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Valuing the Mediterranean Diet from Intangible Cultural Heritage of Humanity to tangible resource of the territory: a Contingent Valuation study

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ABSTRACT

This thesis engages with the problem of valuing the Intangible Cultural Heritage (ICH) of the Mediterranean Diet (MD), into the overall context of its progressive erosion due to general decline in adherence to the Mediterranean dietary pattern by Mediterranean people, especially young generations. This work is also engaged with the problem of what it may be done to preserve, safeguard and revitalize the ICH of the MD. In this context, with the double specific objective to calculate economic value of the Mediterranean Diet - Intangible Cultural Heritage and to define the specific determinants of respondents WTP for MD heritage and, consequently, for preserving it, a contingent valuation (CV) survey was conducted between July and October 2016, using nationwide internet-based interviews on a sample of 897 Italian respondents. To this scope, ICH of MD was declined in a prototypical project, which factoring the most affective elements of the intangible cultural heritage of the Mediterranean diet into a tangible product related with cultural as well as tourism sector: the "Mediterranean Diet District". It was designed to let people, physically and actively, "experience" the ICH of the MD, making explicit and tangible its use value.

The results of this study provide quantitative information and important insights for both policymaking and research.

1. RESEARCH SCOPE

1.1 The Research Problem

This thesis engages with the problem of valuing culture, into the overall context of progressive erosion of the Intangible Cultural Heritage (ICH) of the Mediterranean Diet (MD). The erosion phenomenon is due to general decline in adherence to the Mediterranean dietary pattern by Mediterranean people, especially young generations. This work is also engaged with the problem of what it may be done to preserve, safeguard and revitalize the ICH of the MD, avoiding also, negative effects in terms of general sustainability of food system of Mediterranean area, provocated by the abandonment of the Mediterranean dietary pattern in Mediterranean region.

In 2010, Mediterranean Diet was acknowledged by UNESCO as Intangible Cultural Heritage of Humanity. As culture in general, MD is an intangible good, complex to define and to be valued. It is not common in previous studies, to give an economic interpretation to the value of Mediterranean Diet Intangible Cultural Heritage, but this not means that it may be treated as if it is priceless. The concept of culture has come from a moral and spiritual interpretation to an anthropological one, more related with the construction and transmission of meaning, of a way of life (O'Brien, 2010), coming throught its identification as a signifier of social distinctions. Thus, as reported by Jones (2010), the discussion about the definition of culture is already opened, as it is that about making value judgement within cultural sector (Reeves, 2002; Cowen, 2006), especially if it is related with funding decisions and with the understanding of what is "valuable" of intangible cultural goods. Then the essential questions are:

- how to value intangible good, as the Intangible Cultural Heritage of Mediterranean Diet is, using economic valuation method;
- which valuation technique is the most appropriate to be used to capture users' and non users' valuation of intangible cultural goods.

Following Bakhshi and Throsby (2010), who clarify that the quality of experiences plays an essential role in determining economic value of cultural goods, in this study ICH of MD is declined in a prototypical project, which factoring the most affective elements of the intangible cultural heritage of the Mediterranean diet into a tangible product related with cultural as well as tourism sector (Lan et al., 2012), the "Mediterranean Diet District", where people may be actively able to experience the Mediterranean Diet heritage. Using the Contingent Valuation (CV) method, its economic value will be determinated in order to provide a preliminary indication of the economic benefits of the Intagible Cultural Heritage of Mediterranean diet declined in an innovative way: a tangible cultural good to be experienced.

1.2. **General research aim**

The general aim of this research is to investigate the economic value of the ICH of the MD and to define which are the determinats of people willingness to pay (WTP) to "experience" MD heritage, and consequently, to preserve it. This study aspires to be useful for policy decision-making in order to counterattack the progressive erosion of the ICH of the MD, also by trigging a positive process of dissemination and awareness raising to a wider audience, to safeguard the transmission of this heritage of millennia, from generation to generation. At this scope, it was developed a project proposal of a cultural good, that offers the opportunity to phisically "experience" the intangible heritage of the Mediterranean diet: the "Mediterranean Diet District". The economic valuation method used is the Contingent Valuation, a stated preference technique, able to capture the total economic value of cultural goods, starting from a valuation of an hypothetical market and considering both the use and non-use value of the cultural good to be evaluated. Therefore, the value that a person gets from being able to enjoy the cultural heritage related to MD by visiting the "Mediterranean Diet District" is defined as the largest amount of money that persons would willingly pay to have that opportunity. Specifically, for the cultural good proposed, the value that a visitor receives would be defined as the largest amount of money that he/she would be willing to pay, as daily entrance fee, to gain access to the site (Lee, 2015) and to experience the MD heritage. Instead, the total value generated by the "Mediterranean Diet District" is defined as the sum of all individual potential visitors' WTP, considering only the Italian population.

1.3. Specific objectives

To achive the research aim, the specific objectives of this thesis are:

- the interrelated effects of the MD heritage with food system sustainability are analysed and discussed, also with the help of a theoretical framework, in order to claryfy the need of preserving the Intangible Cultural Heritage of Mediterranean Diet. Specifically, to underline the need to revitalize this intangible food heritage and to reverse the negative trend of adherence to this dietary pattern, primarily, in the Mediterranean countries, the negative consequences associated with the "nutritional transition" (the decrease in adherence to the Mediterranean dietary patterns in Mediterranean countries) and the related erosion of this highly diversified ICH are specified;

- an econometric model was developed with the purpose to calculate economic value of the Mediterranean Diet - Intangible Cultural Heritage and to define the specific determinants of respondents WTP for "experience" MD heritage and, consequently, for preserving it.
  In details: a contingent valuation survey (based on triple bounded dichotomous questions) was conducted between July and October 2016, using nationwide internet-based interviews on a sample of 897 Italian respondents; to estimate the mean WTP the econometric method known as "double-bounded" or "interval data" model was applied to the data obtained from the survey, using the data analysis and statistical software STATA 14.2; the economic value of the Intangible Cultural Heritage of Mediterranean Diet declined in a cultural tourism good, was calculated in term of total annual economic benefit of the "Mediterranean Diet District", by multiplying the estimaed mean WTP amount by the sum of the annual number of Italian visitors of Apulia region in 2015 and the number of the inhabitants of province of Foggia, as already done in a recent previous study (Tuan and Navrud, 2008; Lee, 2015); to individuate the determinants of respondents' WTP it was chosen a two-stage econometric approach, to firstly investigate the non-monetary WTP throught a traditional logit model, and, then to investigate the monetary WTP throught a comparison beetween two econometric model, an ordered logistic model and a generalized ordered logit, applied on the entire sample, using the data analysis and statistical software STATA 14.2.

1.4 The significance of the study

This study provides important insights for both policymaking and research. With respect to policymaking, the results of the valuation estimate of the WTP for the MD heritage, as suggested by Navrud and Ready (2002), provide quantitative information that can be useful for evaluating whether to undertake projects and, also, for determining the level of investment in preserving and revitalizing intangible cultural heritage of MD, in terms of how much effort and resources should be devoted. At local level, investment in cultural projects of preserving and revitalizing intangible cultural heritage of MD are suggested to be seen as a possible way to create economic value from leveraging intangible culture heritage (Sedita, 2012)**.** The results may be useful to policy decision making to provide a solution to face the negative effects on health and nutrition, local economy, environment and biodiversity and social and cultural aspects due to the progressive decrease in adherence to the MD lifestyle and dietary pattern and to the progessive erosion of Mediterranean Diet heritage. This research may be useful also to suggest an alternative strategy of local development of the province of Foggia, which, starting from the potential power and effectiveness in disseminating "culture" and raising–awareness of health, social, economic and environmental

benefits of Mediterranean Diet of the "Mediterranean Diet District", could be able to affect the local economy, attracting visitors, empowering the tourism attractiveness of the province of Foggia, reducing the seasonality of tourism demand of the province of Foggia and, consequently, generating direct and indirect effects in reference to a more general plan of destination management of this territory (Wang and Pizam, 2011). Infact, as stated by La Sala et al. (2016), " the success of a tourist system is strongly influenced by a well-developed heritage theme". In addition, with respect to research, the importance of valuing the benefits of MD heritage, declined as "Mediterranean Diet District", lies both in the innovative character of the proposed cultural good, which is based on an alternative use of the MD ICH as a source of creativity and innovation (Cominelli and Greffe, 2012), and in the interdisciplinarity of the approach used to design it. The described "Mediterranean Diet District" was designed by the author of this thesis, with the scientific support of studies from different sectors, from tourism destination management to social science, from economics and economics of tourism to applied agricultural economics, from anthropology to marketing, from management of the cultural institutions to experience economy, from local tourism policies to Apulia tourism flows reports. It is a cultural good in itself, a sort of "ibrid" between an amusement park, a science district and an interactive museum, designed, among other thinghs, to capitalized hypothetic investments in preserving and promoting the MD as healthy and sustainable choice, going beyond mere educational and awareness raising campaings. It was meant as an "active" communication and education tool based on the "experience" of the visitors, offering, through specific services, the opportunity to actively live, taste, discover and understand what is the MD Intangible Cultural Heritage of Humanity. It was conceived as an alternative promotion and communication strategy based on interaction between culture, science, entertainement and tourism to reiforce the effects produced in terms of construction of emotional memory and in structuring experiences that generate new meanings around the Meditarranean diet and its adoption in everyday life. It may be also seen as a vehicle to facilitate and to develop future effective interdisciplinary collaborations among scientists of different disciplines (Dernini, 2006) and professionals. Finally, this work contributes to the development of the research on the economic evaluation of cultural heritage, by adding an Italian study about this topic and revealing the feasibility of extending the use of CV method to assessing intangible cultural heritage. It sets the basis for future linked research objectives like the assessment of the economic benefits of cultural good, not only in terms of estime of the "true value" of the culture, but "to estimate potential spillovers in the local economy from investing in culture" (Bowitz and Ibenholt, 2009), as investing in MD ICH is. It is, infact, a starting point for future researches to study and calculate the direct and indirect "effects of"

investments in the cultural sector and to study the ′effects of tourism′ in local economy by applying economic impact methods (del Barrio et al., 2012).

