- Assess whether the Covid-19 pandemic has generated changes in the willingness to pay for organic food in consumers between 20 and 60 years of age in the city of Dublin-Ireland.

- Identify the usual places to buy organic food for consumers between 20 and 60 years of age in the city of Dublin-Ireland.

Based on the literature review, the mayor factors that motivate consumers of organic food are the positive perception they have towards the sustainability of the environment and the nutritional benefits, benefits that are linked to a greater health awareness and well-being; The price of organic food can be an attribute that influences the purchase choice of organic food according to socio-demographic aspects and on the other hand, the Covid-19 pandemic has

generated greater concern for environmental awareness and health awareness, therefore, the following hypotheses are raised:

H0. Environmental awareness positively affects the willingness to pay organic food.

H1. Health awareness positively affects the willingness to buy organic food.

H2. The higher price of organic food compared to conventional food does not influence the purchase willingness of organic food.

H3. The Covid-19 pandemic has caused people to consume more organic foods in their diet.

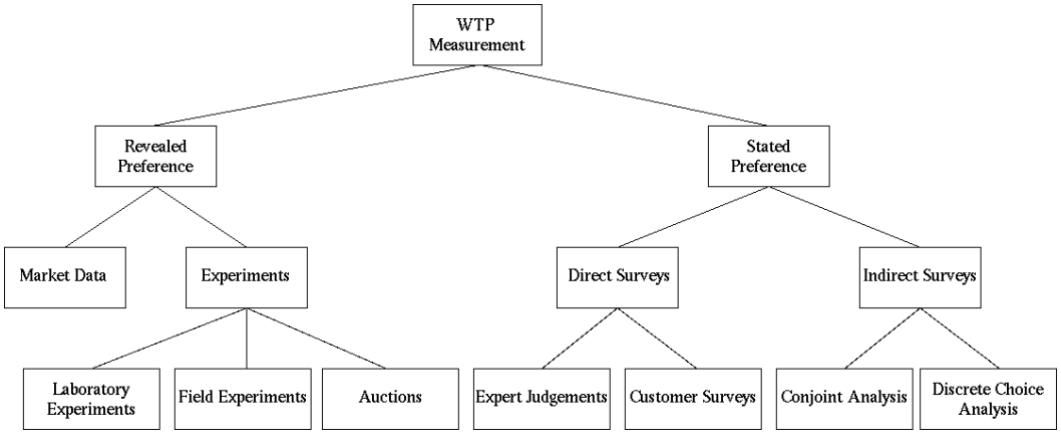
4. Methodology

This chapter will discuss the research methodology and its rationale. In addition, other methodologies will be presented to know the advantages and disadvantages of each one to determine the willingness to pay. According to this, in the first part of this chapter the techniques for measuring the willingness to pay will be covered, in the second part the CA method chosen to be developed in this dissertation will be explained, in the third part the design, construction and application of the survey according to the attributes and stimuli for the respondents, this section also describes the ethical considerations and finally the field visit carried out in 3 stores in the city of Dublin will be discussed.

4.1. Techniques for measuring willingness to pay

The methodological design selected to carry out this dissertation has been *Conjoint Analysis by Ratings-Based Framework*, in this section the different techniques for measuring willingness to pay existing in the literature will be explained and compared and the reasons why This method has been selected for this research, as well as its limitations.

Figure 1 Techniques for measuring willingness to pay



Source. Breidert, Hahsler and Reutterer (2006)

To identify consumer preferences and find out how much they are willing to pay, the literature offers two sets of non-market valuation techniques, the first set of techniques is called revealed preference based on market data and real or simulated prices; The declared preferences is the second set of techniques, in which there are direct and indirect surveys (Green and Srinivasan, 1990) (Breidert, Hahsler and Reutterer, 2006) (Carmona-Torres and Calatrava-Requena, 2006).

Revealed preference models establish that consumers make it known that they prefer based on the analysis of their purchasing habits (Green and Srinivasan, 1990), in which market data or data generated in experiments are used. The experiments can be in the field and/or in the laboratory, such as auctions (Breidert, Hahsler and Reutterer, 2006). In the real world, when a method must be chosen to evaluate the willingness to pay, one must deal with limitations of time, access to information or money (Breidert, Hahsler and Reutterer, 2006), for this reason, these techniques were discarded For this research, there was no market data and also the development of experiments with people would take a long time, so this research would not be feasible in the established times.

In the declared preference model, these techniques aim to know people's consumption habits by asking them directly how much they are willing to pay for a product; preference techniques can be divided into direct surveys and indirect surveys (Green and Srinivasan, 1990).

Direct surveys directly ask experts in some areas and consumers the price they are willing to pay, which can give biased results when asked directly, since the prestige effect may tend to exaggerate the price or on the contrary may be very low because consumers seek to keep prices low; on the other hand, indirect surveys use product classification processes through attributes and levels, aiming to estimate willingness to pay (Breidert, Hahsler and Reutterer, 2006).

Conjoint analysis and discrete choice analysis are the most important methods in indirect survey techniques, most of these techniques effectively estimate the WTP for respondents (Breidert, Hahsler & Reutterer, 2006). As mentioned above, to measure the willingness to pay according to the attributes of organic products we will use the *Conjoint Analysis* by *Ratings-Based Framework* technique, which measures the stimulus of multiple attributes in the evaluated products (Green and Srinivasan, 1990).

4.2. Conjoint Analysis

Conjoint analysis allows consumers to select the product they like best from a deck of options or assign scores to product attributes, with the goal of quantifying consumer trade-offs for product attributes. With the data collected in the CA, it is possible to make estimates of the price of the products and make calculations for the willingness to pay (Jenkins and Maber, 2020). The Conjoint analysis is based on additive compensation, the sum of the values corresponding to the attributes is calculated as follows (Jenkins and Maber, 2020) (Martinez, 2005):

$$\boldsymbol{y = \beta 0 + \beta 1 x + \beta 2 x \ldots + \varepsilon}$$

Where:

y = Dependent variable (Product Utility)

x = Independent variable

$\beta 0$ = Represents the value of **'y'** when $x1$, $x2$, … xk = 0

$\beta 1, \beta 2, \ldots \beta k$ = Parameter associated with variables $x1$, $x2$, … xk = 0

ε = Associated error

The conjoint analysis technique has been widely used by researchers in different studies to calculate the willingness to pay of different products, Jagath, Ranasingha and Ratnayake (2020) used this technique to calculate the WTP of fruits according to their sensory attributes, Meyerding, et al. (2018) examined the preferences towards meat steaks in Germany, Weinrich and Elshiewy. (2019) examined the preferences of consumers in Germany, France and Netherand for meat substitutes based on micro-algae and Xu and Zeng, (2014) evaluated the impact of education on the willingness to pay for domestic wine and imported wine in Chinese consumers.