2. THE ANALYSIS OF THE PROBLEM

2.1 The preservation of intangible cultural heritage

The concept of heritage has undergone an evolution over the last decades of the 20th century to approach to its international definition. According to different authors (Desvalléès, 1995, Vecco 2010) the expansion and semantic transfer of the term heritage has undergone significant changes in five historic periods: 1790-1791, 1930- 1945, 1959, 1968-1969 and 1978-1980.

The international distinction of the UNESCO Proclamation of Masterpieces of the Oral and Intangible Heritage of Humanity in 1999 and its declaration, for the first time in 2001, of nineteen spaces of Intangible Heritage of Humanity are two events that mark a crucial turning point in the dematerialization of the concept of "heritage", opening its field towards more ethnoanthropological and less tangible aspects (Medina, 2009).

Nowadays, since the UNESCO Convention for the Safeguarding of the intangible cultural heritage, in 2003, many countries became familiar with a new paradigm of "heritage", the so called Intangible Cultural Heritage and with its related safeguarding importance (Srinivas, 2008).

This paradigm considers heritage as a continually trasforming and innovating complex of cultural elements of an immaterial nature, such as practices, skills, knowledge, customs, oral and performing traditions and representations, that embracing such items in their context, adopting a comprehensive approach (del Barrio et al., 2012) instead of the restrictive notion of something material, monumental and aesthetic (Cominelli & Greffe, 2012). From this perspective, heritage can no longer be closely linked to the physical consistency of the object, but to the recognition of aesthetic, historic, scientific and social values (Vecco, 2010).

Furthermore, also the concept related to the conservation has evolved to include the immaterial dimension, the orality of culture, the ability to recognized values on which our cultural identity can be built and the knowledge itself, surpassing the object's material consistency, (Vecco, 2010).

According with this integral approach towards heritage, we must include the protection and the safeguard of the intangible cultural heritage as an essential requirement of "the protection, promotion and maintenance of cultural diversity… an essential requirement for sustainable development for the benefit of present and future generation" (Unesco, 2005, art.2.6). As environmental goods, cultural heritage need to be protect and preserve and this implies resources to be allocated for this purpose and, it is therefore, crucial to understand and define the value that someone receives from cultural heritage (Navrud and Ready, 2002).

2.2 The case of Mediterranean Diet - Intangible Cultural Heritage of Humanity

The UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage (ICH) in 2003, demonstrates the constant increase of general interest in intangible cultural heritage. UNESCO defines ICH as *''the practices, representations, expressions, knowledge, skills as well the instruments, objects, artefacts and cultural spaces associated therewith that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This ICH, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity''*. The Mediterranean Diet (MD) has always been known as a healthy dietary pattern, but its role as a part of Human Culture and Intangible Cultural Heritage (Medina, 2009) was already conceived in its etymological origin, the Greek word *''dıata''*. It means way of life, a harmonious relationship between mind, body and environment. Starting from this definition and supported by scientists from all around the world, that confirmed in their studies all the impacts of the MD on well-being, quality of life and health, the joint effort of Spain, Italy, Greece and Morocco under the general technical coordination of the Mediterranean Diet Foundation presented the candidacy of the Mediterranean Diet as World Cultural Intangible Heritage at UNESCO, in 2008, with the aim of recongnise to MD its importance as part of the Mediterranean culture and identity, consolidating the new conception of MD as "the ensemble of practices, representations, expressions, knowledge, skills, spaces, and associated objects that people around the Mediterranean have created, and historically recreated in interaction with nature, around food" (Reguant-Aleix And Al., 2009). In 2010 the four States parties presenting the Nomination and all the actors concerned, considered the Mediterranean Diet as a millennium-old cultural corpus constituent element of the intangible cultural heritage as defined in Article 2 of the UNESCO Convention (UNESCO, 2010). The inclusion on the UNESCO Intangible Cultural Heritage List may be considered a strategic turning point for future challenges and perspectives of the Mediterranean Diet. As pointed by Sandro Dernini: *''the Mediterranean diet as a whole life style makes visible our cultural identity and diversity, providing a direct measure of the vitality of the culture in which is embedded. The Mediterranean diet is an expression of a Mediterranean style of life in continued evolution throughout time. Mediterranean diet as intangible cultural heritage is transmitted from generation to generation, and it is constantly recreated by communities and groups in response to the change*

of their environment and their history. It provides a sense of identity and continuity for the Mediterranean people". Furthermore, the inclusion on the UNESCO Intangible Cultural Heritage List of the MD may be interpreted as a preservation strategy useful in reducing the increasing erosion of the MD Heritage by creating the critical mass of awareness and understanding of the health, social, economic and cultural benefits of the Mediterranean Diet as an expression of a whole cultural system (Dernini, 2008).

In addition, numerous scientific studies widely confirm that the effective adherence to Mediterranean Diet shows significant health and nutrition benefits (Willett *et al*., 1995; Nestle, 1995; ITFPCHD, 2000; Serra-Majem al., 2006; Sofi *et al*., 2008; Maillot *et al*., 2011; CIHEAM/FAO, 2015). The pioneer of the studies, who firstly confirms the effects of the MD against chronic diseases, was Ancel Keys with the famous "Seven Country Studies". The result of this study established that the adherence to the traditional Mediterranean diet is associated with the reduction of the mortality due to coronary heart disease (Keys, 1970,1980; Keys and Keys, 1975). Since then, scientists focused their researches on the construction of an index of adherence to the Mediterranean diet in which beneficial foods mostly consumed in traditional Mediterranen diet are positively scored, instead of those typical of the Western food habits, negatively scored (CIHEAM/FAO, 2015). Other recent studies had deeply analized the systematic association of the adherence to the traditional Mediterranean diet, and in general, of the high intake of vegetables, olive oil, fish and whole grains, typical food of the Mediterranean dietary pattern, with a marked reduction of type 2 diabetes incidence (Martínez-González *et al*., 2008), with cardiovascoular disease rate and mortality (Trichopoulou *et al*., 2003; Trichopoulou, Bamia and Trichopoulos, 2005, 2009; Martínez-González *et al*., 2002, 2009; Estruch *et al*., 2013, 2006; Buckland, Bach and Serra-Majem, 2008; Buckland *et al*., 2009; de Lorgeril *et al*., 1994; FAO, 2005; Mendez *et al*., 2006; Panagiotakos *et al*, 2006; Sánchez-Villegas *et al*., 2006; Zazpe *et al*., 2011, cited in CIHEAM/FAO, 2015) and also with a reduction of the development of various types of cancers (La Vecchia, 2004; Bosetti, Pelucchi and La Vecchia, 2009; Vernele *et al*., 2010, cited in CIHEAM/FAO, 2015). In 1990s these studies were supported by researches that focused their efforts on the impact of dietary patterns on the ecosystem in general, as well as on the human health. Joan Dye Gussow was the first to study Mediterranean Diet as a sustainable dietary pattern, and, after that, an increasing number of studies focused on the comparison between the environmental sustainability of the Mediterranean diet, a plant-based dietary pattern, characterized by lower greenhouse gas emissions and lower water footprint, and the Western one, characterized by an higher weekly intake of meat and processed food (Dernini and Berry, 2015). According with the follow definition of "sustainable diets" as *"…those diets with low environmental impacts which contribute to food and*

nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimizing natural and human resources" (FAO/Bioversity, 2010), in 2015, FAO and CIHEAM, conjointly selected to study the Mediterranean Diet to asses it as a potential model for effective sustainable development in the Mediterranean Basin. This case study clarified which are the relevant characteristics of a sustainable diet model, as Mediterranean diet is, necessary to counteract the degradation of ecosystem, loss of biodiversity, waste and food losses, malnutrition and overnutrition problems. Despite the well documented positive implications in terms of food and nutrition security, public health, environment protection and socio economic development, recent studies show the decline in the adherence to traditional Mediterranean diet (IOTF, 2005; Garcia-Closas, Berenguer and Gonzalez, 2006; Belahsen and Rguibi, 2006; da Silva *et al*., 2009; Vareiro *et al*., 2009; León-Muñoz *et al*., 2012, cited in CIHEAM/FAO, 2015), due to the pressure of threats from the predominance of imported consumption patterns and from the homogenization of life styles as, already forecasted in the 2005 Mediterranean Strategy on Sustainable Development (UNEP/MAP, 2005; CIHEAM/FAO, 2015). The progressive decline in the adherence to Mediterranean dietary pattern, also in the Mediterranean countries, implemented mainly by younger generations, is leading to a gradual erosion of the intangible cultural heritage of Mediterranean diet. It means the risk of extinction of the diversities of Mediterranean food cultures and of the wide variety of food that make up the Mediterranean diet (Dernini, 2008) and the loss of awareness, meanings, understanding and appreciation of what it represents in terms of public health savings, lower environmental impacts, economic gains locally, social and cultural understanding of the traditional food value and individual weel-being (Dernini, 2008, 2015). Therefore, it is evident the need to preserve and safeguard the MD intangible cultural heritage, as well as to trigger a positive process of dissemination and awareness–raising to effectively promote its transmission.

2.3 The importance of preserving Intangible Cultural Heritage of Mediterranean Diet

The Intangible Cultural Heritage of MD is a highly diversified heritage in which food cultures are interrelated with food systems in general, so, not only with health but also with social, cultural, economic and environmental aspects. Therefore, the importance of preserving and disseminating Intangible Cultural Heritage of Mediterranean diet may be analized within four main topics, health and nutrition, economy, environment and socio-cultural factors, all directly or indirectly, linked with the ongoing "nutritional transition" and decrease in adherence to the Mediterranean dietary

patterns, also in Mediterranean countries (CIHEAM/FAO, 2015). Hereafter they are discussed with the principal aim to clarify impact on the above issues if nothing will be done in terms of preservation and dissemination of the Intangible Cultural Heritage of Mediterranean diet, in order to revitalize this intangible food heritage and to reverse the negative trend of adherence to this dietary pattern, primarily, in the Mediterranean countries.

2.3.1. Nutrition and health

FAO defines "nutrition" as "the ensamble of biological processes which allow or affect, survival, growth, development and integrity of a living body, on the basis of availability of energy and nutrients". In the Mediterranean area, problems related with undernutrition coexist with those related with overweight and obesity. This, so called, "nutritional transition", characterized also by the decline in adherence to the traditional Mediterranean and its consumption patterns (Garcia-Closas *et al*., 2006; Belahsen and Rguibi, 2006; da Silva *et al*., 2009; Vareiro *et al*., 2009; León-Muñoz *et al*., 2012; Germani *et al*., 2014;), involves not only the quantity of food consuming, but also the quality of food. Under the aspect of the quantity of food, comparative regional data from Global Nutrition Index, show that, in the period 2001-2003, the 3.9 percent of the population of the south of the Mediterranean is undernourished. Moreover, recent data from UNICEF report on nutrition country profile, referring to 2008, show that in Southern and Eastern Mediterranean countries persists an high level of stunting among children under five years of age: 26.3 percent in Albania, 14.9 percent in Algeria, 10.5 percent in Bosnia and Herzegovina, 1.0 percent in Croatia, 28.9 percent in Egypt, 12.0 percent in Jordan, 10.8 percent in Lebanon, 20.7 percent in Libya, 22.5 percent in Morocco, 10.2 percent in Palestine, 0.5 percent in Serbia, 27.7 percent in the Syrian Arab Republic, 6.2 percent in Tunisia and 10.3 percent in Turkey (CIHEAM/FAO, 2015). On the other hand, the World Health Organization is observing, at the same time and in the same countries, the continue growth of the obesity and overweight rates. 21.3 and 54.4 percent in Albania; 16.0 and 45.5 percent in Algeria; 33.1 and 67.9 percent in Egypt; 18.2 and 50.7 percent in France; 20.1 and 53.7 percent in Greece; 19.8 and 54.1 percent in Italy; 27.4 and 61.8 percent in Lebanon; 28.8 and 64.3 percent in Malta; 16.4 and 46.8 percent in Morocco; 24.0 and 59.1 percent in Portugal; 26.6 and 62.0 percent in Spain; 22.3 and 53.7 percent in Tunisia; and 27.8 and 61.9 percent in Turkey (CIHEAM/FAO, 2015). From the prospective of the quality of food, switching from a traditional Mediterranean diet to a Western-type dietary pattern, involves some important changes about the diet composition, both in terms of nutritional value and percentage of each type of food consumed. This could explain, in part, the chronic nutrition-related disease spreading in Mediterranean countries. In detail, in the Northern Mediterranean countries the high increase of consumption of

animal fats, industial foodstuffs and vegetable oils, different from extra virgin olive oil, connected with an increase of simple carbohydrates (beverages and industrial foodstuffs) intake and a change in the percentage of total protein intake in favour of animal ones at the expense of those from vegetable category (Padilla, 2008), are the principal causes of the growing trend of overweight, obesity and chronic nutrition-related diseases. In the Sourthern Mediterranean countries as studied by Belahsen and Rguibi in "Population health and Mediterranean diet in southern Mediterranean countries " (2006), the principal causes of undernutrition and of disabilities and death due to chronic nutrition-related diseases are to be found in a sedentary behaviour associated to fibre low consumption and satured fats and refined carbohydrates high consumption, instead of complex carbohydrates and proteins and lipids of vegetable origin. Finally, quality of a diet composition is also about the biodiversity. Switching from traditonal Mediterranean diet, also means loses in tems dietary diversity as nutrient composition between food and among varieties/cultivars/breeds of the same food (CIHEAM/FAO, 2015). So, the nutritional quality of Mediterranean dietary pattern is evident under all these diet-health connections. Recent studies have supported this statement and have confirmed how the adherence to an Mediterranean diet pattern fulfils the micronutrient requirement much better than typical Western diet, and have shown that adherence to MD is associated with "a healthier body weight, reduced waist circumference as a marker of central obesity, lower incidence of the metabolic syndrome and type 2 diabetes and delay in the evolution of cognitive decline linked to Alzheimer's disease and vascular dementia" (Dernini et al., 2016). Other numerous health advantages of adoption of a Mediterranean dietary pattern, as lower peripheral artery disease, decreased inflammation and improved endothelial function, improved respiratory fitness and immunity, decreased mental disorders such as depression, as well as improved quality of life are still under study, as confirmed by Dernini in his recent study (Dernini et al., 2016). All the abovementioned scientific evidences scientifically support the evidence that the adoption of MD has advantages also in terms of cost-effectiveness of health-care (Abdullh et al., 2015).

2.3.2. Environment

Starting from the statement that food system sustainability and food security are strongly linked, Lacirignola and Capone (2009) affirmed that in the Mediterranean area different dimensions of sustainability are affected by food consumption patterns and diets adopted by its inhabitants in the same way food and nutrition security of the Mediterranean population are.

First example of negative impact of the lost in adherence to the MD, on sustainability of local

production systems and on the food security and livelihood of populations living in the region, is the loss of agricultural diversity occurring around the Mediterranean basin.

Globalization trend, climate change and the ′westernization′ of inhabitants lifestyles, togheter with continued use of indigenous species and varieties (Lacirignola et al., 2012), standardization of cultivation practices, monoculture techniques and mechanization, are the principal causes of the genetic erosion of agro-biodiversity. As consequence, it is always more difficult to safeguard the Mediterranean Diet at the local level. Infact, if since 1950 studies consider the Mediterranean basin as the major centre of plant diversity, with over 80 crops listed (Vavilov, 1951, Heywood, 1998) and a biodiversity richness, both in terms of terrestrial and marine flora and fauna, today, Mediterranean area is facing a critical situation affecting the reduction in genetic diversity, also in terms of knowledge on how to recognize and use local flora (food crops) and fauna (animal breeds), and it is estimated that in the 21st century only the 10% of the variety of crops will be still farmed and many local varieties will be replaced by a small number of improved non-native ones (Lacirignola et al., 2012). In other words, the loss of biodiversity is affecting not only the production systems but also the cultural heritage related to traditional food and lifestyle of the Mediterranean area. The second example is related to the increasing trend in adherence to a Western dietary pattern. As shown in numerous studies, all standard environmental footprints as reduce greenhouse gas emissions, land use and energy consumption, lower extent water consumption are positively related with the adherence of population to the MD instead of to other current dietary patterns which implies higher consumption of animal products (Tukker et al., 2011; Tilman and Clark, 2014, cited in CIHEAM/FAO, 2015). The protection and the enhancement of basic resources are the starting point for a "sustainable" development of the Mediterranean region and, therefore, it is important to promote change in consumption and production patterns. MD represents, infact, a strong vehicle to "sustainability", with its significantly reduction of food environmental footprint on natural resources; its encouranging use of wide range of local products (fruits, cereals and vegetables, etc.) also wild species and finally with a complete knowledge about their seasonal use, traditional recipes and with the traditional knowledge of nature as cultural and landscape heritage (Lacirignola et al., 2012; Dernini et al., 2016). Finally transitioning to more sustainable diets, as MD is, means also minimizing food lost and wastage. It means reduction of lost for life-supporting nutrition but also for precious resources, including land, water and energy (Institution of Mechanical Engineers-UK 2013). In other words to improve adherence to MD, safeguarding and promoting MD Intangible Cultural Heritage, with related traditional culinary activities, conviviality, its "food–saving culture" (frugality), physical activity and the seasonal consumption of fresh and local variety of products may help in reducing waste across the whole

food system increasing the amount of food available for human consumption and in improving natural resources use efficiency (Ingram, 2011, Capone et al., 2014).