In the Conjoint analysis, two avenues are presented, the *Choice-Based Framework* and *Ratings-Based Framework;* In the *Choice-Based Framework*, participants select the product they like the most within a set of alternatives and in the *Ratings-Based Framework*, consumers classify the products of the survey assigned ratings according to the established attributes, they are similar techniques, but they have marked differences (Jenkins and Maber, 2020).

When we compare these two alternatives in CA techniques, we see that *Choice-Based Framework* is the most successful option since it better simulates the real behavior in the market (Breidert, Hahsler and Reutterer, 2006), however, the experimental design is more complicated than *Ratings-Based Framework* and requires specialized software that increases difficulty and cost (Jenkins and Maber, 2020). This is one more reason why the method selected for this research is Conjoint Analysis by *Ratings-Based Framework.*

Like all the techniques used to measure the willingness to pay, Conjoint analysis by Ratings-Based Framework also have limitations, the first is the deficiency in simulating the real consumer buying behavior, the second corresponds to the observed choice behavior and Finally, the fact of including in the price for the measurement of the willingness to pay, the price of the products has no influence on the utility of the same, so the compensatory additive

model is violated and there are no options in favor or in against other products on the market which could give imprecise results (Breidert, Hahsler and Reutterer, 2006).

Table 2 Comparative evaluation of competing methods for measuring WTP

	Market data	Experiments	Direct Surveys	Indirect Surveys	
				Conjoint Analysis	Discrete Choice Analysis (CBC)
Cost effective	+/-	--	++	+	+
Time efficient	+/-	--	++	+	+
Flexibility to include new price/product combinations	--	++	+/-	++	++
Validity of estimations	++	+/-	--	+	+
Real purchase behavior	++	+/-	--	--	--
Observed choice behavior	++	+	--	--	+
Individual level estimations	+/-	+/-	++	++	+
+ (++) = (strong) advantage - (--) = (strong) disadvantage +/- = no clear advantage or disadvantage (depending on data-collection and/or estimation method)					

Source. Breidert, Hahsler and Reutterer (2006)

4.3. Designing the survey

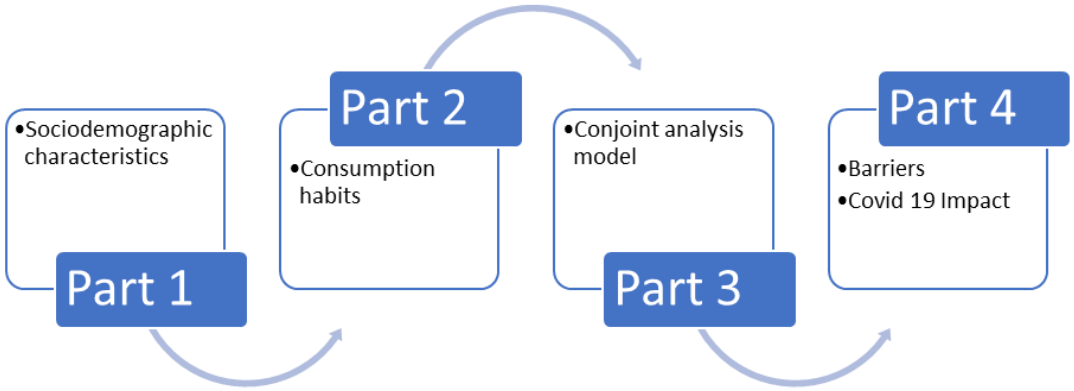
4.3.1. Survey

For the development of this dissertation, demographic factors were considered conforming by age, salary, academic level and gender, which allows to detail the purchase habits of organic food, in addition these demographic characteristics are connected to explain the relationship of attributes and price, to quantify Respondents' evaluations to calculate willingness to pay. The software used for data processing was Excel 365.

The questionnaire consists of 14 questions and is structured in 4 sections (Appendix 1), the first section aims to know the sociodemographic characteristics (Gender, Age, Level of studies, Monthly income), in the second section aims to know the purchasing habits (Food organic foods that you consume frequently and where you buy them) with structured multiple-choice questions with single and multiple answers. In the third section, the factors are evaluated to measure the stimuli of the attributes and the price of the products (Onion and Organic Milk) that are explained in the section (Attributes and levels) and (Stimulus Set Construction), the participants are asked to classify from 1 to 5 their willingness to pay for each product (With attributes and levels) to carry out the linear regression with these data to

calculate the willingness to pay; The fourth section investigates the barriers to buying organic food and the impact of the Covid-19 pandemic on their consumption habits.

Figure 2 Survey desing



Source. Own elaboration.

It was explored in the literature which are the organic foods that people consume the most and it was identified that vegetables and fruits are the most appreciated (Camarena-Gómez, Romero-Valenzuela, and Camarena-Gómez, 2020), therefore, it was decided evaluate a vegetable in this case the onion, on the other hand, another of the attributes highlighted in the literature is animal welfare, because this attribute was evaluated in milk (Cachero-Martínez, 2020).

For the definition of the price of the two products to be valued in the survey (Organic Onions and Organic Milk), 4 Tesco and Ldls retail stores in the city of Dublin were visited to establish the initial prices for the assessment in the survey (€ 0 , 99 per liter in organic cow's milk and € 1.32 per kilo of organic onion), from these values the price of these products was increased with variations in the attributes, to know which attributes stimulate the participants in their choices (Nandi et al., 2017) (Green and Srinivasan, 1990).

4.3.2. Attributes and Levels

The attributes for this research were chosen according to their relevance, as identified in the literature review, as motivators or influencers for consumers of organic food. The attributes chosen for organic milk were antibiotic use in animals (Represents awareness of animal welfare), awareness of the environment, quality, and nutrient level (Represents awareness of health).

Table 3 Attributes Organic Milk

Organic Milk				
Price (1 Liter)	Usage of antibiotics for animals	Enviromentally friendly	Quality	Level of nutrients
0,99	Average level of antibiotics	Ecofriendly	Average Quality	High level of nutrients
1,09	Low level of antibiotics	No Ecofriedly	Product Premium	Low level of nutrients
1,19				

Source. Own elaboration.

The attributes chosen for the organic onion were chemical pesticide use, environmental awareness, quality, and nutrient level (Represents health awareness).

Table 4 Attributes Organic Onion

Organic Onion				
Price (1 Kilo)	Chemical usage - No artificial pesticides	Enviromentally friendly	Quality	Level of nutrients
1,32	Average level of chemicals	Ecofriendly	Average Quality	High level of nutrients
1,42	Low level of Chemicals	No Ecofriedly	Product Premium	Low level of nutrients
1,52				

Source. Own elaboration.

4.3.3. Stimulus Set Construction

For the factorial design of each product, 6 options were built for each product, with which it was sought to stimulate the participants to classify each product according to the given option, a written explanation of each attribute to be evaluated was used to explain its characteristics and also In the survey, photographs of milk and onions were used to visually stimulate the participants and make the environment more realistic.