2.3.3. Economy

Speaking about how the adherence to Mediterranean diet may positively influences the economy attains all the range of activities, the actors and their interactions concern the food system. As defined by Goodman in 1997, *"Food systems represent all processes involved in feeding a population and include the input required and output generated at each step. A food system operates within, and is influenced by, the social, political, economic and environmental context"*. Food production, food processing and packaging, food distribution and retail, and food consumption are the four categories of a typical food system that influences the composition of human food consumption, its nutritional quality, who is able to eat and the food production and distribution system (Capone et al., 2014). Nowadays all these aspects have been influenced by globalization and the urbanization of the society, two phenomenons that have modified consumption habits as well as have imposed new forms of production, sales and distribution with the result of "increasing the availability of determined food products leading to a loss of the Mediterranean food structure in the northern coutries of Mediterranean area and a notable food imbalances in the sourthern countries" (Lacirignola et al., 2012). Recent study (Dernini et al., 2016) states that promoting the MD means to promote a sustainable system that guarantees the balance between the territory and the people, in total respect of local specifities, ensuring the conservation and development of traditional activities and crafts. It may be consider a driver of positive local economical returns in the Mediterranean area, especially in the Southern countries, based on sustainable development of small rural areas through the valorization of local food products and empowerment of their producers, reducing their dependence on food imports, orienting consumers' choices to locally produced products (Weatherell et al., 2003). The valorization of local food products and empowerment of their producers means also higher qualitative standards and precise identification of the product origin, adoption of a correct labelling system, and protection of the traditional and typical Mediterranean food products, but at the same time innovation both technological and of market.

2.3.4. Socio-cultural factors

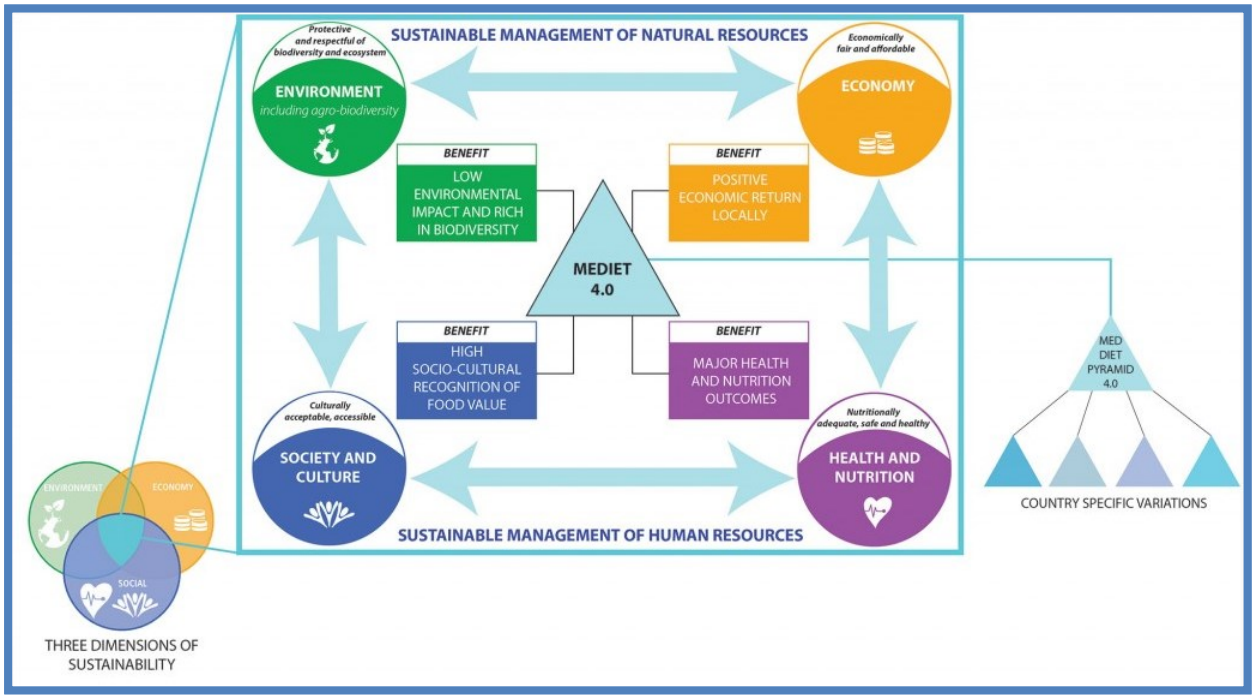
The recognition of the Mediterranean Diet as an intangible cultural heritage of Cyprus, Croatia, Italy, Spain, Greece, Morocco and Portugal by UNESCO in 2013 has meant that the uniquely

biomedical model for healthy eating is being extended to a cultural representation for healthier lifestyle focusing also on the importance of social and cultural context in the dietary model. This increased attention given to the importance of convivial mealtimes and leisurely eating was already underlined by Ancel Keys, the author of the pioneer Seven Countries Study, demonstrating the impossibility in isolating dietary habits in the Mediterranean from their socio-cultural context (Phull, 2015; Keys, 1995; Keys and Keys, 1975). The context in which food is consumed is a fundamental aspect of Mediterranean diet. As stated by Phull (2015) the most prominent cultural ideal of MD model is the idea of conviviality, the pleasure of shared meals. The "eating together" aspect of MD may be seen as an opportunity of social exchange, a way to build solid relations based on a common cultural identity, on common values as hospitality and community. The central role of women in safeguarding culinary techniques and trasmitting of social values is also a central aspect of socio-cultural identity of MD. In other terms, pleasure is a fundamental component of the MD, moving away from the concept of dietary model as an instrument to meet biological needs, and stating that the role of food is to be a vehicle for cultural processes and social interactions based on the importance of sociability and cooking and enjoying food with others, promoting traditional food consumption and recipes. Another cultural principle of MD is frugality that expresses "the care in food preparation, moderation in portion size and avoiding waste" (Dernini et al., 2016). In the complex, MD is also an example of how differences related with history, religions, culture, lifestyles and food traditions between Mediterranean countries may be mediated through the culinary and social value of food, at local level as well as at national and international one (Medina, 2009; Dernini et al., 2016). Lost in adherence to MD is synonym of loss of awareness and appreciation, particularly among younger generations, about their own cultural food heritage and of standardization of lifestyles (CIHEAM/FAO, 2015). For these reasons the preservation and the safeguard of the MD with its countries specifics is a critical base for the safeguarding of the diversity of the Mediterranean food cultures heritage and of a cultural system in general.

2.4 The theoretical framework

As affirmed by Dernini in its recent work " Med Diet 4.0: the Mediterranean diet with four sustainable benefits" (Dernini et al., 2016), between 2014 and 2015 the members of scientific commitee of the International Foundation of Mediterranean Diet (IFMED) developed the "Med Diet 4.0" theoretical framework were the abovementioned benefits of MD, health and nutrition benefits, low environmental impacts and richness in biodiversity, high sociocultural food value and positive local economic returns, were highlighted and incorporated into one single comprehensive framework **(Figure 1)**.

Figure 1. Med Diet 4.0 framework



Source: www.ifmed.org

As shown in **Figure 1**, this is a conceptual multidimensional framework which takes into account the highly diversified heritage of MD, with all its country-specific and cultural variations, to contributing to a better understanding of sustainable diets in general and of the MD, in the specific, as a complex of food systems and cultures (Dernini et al., 2016). The main aim of the creation of Med Diet 4.0 framework is to create an educational and communication tool for the revitalization of MD. The innovative aspect of this communication tool is that it provides an innovative multidisciplinary approach for communication of the multiple sustainable benefits of the MD and its expression of a lifestyle, going beyond the limiting definition of MD only related to a balanced quantity of nutrients, usually represented in the Mediterranean Diet Pyramid (Trichopoulou and Lagiou, 1997; Bach-Faig et al., 2011; Dernini et al., 2013). The objective of the creators of this framework is, also to develop a "facilitator" that increases the effectiveness of the MD as an educational model for nutrition and health promotion by better explaining to people, especially young Mediterranean generations, the way they are eating and how this has direct and indirect effects and consequencies to their health as well as to the sustainability of the planet (Dernini et al., 2016).