The full factorial design is built with the combination of all the attributes and levels of each product, for organic milk it would be 3 * 2 * 2 * 2 * 2 and for organic onion 3 * 2 * 2 * 2 * 2, a total of 48 possible combinations for each product to evaluate; Since there are too many options to classify, it is not practical to offer so many options to evaluate to the survey participants, therefore 6 combinations were arbitrarily chosen for each scenario to be the convenient survey, for this I ensure that the profiles contain the levels by equal or in proportion

to maintain the reliability of the tool (Jagath, Ranasingha and Ratnayake, 2020) (Green and Srinivasan, 1990).

Table 5 Organic milk attributes combination

Produt 1	Organic Milk	0,99	Low level of antibiotics	Eco-friendly	Average Quality	Low nutrients
Produt 2	Organic Milk	1,09	Average level of antibiotics	No Eco-friedly	Premium Quality	High nutrients
Produt 3	Organic Milk	1,19	Low level of antibiotics	Eco-friendly	Average Quality	Low nutrients
Produt 4	Organic Milk	0,99	Average level of antibiotics	No Eco-friedly	Premium Quality	High nutrients
Produt 5	Organic Milk	1,09	Low level of antibiotics	Eco-friendly	Average Quality	Low nutrients
Produt 6	Organic Milk	1,19	Average level of antibiotics	No Eco-friedly	Premium Quality	High nutrients

Source. Own elaboration.

Table 6 Factorial design organic milk

	Organic Milk										
Product	Price_Milk _0,99	Price_Milk_ 1,09	Price_Milk _1,19	Low_Antibio tics	Average_Ant ibiotics	Ecofriendly _milk	No_Ecofrie ndly_milk	Average_Qu ality_Milk	Premiun_Qu ality_Milk	Low_Nutrie nts_Milk	High_Nutrie nts_Milk
Produt 1	1	0	0	1	0	1	0	1	0	1	0
Produt 2	0	1	0	0	1	0	1	0	1	0	1
Produt 3	0	0	1	1	0	1	0	1	0	1	0
Produt 4	1	0	0	0	1	0	1	0	1	0	1
Produt 5	0	1	0	1	0	1	0	1	0	1	0
Produt 6	0	0	1	0	1	0	1	0	1	0	1

Source. Own elaboration.

Table 7 Organic onion attributes combination

Produt 1	Organic Onion	1,32	NO Chemical Pesticides	Eco-friendly	Average Quality	Low nutrients
Produt 2	Organic Onion	1,42	Use Chemical Pesticides	No Eco-friedly	Product Premium	High nutrients
Produt 3	Organic Onion	1,52	NO Chemical Pesticides	Eco-friendly	Average Quality	Low nutrients
Produt 4	Organic Onion	1,32	Use Chemical Pesticides	No Eco-friedly	Product Premium	High nutrients
Produt 5	Organic Onion	1,42	NO Chemical Pesticides	Eco-friendly	Average Quality	Low nutrients
Produt 6	Organic Onion	1,52	Use Chemical Pesticides	No Eco-friedly	Product Premium	High nutrients

Source. Own elaboration.

Table 8 Factorial design organic onion

Product	Price_Onion _1,32	Price_Onion _1,42	Price_Onion _1,52	No_Chemical Pesticides	Use_Chemica l Pesticides	Ecofriendly_ Onion	No_Ecofrien dly_Onion	Average_Qu ality_Onion	Premiun_Qu ality_Onion	Low_Nutrie nts_Onion	High_Nutrie nts_Onion
Produt 1	1	0	0	1	0	1	0	1	0	1	0
Produt 2	0	1	0	0	1	0	1	0	1	0	1
Produt 3	0	0	1	1	0	1	0	1	0	1	0
Produt 4	1	0	0	0	1	0	1	0	1	0	1
Produt 5	0	1	0	1	0	1	0	1	0	1	0
Produt 6	0	0	1	0	1	0	1	0	1	0	1

Source. Own elaboration.

4.3.4. Reliability and Validity Analysis of the Measurement Scale

A Cronbach's alpha of 0.75 was obtained in the validation of the instrument, which according to the established range is considered a reliable instrument.

4.3.5. Survey application

Data collection was carried out in June 2021. Before conducting the survey, all participants were informed of the purpose of this research and their approval and consent were requested for the analysis of the data collected.

A pilot of the survey was carried out with 7 people, as a result of the feedback obtained by the participants of the pilot, it was decided to add the variable of nutritional value as a reference that organic foods are perceived as healthy by consumers. The nutritional benefits of organic foods were investigated in the existing literature (Popa. Et al., 2018) (SMITH, 2021) and it was added as an attribute to be evaluated in the classification that the respondents made in the products that were valued in the survey (Onion and organic milk).

In this research, it is focused on organic food consumers between 20 and 60 years of age. The sampling technique used is non-probabilistic, so the participants were chosen at random at convenience; On the other hand, the participants who were surveyed and who do not consume organic food were allowed to answer the survey except for some questions that only applied to people who do regularly consume organic food.

In this dissertation a quantitative design was used, data collection was carried out with the application of a survey to 112 People. The participants were contacted to carry out the survey by different means, the online link of the survey was shared to the emails of the NCI students inviting them to participate anonymously in the survey and the survey was also shared on the social network WhatsApp, who in turn shared the survey with several of their contacts. The data was collected in online questionnaires through the Google Form platform, in participants living in the city of Dublin. Seven questionnaires corresponding to the people who carried out the pilot of the survey were eliminated.

The data collected is stored on the Google Form web page, where only I have access, in addition there is a backup of the data in the OneDrive cloud to my account and on my laptop, where only I have access to the information collected.

4.3.6. Ethical considerations

In the application of the survey, each candidate was informed about the objective of the study according to the guidelines of the GDPR regulation; The participants answered the survey voluntarily and had the option to withdraw at any time only by closing the web page, so that before conducting the survey, the consent of all the candidates was requested, all the information collected in it was treated confidentially and anonymously. no personal identification was collected from the participants. The data collected was stored on a computer with restricted access and will be stored for the time established by NCI, after this time the information will be safely destroyed. All the information on ethical considerations is reflected in the survey conducted (Appendix 1).

4.4. Visit to retail stores

An observation visit was conducted at 3 Tesco retail stores located in Dun Laoghaire, Park Pointe and Bray. The objective of this visit was to identify the distribution and presentation of organic food in stores, as well as to identify the variety and categories of organic food sold in these stores. No interviews or questions were conducted with the store personnel, it was only observation. In addition, a photographic record of visits and organic food was left.

During the visit I made a photographic record of the observed products, which were classified according to the category defined by the store that was visited, in addition a count of the items found was kept, a record of the brands and the food certificates was made. organic that these had. After the information was collected, it was classified and ordered to present in the findings section. After collecting the information, it was classified and ordered to present in the findings section.

5. Findings, análisis and discusión

This chapter will show the results, after analysing the data collected in the survey (Appendix 1) and what was observed in the visit to the 3 Tesco stores in the city of Dublin. The first part of this chapter corresponds to the descriptive analysis of the demographic and socioeconomic aspects of the first section of the survey, in the second part it will be shown in an analysis of the current consumption habits of the respondents, the third part corresponds to the analysis of Ratings-Based Framework applied to onion and organic milk and in the last section the results of the visits made to the 3 Tesco stores will be exposed, where the categories of organic foods offered are identified and they have their own perception of what is found in the market in terms of organic food.