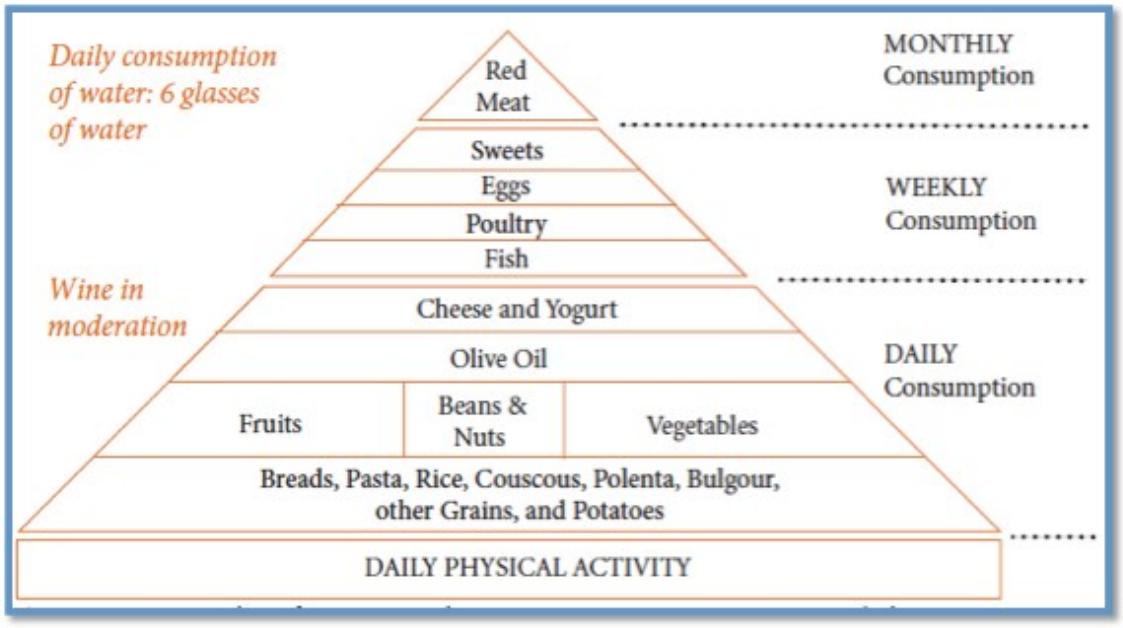
2.5. The Mediterranean Diet pyramid today

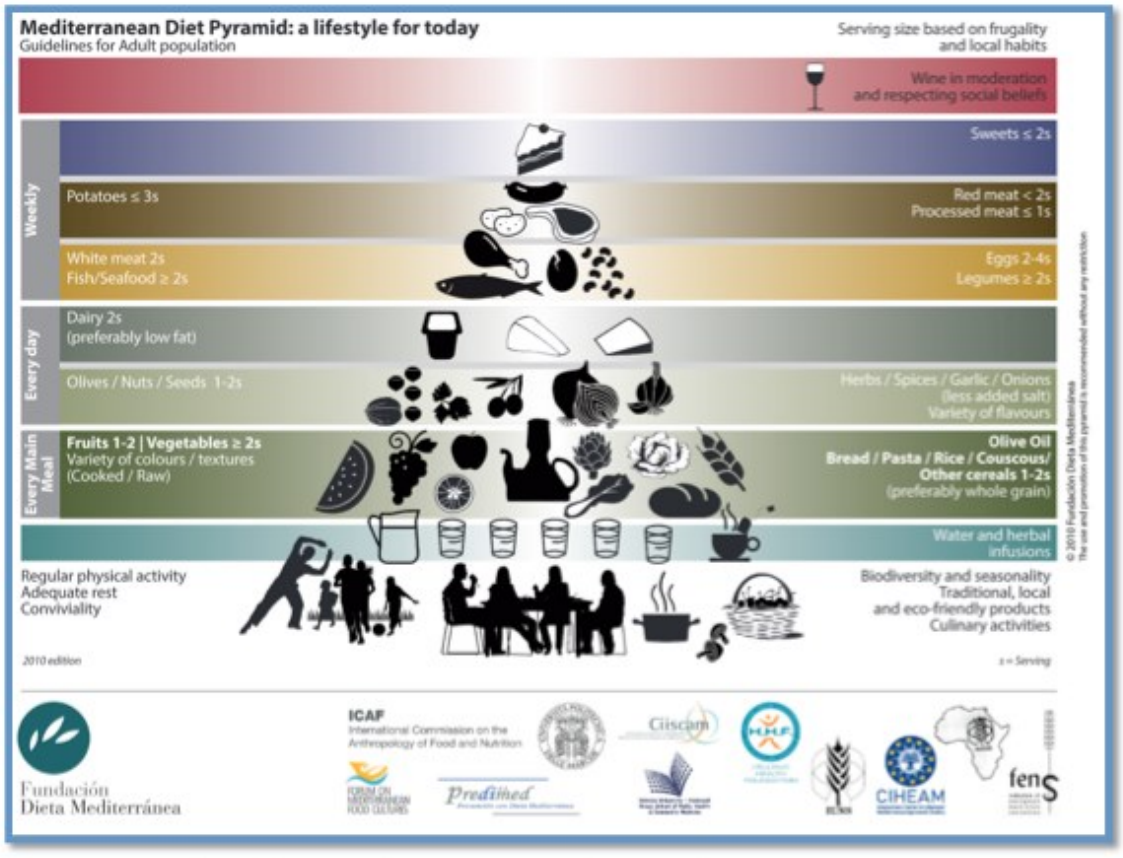
As argues by Berry et al. (2011) “the Mediterranean diet is the alive and evolving result of the millennial history of the Mediterranean”. As described in the White Paper “Mediterranean food consumption patterns” (CIHEAM/FAO, 2015) the MD is far from be homogeneous, “it is transmitted from generation to generation and is constantly recreated by communities and groups in response to the change of their environment and their history”. It means the presence of differences in dietary patterns of the Mediterranean populations because of its interconnectios with extremely various traditions related to food, also reflecting religious, geographic and cultural differences of the Mediterranean populations (Berry et al., 2011, CIHEAM/FAO, 2015). Lupo (1997) argues that significant dietary differences can be observed even within the same country.

In 1993 the Harvard School of Public Health created the first iconic graphic representation of the nutritional model of the Mediterranean Diet: the pyramid **(Figure 2).** In the years, different versions of the pyramid have followed to represent the country specific food habits of the various countries of the Mediterranean region (Noah and Truswell, 2001; Dernini S. et Al., 2012). Today, thanks to the joint efforts of the Mediterranean Diet Foundation, the Forum of the Mediterranean Food Cultures and other international entities, and multidisciplinary experts, the Pyramid of MD is evolved as a simpliefied mainframe in order to be adapted to different contry- specific variations and in order to reflect a lifestyle for today, taking into account all the abovementioned scientific evidences in terms of health as well as of cultural and environment (Serra-Majem et al., 2012, CIHEAM/FAO, 2015).

As shown in **Figure 2,** it is a richer education tool that following the pattern of the traditional pyramid (starting from the bottom, progressively inserts food items from those which respresent the highest energy intake and key nutrients to those which should be eaten with moderation, or occasionally), graphically established the food to be consumed to follow a healthy and balanced diet. IT put in evidence also the composition of every main meal both in terms of presence of different variety of products used, and in terms of their colours and textures; the raccomandation of adopting a healthy lifestyle with regular physical activities, adeguate rest and conviviality, important for the social and cultural value of the meal; the moderation in serving sizes which should be adapted to the reduced energy needs of urban and modern life; the importance of preserving culture by practicing culinary activities in different occasions (everyday meal, celebrations religious festivals, etc.) using traditional, local and ecofriendly products, and taking into account the biodiversity as well as seasonality of foods (Serra-Majem et al., 2012). It is a graphic example, that explains how, in MD, food consumption has to be considered as a collection of contextual and evolving social practices, where food is used not only as means of sustenance but also as a means to build relationship with people in social, cultural and political terms (Mak et al., 2012).

Figure 2. Comparison between the Mediterranean Diet pyramid (1993) and Mediterranean Diet Pyramid: a lifestyle for today (2010)





Sources: Mediterra (2012); Fundacion Dieta Mediterranea www.dietamediterranea.com

This is another example of how important is become, at international level, to inform, to provide nutritional education and to promote the MD as "an extremely healthy and enviromentally sustainable food model, as well as an ancient culture heritage that confers identity and belonging", to counteract the progressive erosion of the MD ICH due to the increasing loss in adherence to Mediterranean dietary pattern and to face the related consequencies already explained. The use of these safeguarding instruments is aimed at creating an intercultural channel of communication where Mediterranean diet's benefits should mutually be shared by all people living in the Mediterranean region and all over the world, without leaving out the different cultural and religious traditions and different national identities present in the Mediterranean area (CIHEAM/FAO, 2015).

3. METHODOLOGY

3.1 The research questions

To cope with the growth of the erosion of the intangible cultural heritage linked to the Mediterranean Diet, with the final aims to preserve and safeguard it and to activate a positive process of dissemination and awareness raising to a wider audience of the value of the Mediterranean Diet, this study proposes to calculate the monetary value of the ICH of the MD.

World-wide, several economic valuation studies have been conducted about tangible cultural goods and their ricreational perception values and bequest value (Ruijgrok, 2006). This study concerns a contingent valuation study of a threatened intangible cultural heritage of humanity, the Mediterranean Diet, declined as an innovative prototypical project, involving cultural and tourism sector, the "Mediterranean Diet District". It is a cultural good itself, conceived as an union between an amusement park, a science district and an interactive museum, where people will be actively able to experience the MD heritage.

The research questions are:

- What is the economic value of the Mediterranean Diet Intangible Cultural Heritage? How much people is willing to pay to experience the MD heritage and consequentely to preserve it, by paying for the entrance ticket of "Mediterranean Diet District"?
- What determines people willingness to pay (WTP) for MD?

The "Mediterranean Diet District" was assumed to be located in the territory pertaining the province of Foggia, in Apulia region, in the South of Italy. Infact, the province of Foggia has the highest tourism rate between all Apulian provinces, also above the national average, but It is characterized by an high seasonality of the tourism flows, mainly concentrated in the summer months and based principally on the attractiveness of the Gargano natural heritage (Confcommercio, 2016). It may be defined as an attractive tourist destination which is entering in its maturity phase (Pugliapromozione, 2013), characterized by a tourism offer focused on seaside tourism products, that requires a tourism diversification strategy to overcome the problem of seasonality of its tourism flows and to develop all its attractive potential as tourist destination.

In this work, contingent valuation is used to elicit individuals' WTP, in non–monetary and monetary terms, for the ICH of MD, by means of an appropriately designed questionnaire in which the hypothetical scenario of the "Mediterranean Diet District" was described and evaluated, and respondents' socio-cultural, attitudinal and behavioural variables were investigated.

3.2 The experimental section

3.2.1 The economic value of heritage

Defining the economic value of cultural heritage means identify the amount of welfare generates for society, encompassing both material and immaterial forms of welfare, going beyond the strictly financial benefits, for example exploitation for tourist purposes, and including also those external to the market economy, as recreational perception values and bequest value (Ruijgrok, 2006).

Since the Sixties, environmental economists overcame the traditional perspective of welfare economics based on the concept that the value of a good arises only from its use, or utility, confirming that, also the pure existence of the good itself (Weisbrod, 1964; Krutilla, 1967), its non –use may generate value. In 2002, Bateman et al. classify the non-use value. Three main categories were identified: the bequest value, the option value and the existence value.

The option value occurs when at the present time there is not yet a use of the "good", but it is possible to predict some use in the future. The bequest value may be defined as altruism, the value of a kind of satisfaction of preserving the "good" (environmental or cultural heritage too) for future generations, giving them the opportunity to experience it. Finally, the value that originates from the perception of the mere existence of the "good", even if its future use is unpredictable or unexpected may be defined as existence value (Walsh et al. 1984; Brun, 2002) and also several studies worldwide confirms the validity of its empirical estimations for environmental goods first, and then, during the last twenty years, to cultural goods (Heafele et al., 1991; Chopra, 1993; Echeverria et al., 1995; Loomis et al. 1996; Hansen, 1997; Frey, 2000; Alberini et al., 2003; Alberini and Longo, 2006; Packer, 2008; Marsh et al., 2010; Fujiwara, 2013).

The CV method has been widely used to calculate the monetary value of nature and environment, but, thanks to the flexibility of this non-market valuation technique, numerous studies applied it to a wide range of public goods (Del Saz Salazar and Montagud Marques, 2005), including cultural ones, from the beginning of the 1990s (Navrud and Pederson, 1992). The Contingent Valuation is a non market technique able to assess both use value and non-use value (existence, option and bequest value) included in the willingness to pay for cultural public good (Santagata and Signorello, 2000). As stated by Navrud and Ready (2002) cultural heritage goods, including the intangible ones, may be consider "public goods" and, in this, they are similar to environmental ones. The principal properties of a cultural goods as a pure public goods are their not-excludibility and that they are non-rival in consumption. Not-excludibility means the impossibility to keep users from enjoying the good, obviously with different level of excludibility. This characteristic is important in terms of market implications concerned: if a good (in our case an intangible cultural goods) is not-excludible, it's difficult to force someone to pay for it and it means unavailability of financial

resources to preserve it, as consequence of its impossibility to make profit from "consumers". The non rivalness in consumption of public goods implies that different people can "consume/enjoy" simultaneously the good without diminishing the value that each receives from the good, so it is desiderable to allow more people to enjoy it than to allow fewer (Navrud and Ready, 2002). This is true for Intangible Cultural Heritage as that of the Mediterranean Diet is. Furthermore, contingent valuation method, applied to Mediterranean Diet Intangible Cultural Heritage declined as "Mediterranean Diet District", can "show the possibilities and limitations of relying on contributions or access charges in supplying a good that generates values to a much broader set of people than just those few who choose to use the good or donate to its preservation" (Navrud and Ready, 2002).

In order to find out in what ways intangible cultural heritage generates values, the definition of economic "value" (use value) of a public good like cultural heritage is, as "the largest amount of money that a person would willingly pay to be able to enjoy it", is necessary but not sufficient. The definition of the non-use value in its different facets is equally important, because, cultural heritage generates value even to people who does not "consume" it and gains benefits from the fact that the cultural heritage is preserved. The motivations related with the abovementioned benefits can be classified as: "altruistic values", the desire that cultural heritage may be available for other to use/consume; "bequest values" the desire that it may be preserved for future generations; "existence values" the desire that it may be preserved even if none ever actually use /consume it; "option value" the option the current non-users/consumers may decide to become an user/consumer in the future. So, as studied in previous researches, the non-use value that a non-user/consumer receives from preservation of cultural heritage may be defined as the largest amount that he is willing to pay (different from that he would donate) to be assured that the cultural heritage is preserved. Finally, speaking in terms of extent of market, that means the total population who hold value for the good, Mediterranean Diet is a global cultural heritage good, as confirmed by its designation as "Intangible Cultural Heritage of Humanity" by UNESCO in 2010. Therefore, it is people willingness to pay that determines the economic value of goods, and when cultural heritage, like Mediterranean Diet, has no market value, its economic value can be measuring by asking people directly as done in contingent valuation method.(Ruijgrok, 2006).

3.2.2 The valuation methodology

The aim of this thesis is to determine the economic benefits of Mediterranean Diet Intangible Cultural Heritage declined in a prototypical cultural good, the "Mediterranean Diet District" where

people will be able to "experience" Mediterranean diet heritage, located in the geographical area of the province of Foggia, in the north of Apulia region. It is not common in previous studies to give an economic interpretation to the value of Mediterranean Diet Intangible Cultural Heritage, but, this not means that it may be treated as if it is priceless, notwithstanding its greatest value is that it is unpriced. From the perspective of its preservation and safeguard, it is undoubtedly necessary to determine its economic benefits, in order to provide a preliminary indication of the economic benefits of MD. This study can be useful in the policymaking process of investing in preserving and revitalizing intangible cultural heritage not only to face the progessive erosion of Mediterranean Diet heritage and the progressive decrease in adherence to the MD lifestyle and dietary pattern, but also as alternative project of local development strategy, with a potential of attracting visitors and possibly reaping other benefits from tourism sector in terms of dissemination and awareness raising about health, social, economic and environmental benefits of MD. Following Pearce and Ozdemiroglu (2002), to obtained useful results is important to chose the appropriate valuation tecnique. Stated preference techniques, as CV is, are used "for those goods and services which require users' and non-users' valuations to be included in an estimate of the value of a good or service, stated preference techniques are the only well established set of tools for capturing these values" as reported by O'Brien (2010). The contingent valuation method is one of the non-market valuation methods usually applied to determine the economic value (the use value and the passive-use values) of non-market goods (Mitchell and Carson, 1989; Hanemann, 1991). It is a survey based approach that uses hypothetical survey questions to elicit people's preferences for public goods by showing their willingness to pay. Contingent, because it referred to the simulated circumstances created in the survey. Since the pioneering contingent valuation studies (Davis, 1964, Randall, Ives and Eastman, 1974) the contingent valuation, thanks to its numerous empirical applications and methodological progress, may be considered a useful and necessary informative tool, authorized and recommended by a growing number of national and international organizations and agencies such as FAO, OECD, UNEP, Word Bank (Santagata and Signorello, 2000). Furthermore the great number of contingent valuation studies applied on different topics demontrates its high flexibility with respect to the object to estimate (Navrud and Ready, 2002) also to cultural public goods (Navrud et al, 1992; Grosclaude and Soguel, 1994; Willis, 1994,; Martin 1994; Hansen 1997; Carson et al., 1997; Whitehead, Chambers and Chambers, 1998; Santagata and Signorello, 2000; Sanz et al.,2003; Bedate et al., 2004; Del Saz Salazar and Marques, 2005; Ruijgrok, 2006; Tuan and Navrud, 2008; Bàez and Herrero, 2012; Lee, 2015). Other studies (Bateman et al. 2002; Towse, 2007; Noonan, 2003, 2004) underline the growing interest in using CV within cultural sector, basing its efficacy on the similarities between environmental goods and

culture economic valuation. Examples of contingent valuation applied to cultural goods and services are, among others, Barlow's evaluation of local football club (Barlow, 2008), Finn's evaluation of Canadian Broadcasting Corporation (Finn et al., 2003) and Delaney's and O'Toole's evaluation of Irish public broadcasting (Delaney and O'Toole, 2006), Tohmo's evaluation of a Finnish Museum (Tohmo, 2004), the evaluation of the benefits of hosting the Olympic Games (Wicker et al., 2005), the evaluation of Durham Cathedral (Willis, 1994), of the Danish Theatre (Hansen, 1997), of the National Museum of Sculpture in Valladolid (Sanz et al., 2003), of the World Heritage site in Vietnam (Tuan and Navrud, 2008). In this study the contingent valuation allows an economic valuation of a prototypical cultural good, the "Mediterranean Diet District" by estimating the hypothetical visitors' willingness to pay to "experience" the MD heritage. The "concept" of the proposed "Mediterranean Diet District" is not only a space in which cultural heritage is preserved, it is a cultural product in itself, because the manner in which it works may be considered as a specific cultural creation capable of attracting visitors for its innovative concept. So, as usual in Contingent Valuation studies, also in this thesis It was created "a hypothetical - contingent - market and obtained through a survey, the maximum WTP in monetary terms that respondent would award to the good being valued , where supply is represented by person who interviews and demand by the person being interviewed. In CV survey, after being provided with specific information on the aim of the study and the situation to be valued, the respondent is asked about his/her WTP with respect to the good under consideration" (Sanz et al., 2003).