Applying Conjoint Analysis by Ratings-Based Framework, this dissertation examines the attributes that influence willingness to pay for organic food; Estimates of the attributes that most influence the willingness to pay were obtained for organic onion and organic milk. On the other hand, this research also analyses the influence of demographic and socioeconomic variables on the willingness to pay for these products, as well as a survey of habitual consumption habits and those surveyed.

5.1. Descriptive Analisys

The results of the survey carried out in this research are analysed based on a total sample of (n = 105 participants) as well as their demographic segmentation and their assessment of organic foods established in the survey. These criteria are based on the review of previous research that relates the consumption habits of the inhabitants related to organic food.

5.1.1. Demographic and socio-economic aspects

Based on the total number of people surveyed (N = 105), regarding gender, the female population corresponds to 61%, on the other hand, regarding age, 52.4% of the surveyed population is in the range between 20 and 30 years, whose average corresponds to 33.71 years (32.7 years for women and 35.2 years for men), followed by people between 41 and 50 years with 20% and people between 31 and 40 years with 19%. It is important to note that most respondents are under 40 years of age (71%). Regarding the level of studies of the participants, most of the participants have postgraduate studies (54.3%), followed by those surveyed with undergraduate studies (38.1%) and that of the participants who finished high school (7, 6%), also in this characteristic of the population it is important to highlight that 92% of the respondents have university studies (Women 92% and men 93%, very similar values.

Additionally, the highest salary range of those surveyed is below € 1,800 (39%), followed by ranges that oscillate between € 1,800 - € 2,500 (22%), between € 2,500 - € 3,500 (20%) and higher than € 3,500 (19%). It is appropriate to note that all income ranges have very similar values, which also maintain these proportions when compared with the individual data by gender.

Table 9 Descriptive statics of sample (N=105)

Characteristics	*Frecuency %*	*Mean*	*SD*
Gender			
Female	61,0%		
Male	39,0%		
Age		33,71	10,48
20-30	52,4%		
31-40	19,0%		
41-50	20,0%		
51-60	8,6%		
Level of studies			
High school	7,6%		
Postgraduate	54,3%		
Undergraduate	38,1%		
Income monthly (Euros €)			
Under 1800	39,0%		
1800-2500	21,9%		
2500-3500	20,0%		
above 3500	19,0%		

Source: own elaboration based on the survey.

5.2. Consumer habits

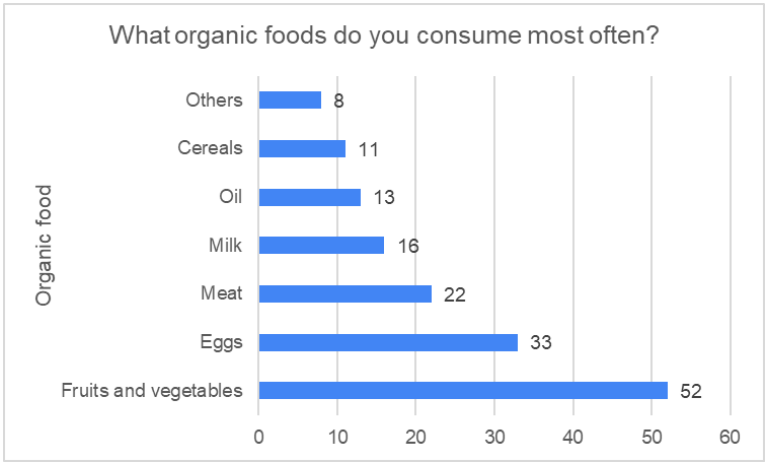
This dissertation seeks to know the attributes and consumption habits that determine the purchase disposition for organic products (Onions and organic milk in this case) using the CA methodology, however, it is pertinent to explore some a priori consumption habits with the characteristics demographic surveyed, and then continue with the development of the CA method.

Regarding the current consumption of organic foods, 52.4% of those surveyed frequently consume these foods in their diet, so this section will detail the relevant demographic data according to this percentage (52.4%), of of which 60% of those people are women. Furthermore, 53.7% of the men surveyed and 51.6% of the women surveyed consume organic food frequently; In relation to the age of consumers, 43.6% are in the age range between 20 and 30 years, 70.9% are under 40 years old and as a data to highlight from the total of

respondents between 31 and 40 years (19% of the sample), 75% consume organic food. Regarding the level of studies, 56.4% have postgraduate studies. On the other hand, regarding income level, 40% of organic food consumers have a maximum income of € 1,800.

Regarding the organic products that they consume frequently, 94.5% of the total of the participants indicated that the preferred organic food in their diet is fruits and vegetables, which supports the findings of Camarena, Romero and Camarena (2020) in the city Hermosillo, Mexico, Mesias, et al., (2015) in Spain, however they are contrary to the findings made by Krystallis and Chryssohoidis (2005) since in his study these products are the least appreciated. It is important to clarify that this question the participants were allowed to choose several response options (Appendix 1), so in the order of organic foods with the highest preference it is followed by eggs with 33 choices, meat with 22 choices and milk with 16 choices.

Figure 3 *Favourite organic foods*



Source: own elaboration based on the survey.

Table 10 *What organic foods do you consume often?*

What organic foods do you consume most often?	*N=55 Total*	*n=33 Male*	*n=22 Female*
Fruits and vegetables	52	21	31
Eggs	33	15	18
Meat	22	12	10
Milk	16	7	9
Oil	13	4	9
Cereals	11	7	4
Others	8	7	1

Source: own elaboration based on the survey.

On the other hand, of the total of respondents who consume organic food, 65.5% buy their products in retail supermarkets, followed by small market retail with 18.2% and specialized stores with 14.5% (Only women buy in stores 100% specialized) what agrees with what Camarena, Romero and Camarena (2020) shows in their research. As a highlight, 77.3% of men and 57.6% of women buy their organic food in retail supermarkets.

Regarding changes of habit as a result of the Covid 19 pandemic, 70.5% maintained their consumption habits the same, which disagrees with Borsellino, Ahmadi Kaliji and Schimmenti (2020) where their results show that if there is a significant change towards healthier products; similar values for men (75.6%) and women (67.2), 18.1 % stated that they had increased the consumption of organic food and 6.7% decreased their consumption.

However, for people who increased their consumption of organic food were asked what caused them to change, 52.6% indicated that health awareness was the main reason, followed by sustainability for the environment (21.1%), which agrees with the results of Borsellino, Ahmadi Kaliji and Schimmenti (2020) and Meixner and Katt (2020). On the other hand, regarding the reasons that made the consumption of organic food decline are Irregularity of supply (28.6%), Lack of variety (28.6%), Non availability (28.6%) and High prices (14, 3%), however, this data is not significant because only 7 respondents answered it.

The last preamble question to the questions to develop the CA was whether the participants would consider consuming organic food because of the Covid 19 pandemic, however the data is not significant for the analysis since only 5 people answered the question and they all answered "No". This is one of the limitations in this section, since the amount of data collected in questions 12, 13 and 14 of the survey (Appendix 1), the information is not enough to carry out any analysis or interpretation.

Table 11 *Consumer habits questions*

Do you consume organic foods frequently in your diet?	*N=105* *%*	*n=41* *Male %*	*n=64* *Female %*
Yes	52,4%	53,7%	51,6%
No	47,6%	46,3%	48,4%

Where do you normally buy your organic food? *****	*N=55* *%*	*n=33* *Male %*	*n=22* *Female %*
Retail supermarkets	65,5%	77,3%	57,6%
Small markets retail	18,2%	18,2%	18,2%
Specialized stores	14,5%	0,0%	24,2%
Restaurants	1,8%	4,5%	0,0%

Do you think that as a result of the Covid-19 virus pandemic, your consumption of organic food has changed?	*N=105* %	*n=41* Male %	*n=64* Female %
Stayed the same	70,5%	75,6%	67,2%
It has increased	18,1%	9,8%	23,4%
It has declined	6,7%	7,3%	6,3%
I have never eaten organic food	4,8%	7,3%	3,1%

What do you think has influenced your increased consumption of organic foods? ******	*N=19* %	*n=4* Male %	*n=15* Female %
Health awareness	52,6%	25,0%	60,0%
Sustainability for the environment	21,1%	25,0%	20,0%
Support local economy	15,8%	50,0%	6,7%
Better taste	10,5%	0,0%	13,3%

Why has your purchasing of organic foods declined? *******		*N=7* *%*
Irregularity of supply	28,6%	
Lack of variety	28,6%	
Non availability	28,6%	
High prices	14,3%	

Do you consider starting to consume organic food, after having lived through the Covid-19 pandemic? ***	N=7 %
No	100%

Source: own elaboration based on the survey.

Regarding to the questions in part 1 and part 2 of the survey (Appendix 1), the findings of this dissertation confirm that the sociodemographic characteristics of the surveyed population influence consumption habits, the results show that women have greater preference for organic food than men, which supports the research of Ureña, Bernabéu and Olmeda (2008), other results also suggest that people between 30 and 40 years old show more interest towards the consumption of organic food regardless of income monthly of the people surveyed. Fruits and vegetables are the foods most desired by respondents, eggs, meats, and milk remain in their range of preferences.

According to the questions related to consumer habits, respondents buy their organic products mainly in retail stores, even though the supply of these stores has grown in recent years, the supply of organic products continues to be scarce and limited, confirming the results of Nandi et al. (2017). The stores specialized in organic food surpass the variety and offer of the retail stores, however, the number of these places is limited, and they do not cover as many sectors of the city as the retail stores, this could explain why more than 65% of the Respondents make their purchases of organic products in these retail stores. The results also suggest that women, being more interested in organic food, prefer to buy in specialized stores, on the other hand, men only limit themselves to what retail stores offer.

Although different investigations suggest changes in consumption habits as a result of the Covid-19 pandemic, where consumers look for healthier and more environmentally friendly foods (Borsellino, Ahmadi Kaliji and Schimmenti, 2020) the results of this the dissertation goes on a different avenue, the respondents do not show any interest in changing their habits to consume more organic food, which denies Hypothesis 3. The average of the surveyed inhabitants is 33 years old, which could be a limitation in this sense, it would be worth exploring the changes in habits in people over 40 years of age to determine if older people have changed their consumption habits towards healthier food. On the other hand, those surveyed who did have a change in their consumption habits towards organic foods show interest in the health benefits attributed to these foods. Regarding the barriers, the data collected cannot be analysed since the number of respondents for this question was insufficient.

5.3. Linear regression – Conjoint Analysis

To estimate the relationship of the attributes, least squares regression was used to perform the utility model on the data. For this, the Excel 365 regression tool was used. The Conjoint analysis models are based on a weighted additive utility model (WADD) (Jenkins and Maber, 2020) (Martinez, 2005), which establishes the utility or desire that you have towards a product, for our model the formula can be expressed as follows:

Utility model for milk:

$$\text{Product Utility} = \beta 0 + \beta 1\ X\ Price_{Milk_{0,99}} + \beta 2\ X\ Low_{Antibiotics} + \varepsilon$$

$$\text{Product Utility} = 2{,}83 + (\ 0{,}22)\ X\ Price_{Milk_{0,99}} + (-0{,}00317)\ X\ Low_{Antibiotics} + \varepsilon$$

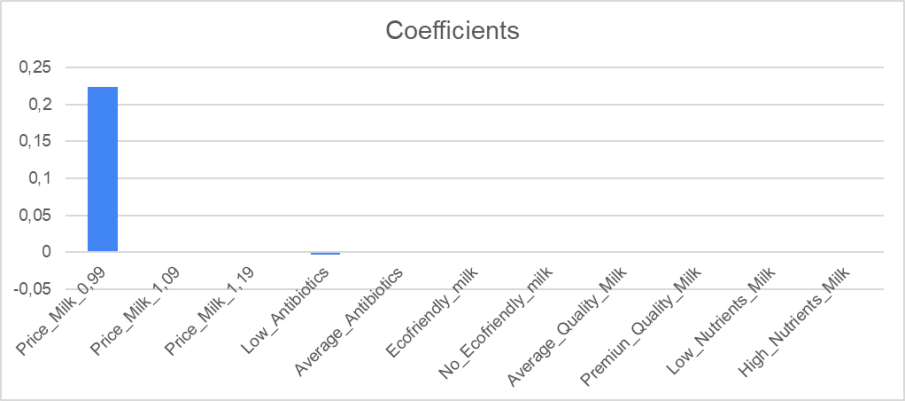
Table 12 *Organic milk linear regression*

	Coefficients	*Standard error*	*T statistic*	*P-Value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	2,83015873	0,104470748	27,0904418	1,5056E-107	2,625003173	3,035314287	2,625003173	3,035314287
Price_Milk_0,99	0,22380952	0,127950013	1,749195001	0,080747377	-0,027453693	0,47507274	-0,027453693	0,47507274
Price_Milk_1,09	0	0	65535	#¡NUM!	0	0	0	0
Price_Milk_1,19	7,1312E-16	0,127950013	5,57339E-15	#¡NUM!	-0,251263217	0,251263217	-0,251263217	0,251263217
Low_Antibiotics	-0,0031746	0,104470748	-0,030387484	0,975767712	-0,20833016	0,201980954	-0,20833016	0,201980954
Average_Antibiotics	0	0	65535	#¡NUM!	0	0	0	0
Ecofriendly_milk	0	0	65535	#¡NUM!	0	0	0	0
No_Ecofriendly_milk	0	0	65535	#¡NUM!	0	0	0	0
Average_Quality_Milk	0	0	65535	#¡NUM!	0	0	0	0
Premiun_Quality_Milk	0	0	65535	#¡NUM!	0	0	0	0
Low_Nutrients_Milk	0	0	65535	#¡NUM!	0	0	0	0
High_Nutrients_Milk	0	0	65535	#¡NUM!	0	0	0	0

Source: own elaboration based on the survey.