3.2.3 Major Contingent Valuation survey design issues

The drafting of the CV survey was done following the NOAA report guidelines (Arrow et al., 1993) and its refined, adapted and implemented versions used to estimate the non-market value of public goods, particularly environmental, health and cultural goods (Carson et al., 1996; Hansen, 1997; Whitehead and Hoban, 1999; Thompson et al., 2002; Venkatachalam, 2003; Polome et al., 2006; Carson and Groves, 2007; Carson, 2012), in order to be qualified as a source of reliable and useful information obtained (NOAA, 1993).

The major survey design issues discussed below are: the accurate depiction of the prototypical cultural heritage tangible good itself; the general context in which the good would be provided; the payment structure for the good; the elicitation method used; the description of the variables to be measured for predicting a respondent's willingness to pay for the good (Carson et Al., 1994).

3.2.3.1 Depiction of the good to be valued

An accurate description of the prototypical cultural good "Mediterranean Diet District" was provided to respondents to allow them to make a realistic assessment of their willingness to pay for the proposed scenario by giving them a common information asset also to minimize the impact of the so called "information effect" on this CV study (Venkatachalam, 2004). Firstly, it was clarified that it is a project proposal that will be presented among others, to the Club UNESCO of Foggia. During the course of the description of the scenario to be valued they were shown that this project aims at the creation of the "Mediterranean Diet District", located in the area of the province of Foggia, dedicated to the preservation and dissemination of Mediterranean Diet Intangible Cultural Heritage. The goal of this prototypical cultural "good" is to make tangible the cultural heritage of Mediterranean Diet and to allow people to experience it, living, discovering and tasting it and its connected lifestyle, its history and its future developments. Respondents were told that the proposed scenario "Mediterranean Diet District" is equipped with pavilions that through permanent and temporary exhibitions will allow visitors to discover the raw materials, the history and the traditions associated with the Mediterranean Diet and the countries and populations of the Mediterranean area. One of the attraction of the "park" will be the "city of science" which includes, among other things, a study center with R&D laboratories dedicated to the Mediterranean Diet in all its aspects, from economics, environmental and health to agricultural and cultural ones. Agricultural production, processing and preparation of typical and local food products (olive oil, wine, cereal, etc.) will be shown to visitors in multi-purpose areas dedicated to training and entertainment, supported by the use of laboratories dedicated to the simulation of the cooking, culinary and cultural traditions and practices. The "Mediterranean Diet District" also includes large open spaces and attractions to be visited and discovered, as educational gardens and greenhouses dedicated to the cultivation of raw materials such as cereals, olive trees, vineyards, orchards, etc.; green areas equipped for children; reproductions of farms and villages of the Mediterranean area, with specific different countries characteristics with the aim to delineate an "in- park" itinerary of the evolution of the Mediterranean Diet, also by hosting cultural and recreational events of various nature. Restaurants inside the park will be characterized by the use of local products and the menùs they offer will reflect the Mediterranean culinary traditions, offering visitors the chance to taste a traditional "mediterranean" meal, that means they will be prepared with the use of traditional material, following the traditional formulation in terms of ingredients and respectful of traditional type of production and or processing transmitted from generation to generation through oral tradition or other means and applied until today (Trichopoulou et al., 2006), in convivial locations

in total respect of the Mediterranean lifestyle. Among the services offered are included "itinerary packages". They are touristic, recreational and educational itineraries usable outside the park, that involve local rural resources (local community, farms, enterprises and territories of the province of Foggia), as "rural-tourism resources", raising their profiles to capital asset of local rural tourism offer (Garrod et al., 2006), satisfying tourists need of "experience the authenticity" (Cohen, 1988). Finally a virtual, interactive and accessible version of the "Mediterranean Diet District" will be available with a double aim: to allow those who can not be physically present to live this experience and in this way maximizing the cultural dissemination effect and the number of visitors; to create a virtual itinerary to connect the different countries of the Mediterranean area with the purpose to show all the country-specific characteristics of the Mediterranean Diet in a virtual tour beetween past and present.

The information contained in the scenario description were largely consistent and let respondents to figure the "good" to be valued and to understand and evaluate its impact on preservation and dissemination of the Intangible Cultural Heritage of Mediterranean Diet and the impact of the development of the "Mediterranean Diet District" on the local territory, the province of Foggia, also in terms of tourism offer.

3.2.3.2 General provision context

As stated in previous studies an important aspect of a contingent valuation survey is to enable respondents to place the "good" in the correct general context to avoid they to give an artificial importance on the "Mediterranean Diet District" due to the simple fact they were being interviewed on this issue (Carson et Al., 1994). To this end, respondents were asked to express their share of mind if they heard "Mediterranean Diet". Later, they were asked if they have ever heard of Mediterranean Diet as Intangible Cultural Heritage of Humanity (UNESCO) and than the importance they give to the preservation of the MD Intangible Cultural Heritage. They were also asked how much they agree with the assumption of that the preservation of MD Intangible Cultural Heritage may create value both for individuals and the entire global community. These questions help respondents to place the topic in the wright prospective in terms of extent of market and to clarify who hold value for the preservation of good, Mediterranean Diet. This set of questions was followed by a question about the reasons of the importance of preserving to help respondents to place the issue of preserving heritage in the perspective of economic valuation of the intangible cultural heritage of the Mediterranean diet, considering both its use and non use value. These last two questions, we may call it filter questions, besides preventing the embedding effect, also known

as part-whole bias (Venkatachalam, 2004, Bateman et al., 1997, NOAA, 1993), give respondents several opportunities to say that they don't agree with the importance of preservation of MD Intangible Cultural Heritage and it means also preventing the overestimate of their willingness to pay due to socially desiderable answers (Ruijgrok, 2006). After that respendents can read the official UNESCO definition of Mediterranean Diet intangible Cultural Heritage, with the aim to offer them a common information asset, at least sufficient to proceed with a realistic assessment of their willingness to pay. Infact, as confirmed by Venkatachalam in his studies the "information" plays a crucial role in CV method, and the validity of the results depends mainly on the level and nature of information provided to the respondents which may affect both positively and negatively the results (Bergsrtom et al., 1990, Venkatachalam, 2000, Venkatachalam, 2004).

3.2.3.3 Payment structure

Starting from the decision to apply the appropriate property rights framework, that is whether respondents should be asked to pay for obtaining the good "Mediterranean Diet District" or to receive compensation for giving it up (Carson et al., 1994, Hanemann, 1991), and considering the existance of the disparity phenomenon between WTP and WTA influenced by different factors accepted in CVM literature (Venkatachalam, 2004), such as income effect, substitution effect, transaction costs, broad based preferences, etc., it was used questions about willingness to pay rather than willingness to accept one, with the aim to maximize the legitimacy of their valuation exercise. The survey asked for information about individual willingness to pay about a single lump-sum payment amount for individual daily entrance ticket to the "Mediterranean Diet District". Entrance fee is considered a realistic and appropriate payment vehicle especially for users of recreational services (Arif Rahman Hakim et al., 2011) previously used in other studies (Lee, 2007, Barral et al., 2008). Starting from four different initial bids, four sets of euros amounts were used. Respectively: A: 30, 20, 39; B: 20, 15, 30; C: 15, 10, 20, and D: 10, 5, 15 (**Table 1**).