When examining the data of the respondents corresponding to the attributes of milk, the attribute that most influences WTP is Price_Milk_0.99, followed by the Low_Antibiotics attribute. According to this model, the other attributes evaluated in milk do not have a major impact. We see that, although respondents show some concern about the level of antibiotics in milk, they prefer the lowest price over all attributes. The coefficients value 0 of the other attributes indicate that they have no influence on the willingness to pay in organic milk, however, these values cannot be considered since the model presents limitations that will be indicated later.

Figure 4 *Organic milk coefficients*



Source: own elaboration based on the survey.

Utility model for onion:

$$\text{Product Utility} = \beta 0 + \beta 1\ X\ Price_{Onion1,32} + \beta 2\ X\ Price_{Onion1,52} + \beta 3\ X\ No_{Chemical}Pesticides + \varepsilon$$

$$\text{Product Utility} = 2{,}17 + (\,0{,}28)Price_{Onion1,32} + (-0{,}16)Price_{Onion1,52} + (0{,}77)No_{Chemical}Pesticides + \varepsilon$$

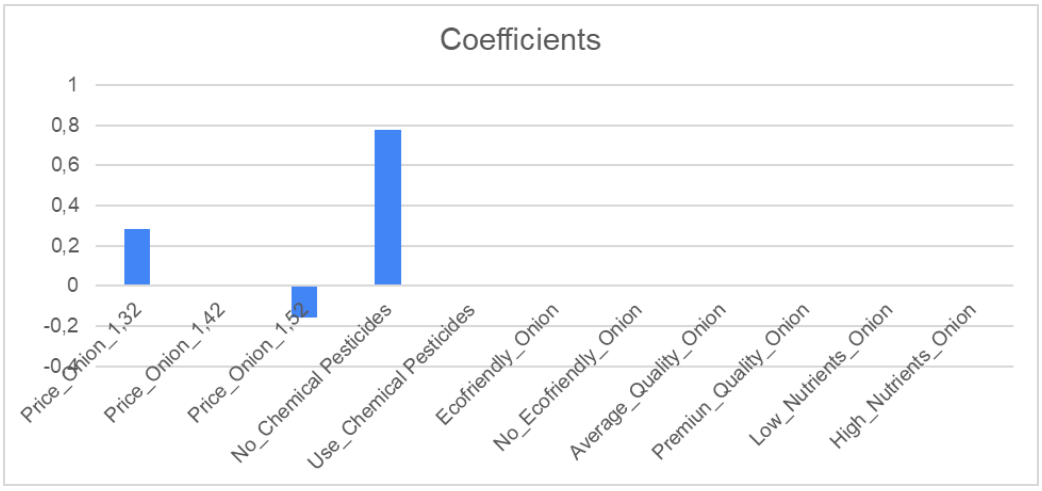
Table 13 *Organic Onion linear regression*

	Coefficients	*Standard error*	*T statistic*	*P-Value*	*Lower 95%*	*Upper 95%*	*Lower 95,0%*	*Upper 95,0%*
Intercept	2,168253968	0,091053848	23,81287573	9,94261E-90	1,989445994	2,347061943	1,989445994	2,347061943
Price_Onion_1,32	0,280952381	0,111517733	2,519351607	0,012004982	0,061958231	0,499946531	0,061958231	0,499946531
Price_Onion_1,42	0	0	65535	#¡NUM!	0	0	0	0
Price_Onion_1,52	-0,157142857	0,111517733	-1,409128865	#¡NUM!	-0,376137007	0,061851293	-0,376137007	0,061851293
No_Chemical Pesticides	0,777777778	0,091053848	8,541953958	1,00375E-16	0,598969803	0,956585752	0,598969803	0,956585752
Use_Chemical Pesticides	0	0	65535	#¡NUM!	0	0	0	0
Ecofriendly_Onion	0	0	65535	#¡NUM!	0	0	0	0
No_Ecofriendly_Onion	0	0	65535	#¡NUM!	0	0	0	0
Average_Quality_Onion	0	0	65535	#¡NUM!	0	0	0	0
Premiun_Quality_Onion	0	0	65535	#¡NUM!	0	0	0	0
Low_Nutrients_Onion	0	0	65535	#¡NUM!	0	0	0	0
High_Nutrients_Onion	0	0	65535	#¡NUM!	0	0	0	0

Source: own elaboration based on the survey.

In the case of onion, the attribute that most influences WTP is No_Chemical_Pesticide, followed by the Price_Onion_1,32 attribute. According to this model, the other attributes evaluated in milk do not have a major impact. Although respondents are concerned about the levels of pesticidal chemicals in onions, low prices are still high on their purchasing priorities. Like the calculation of the coefficient for organic milk, many of the coefficients have zero value, which suggests that they do not influence the willingness to pay, however, as mentioned above, this will be clarified in the limitations of the model later.

Figure 5 *Organic onion coefficients*

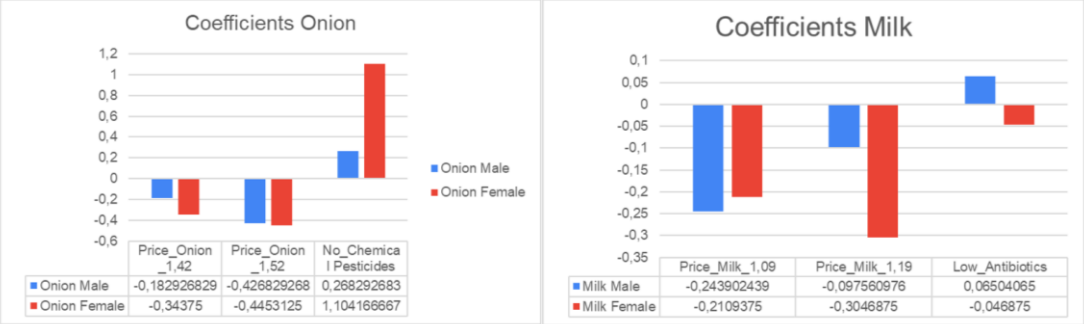


Source: own elaboration based on the survey.

For both models, a strong influence of price is seen as the predominant attribute, which suggests that for the respondents the attribute of the lowest price is more important over the other attributes, suggesting that price is the main barrier to acquiring these foods, these results are consistent with Aschemann and Zielke (2017) research.

In both models there are similar limitations, considering the number of combinations of attributes evaluated for both milk and onion as the most influential limitation. The complete combination of attributes for each item is 48 combinations, however, in the models only 6 combinations were considered, making many of the coefficient values zero (0) as can be seen in table 12 and table 13 On the other hand, the respondents were not informed of the current sale price in the market for conventional onion and milk, so the perception of prices in the models could be conditioned by the subjectivity of the respondent.

Figure 6 Comparison of male-female coefficients



Source: own elaboration based on the survey.

When we segregate the information collected in the genders, this shows us that, for the organic onion, the most appreciated attribute for the female gender is No_Chemical_Pesticides, in a much higher proportion than for the male gender, on the other hand, the male gender is more interested by the attribute of the Price_Onion_1.42 than the female gender. For both cases the attributes are important, but in one with a higher proportion than in the other.

In the case of organic milk, the most important attribute for the respondents is Low_Antibiotics as mentioned above, however, for the male gender it stands out more than for the female gender.

The results show that the most appreciated feature is price, the attribute that most influences the choice of respondents is the lowest price, which denies Hypothesis 0 and Hypothesis 2. However, Hypothesis 1, regarding the health awareness is supported by the onion attribute classification, in which No_Chemical_Pesticide has a high influence on the WTP. In the case of milk, it is practically the most desired attribute and shows that respondents have no interest in the other attributes, which contradicts the results of part 2 of the survey on consumption habits. However, it is important to clarify that these results are due to the limitations already mentioned above. On the other hand, in the rating of attributes of organic onion, the results

vary slightly, the most precious attribute is still the lowest price, but we see that the attribute of not one of pesticidal chemicals has a high influence on the WTP.

5.4. Field findings

In visits to the Tesco retail supermarket, the following were observed. (Look at Appendix 2); In the visit to the 3 Tesco stores in the city of Dublin, 21 categories of organic foods that are for sale were evidenced, within these categories 84 different references, 32 brands and 4 different labels were observed (IOA, Organic Trust, Organic wine certified, and OF & G) (Appendix 1). Despite showing these labels, it was observed that 49% of the products displayed on the shelves did not have any label that certifies organic food, this could generate some distrust in consumers according to Anastasiou et al. (2017)). On the other hand, there could also be confusion and mistrust with organic chicken and eggs, since these are labeled as free range, but have the colors that Tesco Brand uses for organic foods.

Table 14 Summary of organic food categories Tesco

Categories	Items	Brands	Labels
21	84	32	4

Source: own elaboration based on the survey.

On the other hand, 28% of the foods observed correspond to the Fruit and Veg category, which agrees with the response of the participants in question number 8 of the survey (Appendix 1), where it is evidenced that this category of products It is the most consumed and agrees with the results in the studies carried out by (Camarena, Romero and Camarena, 2020) (Mesias, et al., 2015). It is interesting to note that the Baby food category corresponds to 10.5% of the items observed, which could be related to the results of Konuk (2018) in pregnant women who are more willing to pay for organic food when they are in this state.

Regarding the distribution of organic foods in the shelves, it was observed that they are located in the sections according to the type of product, which allows consumers to compare organic foods with conventional foods, this apparently has evolved that in previous studies it is described that organic foods were all located in a single point of the store regardless of their category (Roddy, Cowan and Hutchinson, 1994), on the other hand this disagrees with what was found by Camarena, Romero and Camarena (2020) in Hermosillo, Mexico where in the stores visited the distribution was different, locating organic products in specialized sections. Tesco Brand leads the percentage of items sold with 28%, compared to the other brands. However, the total number of items sold in this chain of stores is still limited for consumers, which supports the answer in question 12 of the survey (Appendix 1) where respondents state

that the lack of variety is one of the reasons why they have decreased the consumption of organic food. Regarding the limitations of the visit, only what was observed in the shelve was recorded, so if any product was out of stock on the day of the visit, it was not considered in the statistics.

6. Conclusions

The demand for organic food has been growing in recent years, although it is still small, it is no longer a niche market and is projected to continue growing thanks to sustainability policies in the future. This study has focused on identifying the attributes that most influence the willingness to pay for organic food in Dubliners, defined in the research question.

The results of this dissertation show that 52.4% of those surveyed consume organic food regularly in their diet, represented for the most part by women, who consume the most organic food in their diet. Responding to the research question, the most valued attribute that most influences the WTP is the price, showing slight variations according to the type of product. For organic onion the attribute that most influences are price and the level of pesticidal chemicals and for organic milk the one that most influences are price and the level of antibiotics.

Among the most appreciated organic foods are fruits and vegetables, these lead the preference of consumers, followed by eggs, meat, and milk; all of these mostly fresh foods, a reason that could suggest that fresh organic foods are more appreciated than organic foods with more manufacturing processes such as canned foods, this fits with what was found in the visit to Tesco stores, which shows the great variety of organic fruits and vegetables on offer. On the other hand, the Covid-19 pandemic has not generated any change that positively stimulates or increases the consumption of organic food. These results suggest that despite the benefits that organic foods offer, consumers go for the cheapest option. It is worth wondering if people clearly know all the benefits that these foods offer, aiming to have marketing campaigns that motivate their consumption.

In accordance with what was mentioned in the previous chapters, the limitations found can be found in the population sample, however, the main limitation is given by the number of attribute combinations configured for the qualified products.

It is recommended for future research to show as a reference point the real reference price of the product to qualify, so that the respondent knows in advance what the price is and, in this way, to know with better precision if he is willing to pay more, compare this price of reference to the price of conventional products so that they can know the real price difference. Also, show the price of conventional foods to have a better price comparison. On the other hand, it is also interesting to explore the attributes that consumers prefer the most in processed organic food, different from the fresh food category.

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Appendix 1 Alfonso ´ s Dissertation Survey

Hello, I am conducting this survey as part of my postgraduate research dissertation in my Master of Science in International Business, that aims to assess the WILLINGNESS TO PAY FOR ORGANIC FOOD. I would like to invite you to take part and answer the questionnaire, which have 12 questions and it will only take you a maximum of 5 min to complete. Your time and involvement in this research study is much appreciated. Please take the time to read the information carefully and decide whether or not to take this survey.

The information you provide will be treated with strict confidentiality. The survey does not require any personal identifiable information, or any information which can be traced to you. Your responses are anonymous. The data from this study be held on a computer where only i have access. A report of the study will be produced which will be submitted to the National College of Ireland, but the the individual participants will no be identifiable.

Participation in this research study is voluntary. You can discontinue by closing this page. However, if you do go through with this survey questionnaire, you will be unable to withdraw as the data analysis process may have begun. If you have any concerns or need clarification at any point, feel free to reach out to me by simply sending me an email on x20126034@studnet.ncirl.ie or alfonsomiguel069@gmail.com., or you can contact my thesis supervisor too michelle.ahern@ncirl.ie.

By completing this survey, you are consenting to participate in this study and to allow your survey responses to be analysed. If you do not wish to participate you can close this page.

Thank you!

Warm regards

Alfonso Gonzalez

National College of Ireland Master of Science in International Business

1. Gender *

- [ ] Male
- [ ] Female
- [ ] Other

2. Age *

- [ ] 20-30
- [ ] 31-40
- [ ] 41-50
- [ ] 51-60

3. Are you currently living in Ireland? *

- [ ] Yes
- [ ] No

4. Level of studies *

- [ ] High school
- [ ] Undergraduate
- [ ] Postgraduate

5. Income monthly (Euros €) *

- [ ] Under 1800
- [ ] 1800-2500
- [ ] 2500-3500
- [ ] above 3500

Do you consume organic foods frequently in your diet?

6. 1. *

- [ ] Yes
- [ ] No

Where do you normally buy your organic food?

7. 2. *

- [ ] Retail supermarkets
- [ ] Specialized stores
- [ ] Wholesale stores
- [ ] Restaurants
- [ ] Small markets retail

What organic foods do you consume most often?

8. 3. *

Selecciona todas las opciones que correspondan.

- [ ] Fruits and vegetables
- [ ] Meat
- [ ] Milk
- [ ] Eggs
- [ ] Cereals
- [ ] Oils
- [ ] Others

Rating preferences for Organic Milk

Select from 1 to 5 your willingness to pay, according to the combination of attributes or characteristics assigned to Organic Milk.

- Price for 1 liter of organic milk (Euros)* (0,99 - Average price in the main retail stores in the city of Dublin)
- Use of antibiotics
- Environmentally friendly (Sustainability for the environment)
- Quality
- Level of nutrients

Where 1 is your least willingness to pay and 5 is your greatest willingness to pay.

If you are answering the survey from your cell phone or tablet, please put them horizontally.

9. Organic Milk *

	1	2	3	4	5
Price 0,99€ / Low level of antibiotics / Eco-friendly / Average Quality / Low nutrients	◯	◯	◯	◯	◯
Price 1,09€ / Average level of antibiotics / No Eco-friendly / Premium Quality / High nutrients	◯	◯	◯	◯	◯
Price 1,19€ / Low level of antibiotics / Eco-friendly / Average Quality / Low nutrients	◯	◯	◯	◯	◯
Price 0,99€ / Average level of antibiotics / No Eco-friendly / Premium Quality / High nutrients	◯	◯	◯	◯	◯
Price 1,09€ / Low level of antibiotics / Eco-friendly / Average Quality / Low nutrients	◯	◯	◯	◯	◯
Price 1,19€ / Average level of antibiotics / No Eco-friendly / Premium Quality / High nutrients	◯	◯	◯	◯	◯

Rating preferences for Organic Onions

Select from 1 to 5 your willingness to pay, according to the combination of attributes or characteristics assigned to Organic Onions.

- Price for i kilo of organic onions (Euros)* (1,32 - Average price in the main retail stores in the city of Dublin)
- Use of chemical pesticides
- Environmentally friendly (Sustainability for the environment)
- Quality
- Level of nutrients

Where 1 is your least willingness to pay and 5 is your greatest willingness to pay.

If you are answering the survey from your cell phone or tablet, please put them horizontally.

10. Organic Onions *

	1	2	3	4	5
Price 1,32€ / NO Chemical Pesticides / Eco-friendly / Average Quality / Low nutrients	◯	◯	◯	◯	◯
Price 1,42€ / Use Chemical Pesticides / No Eco-friendly / Premium Quality / High nutrients	◯	◯	◯	◯	◯
Price 1,52€ / NO Chemical Pesticides / Eco-friendly / Average Quality / Low nutrients	◯	◯	◯	◯	◯
Price 1,32€ / Use Chemical Pesticides / No Eco-friendly / Premium Quality / High nutrients	◯	◯	◯	◯	◯
Price 1,42€ / NO Chemical Pesticides / Eco-friendly / Average Quality / Low nutrients	◯	◯	◯	◯	◯
Price 1,52€ / Use Chemical Pesticides / No Eco-friendly / Premium Quality / High nutrients	◯	◯	◯	◯	◯

Do you think that as a result of the Covid-19 virus pandemic, your consumption of organic food has changed?

11. 4. *

- ◯ It has increased
- ◯ Stayed the same
- ◯ It has declined
- ◯ I have never eaten organic food

12. 5. *

- ◯ Same taste that conventional food
- ◯ Non availability
- ◯ High prices
- ◯ Lack of variety
- ◯ Irregularity of supply

What do you think has influenced your increased consumption of organic foods?

13. 6. *

Marca solo un óvalo.

- ◯ Sustainability for the environment
- ◯ Health awareness
- ◯ Better animal welfare
- ◯ Better taste
- ◯ Support local economy

Do you consider starting to consume organic food, after having lived through the Covid-19 pandemic?

14. 7. *

- ◯ Yes
- ◯ No

Appendix 2 Organic food visits stores

Categories	Products			Brands	Organic Labels
Fruits and Veg	Potatoes	Biscuits	Smoked Salmon	Tesco	IOA
Dairy Products	Mushrooms	Chips	Greeh yogurt	Total Organic	Organic Trust
Wines	Carrots	Oats bars	Yogurt Natural	Vinuva	Organic wine cerified
Canned	Yogurt Strawberry	Rice cakes	Tomato passata	Cono sur	OF & G
Oils	Yogurt Natural low fat	Puff pops	Chopped Tomatoes	Glenisk	
Dressings	Yogurt Natural Whole milk	Mini puffs	Onion	Organic for us	
Meat	Bananas	Muesli	Red onion	Life Force	
Vegetable Milk	Butternut Squash	Kiwi	Tea	Frontier foods	
Chocolate	Baby potatoes	Courgettes	Eggs	Moy Park	
Juices	White wine	Coconut	Sugar	Flahavans	
Crop plants	Red wine	Mango	Coconut flour	Provamel	
Baby food	Low fat milk	Baby tomatoes	Wholemeal flour	Alpro	
Tea	Whole milk	Red peppers	Pasta	Green & Blacks	
Cakes	Chickpeas	Spinach	Lemon	Bunalun	
Eggs	Red Kedney Beans	Cauliflower	Baby milk	Piccolo	
Sugar	Coconut Oil	Garlic	Veg mix	Organix	
Cereals	Balsamic Vinegar	Mixes leaves	Corn	Ellas	
Pasta	Extra virgen Olive Oli	Pointed Peppers	Aloe vera juice	Blue Whale	
Frozen food	Rapeseed Oil	Broccoli	Castor OIL	The organic food	
Botanical vitamins	Beef	Tomates	Turmeric active	Nolans	
Cubed broth	Lamb	Celery	Elderberry syrup	Goods of cork	
	Chicken	Kale	Wholistic turmeric	Biotiful Dairy	
	Baked Beans	Soya milk No sweet	Wholistic ashwagandha	Pukka	
	Oat Milk	Soya milk sweet	Turmeric brainwave	Gem	
	Almond Milk	Coconut Milk	Chicken Broth	Cocowel	
	Chocolate bars	Pears	Veg Broth	Odlums	
	Orange juice	Apples		La paz	
	Oat	Avocado		Aptamil	
	Compotes	Blueberries		Green Isle	
				Green Giant	
				Nestle	
				Kallo	

Source. Own elaboration