Table 1. Alternative bids for the triple–bounded dichotomous choice questionnaire

WTP non-monetary question		
Yes	No	
WTP a pre-chosen amount of money questions (Yes/No)		
Initial Bid (Yes/No)	**Higher Bid (Yes/No)**	**Lower Bid (Yes/No)**
30 euro	39 euro	20 euro
20 euro	30 euro	15 euro
15 euro	20 euro	10 euro
10 euro	15 euro	5 euro

3.2.3.4 Elicitation method

Starting from the four major types of elicitation techniques available in literature: the bidding game, payment card, open-ended and dichotomous choice approach further divided in single-bounded dichotomous choice, double-bounded dichotomous choice and triple–bounded dichotomous choice (Venkatachalam, 2004), the latter approach was chosen for this CV study. It consists on extending the double-bounded dichotomous choice elicitation design for a further initial non-monetary question to investigate wheter the respondent accepts, in principle, a WTP some unspecified amount (Langford et al., 1996; Bateman et al. 1999,). This choice is supported by numerous studies (NOAA, 1993; Carson et al., 1994; Langford et al., 1998; Bateman et al., 2001,) that demonstrate its statistically efficiency, due to the fact that eliciting whether respondent is willing to pay a pre-chosen higher amount of money if he responds "yes" to the initial bid, or willing to pay a pre-chosen lower amount if he responds "no", provides more information which reduces the variance of the estimated WTP (Langford et al., 1996) and reduces incentives for strategic responses. More precisely, as underline by Carson et al. in his study on Australia's Kakadu conservation zone, "respondents have little opportunity to bias their answers deliberately in the hope of influencing the survey results" and using this elicitation method "less burden is placed on respondents because they are not required to determined the exact maximum willingness to pay, rather only wheter they are willing to pay at least the amount asked". Finally the dichotomous choice method and consequently the triple-bounded one adopted in this study, has demonstrated to be a more realistic and familiar model for the provision of public amenities also because it reflects the consumers' decision making mechanism about private goods purchase (Carson et al., 1994). The choice to use the triple-bounded dichotomous choice method to supplement the dichotomous choice questions was done to contrast

one of the disadvantages of this approach that is it requires a larger sample size that the other approaches, because it collects less information from each respondent, asking only if respondent's WTP lies above or below the pre-chosen amount of money, instead of telling about all the values he is or is not WTP, as done in the open-ended method, (Carson et al., 1994, Bateman et al., 2001).

3.2.3.5 Variables to be measured

As recommended by the NOAA report guidelines, a contingent valuation survey must include a variety of other questions that help to interpret the responses to the primary valuation questions. The survey instrument used to this study containes questions to elicit attitudinal, behavioral and demographic informations from respondets. Demographic variables elicit income, age, sex, education, occupation, the presence of children in the household and respondents' place of residence. Other questions were designed to collect information on respondents' habits in terms of whatching food and culinary TV shows, visiting cultural tourism attractions such as theme parks, cultural districts, etc., visiting local and national and international fair and expositions about food in general (EXPO 2015, Salone del Gusto, CIBUS, etc.). Finally, in terms of habits, respondents were asked if they follow a specific diet, and if yes, which of those listed (vegetarian, vegan, Mediterranean diet, dairy-free, gluten-free, raw food diet, diet with high protein content). An other set of questions was designed to collect information on their knowledge about Mediterranean Diet in general, Mediterranean Diet as Intangible Cultural Heritage of Humanity and about the province of Foggia, its tourist attractiveness, their past visits to province of Foggia area, their desire for a future visit. Attitudinal questions were also asked with the aim to underlying beliefs that Italians hold about the importance of preservation of MD Intangible Cultural Heritage, the value they attribute to its preservation, and the reasons why they considered important to preserve the cultural heritage of Mediterranean diet. The attitudinal questions ranged also from general questions on cultural tourism development in the province of Foggia to specific question on issues concerning the effectiveness of "Mediterranean Diet District" as an innovative way to preserve Intagible Cultural Heritage of Mediterranean diet and to disseminate knowledge and awareness and to evaluate its effect on the increase in tourism demand of the province of Foggia. A clear definition of each variable is summarized in **Table 2**. Many of these supplemental questions are used in constructing the estimate of the valuation function (Carson et al., 1994).

Table 2. Variables definitions

VARIABLE	DEFINITION
AGE	Respondent's age (age ranges: 1=18-25; 2=26-35; 3=36-45; 4=46-55; 5=over 60
GENDER	0=man; 1=woman
OCC	Occupational state (1=student; 2=employee; 3=professional; 4=unemployed: 5=retired; 6=other)
EDU	Education grade (1=higher diploma; 2=bachelor degree; 3=master degree; 4=PHD)
INCOME	Respondent's reported monthly income (amount ranges: 1=no income ; 2= less than 1000 euro; 3=from 1001 to 1500 euro; 4=from 1501 to 2000 euro; 5= from 2001 to 3000 euro; 6=more than 3001 euro)
SON	If respondent has children 1=yes; 0=no)
RESID	Respondent place of residence (1= in Apulia, and in the province of Foggia; 2= in Apulia but not in province of Foggia; 3=Italy, but not in Apulia; 4= abroad)
VEXPO	Is an indicator of wheter the respondent has visited EXPO or other food related fairs or events in last 2 years (1=yes; 0=no)
VPARK	Is an indicator of wheter the respondent has visited thematic parks or cultural districts in the last 2 years (1=yes; 0=no)
FOOD_TV	Is an indicator which is equal 1 if respondent watchs frequently food and culinary related TV shows
DIET	Is an indicator which is equal 1 if the respondent follow a specific dietary pattern
DIET TYPE	Respondent's diet type (1=vegetarian; 2=vegan; 3=Mediterranean diet; 4= raw food diet; 5=high protein content; 6=dairy free; 7=gluten free; 8=other)
MD1	Shows the respondent's share of mind if he heard "Mediterranean Diet It is equal to: 1=a dietary pattern; 2=food pyramid; 3=lifestyle; 4=traditions and recipes; 5= a specific food (olive oil, cereals, legumes,fish, etc.); 6= a model of sustainable development; 7= a geographic area; 8= a set of production and consumption patterns; 9= others
ICH_MD	Is an indicator which is equal 1 if respondent has heard about Mediterranean diet as Intangible Cultural Heritage of Humanity
PRESERVE_IMP	Measures how respondent considers that it is important to preserve the Intangible Cultural heritage of the Mediterranean Diet . Higher values indicate greater importance. Measure on a 5 point scale with 1= not important and 5= very important
PRESERVE_VALUE	Measures how strongly the respondent feels that preserving the Intangible Cultural heritage of the Mediterranean Diet may create value for both individuals and humanity in general. Higher values indicate stronger agreement. Measures on a 5 point scale with 1=strongly disagree and 5=strongly agree
PRESERVE_MOT	Shows the respondent's motivation linked to the importance of preservation of the the Intangible Cultural heritage of the Mediterranean Diet (1= for future generations; 2=for those who, although they are currently not interested but in future may change their mind; 3= for those who are not yet aware; 4= for its intrinsic value; 5= to be available to all; 6= I think it is not important to be

	preserved; 7= other
TOURISM_VALIDITY	Measures how strongly the respondent feels, according to the description provided, that "Mediterranean Diet District" is a great tourism tool to preserve and disseminate the Intangible Cultural Heritage linked to the Mediterranean Diet. Higher values indicate greater agreement. Measures on a 5 point scale with 1=strongly disagree and 5=strongly agree
TOURISM_DEMAND	Measures how strongly the respondent feels, according to the description provided, that "Mediterranean Diet District" should increase the tourism demand of the province of Foggia. Higher values indicate greater agreement. Measures on a 5 point scale with 1=strongly disagree and 5=strongly agree
TOURISM_RESOURCE_ ATTRACTIVENESS	Measures the tourist attractiveness of the"Mediterranean Diet District". Values indicate how strongly they would like to visit it. Measures on a 5 point scale 1=not at all and 5=very much
VISIT_PUGLIA	Is an indicator that respondent has visited Puglia for tourism. 1=Yes; 0= No
KNOW_PF	Is an indicator that respondent knows the province of Foggia area =Yes; 0= No
VISIT_PF	Is an indicator that respondent has visited province of Foggia area for tourism. 1=Yes; 0= No
ATTRACT_PF	Measures the tourist attractiveness of the province of Foggia area. Higher values indicate stronger agreement. Measures on a 5 point scale with 1=strongly disagree and 5=strongly agree
FUTURE_RE_CULT	Measures agreement by respondent that the greatest value, in tourism sector, of the province of Foggia is in innovative recreational and cultural activities. Higher values indicate stronger agreement. Measures on a 5 point scale with 1=strongly disagree and 5=strongly agree
RECULT_1	Shows what kind of cultural and recreational activities, the respondent thinks that should be developed to improve its tourist offer. (1= food itineraries; 2= cultural itineraries as thematic tours; 3= natural trails dedicated to specific types of sport sas biking, walking, jogging, etc.; 4= educational tours dedicated to specific targets of tourists (families, wine lovers, youth, kids, sport lovers, etc.; 5= events organization as festivals, fairs, markets, etc.; 6= other

Source: Author's elaboration

3.2.4 Survey pre-test, method of data gathering and sample design

A pre-test of the survey instrument was conducted and showed the need to modify the order of the different sections of the survey to improve its clarity and comprehensibility. The "scenario" description has also undergone some changes as a result of the pre-test, to improve its completeness and understandability and to avoid problems and general criticism against the reliability of contingent valuation approach, due to vagueness, lack of information and unreality of the scenario to be valued by respondents (NOAA, 1993). The survey was implemented between July and

October 2016, using nationwide internet-based interviews accompanied by a brief and clear introduction on the purpose of the survey, the time required to complete the questionnaire and the anonymity of the responses.. A total of 897 completed interviews were conducted with a response rate of 100%. The confirmation of the success and of the seriousness with which the questionnaire was done by respondents was confirmed by numerous positive feedbacks received by the author, both in person, by phone, sms and emails.

3.3 Theoretical framework

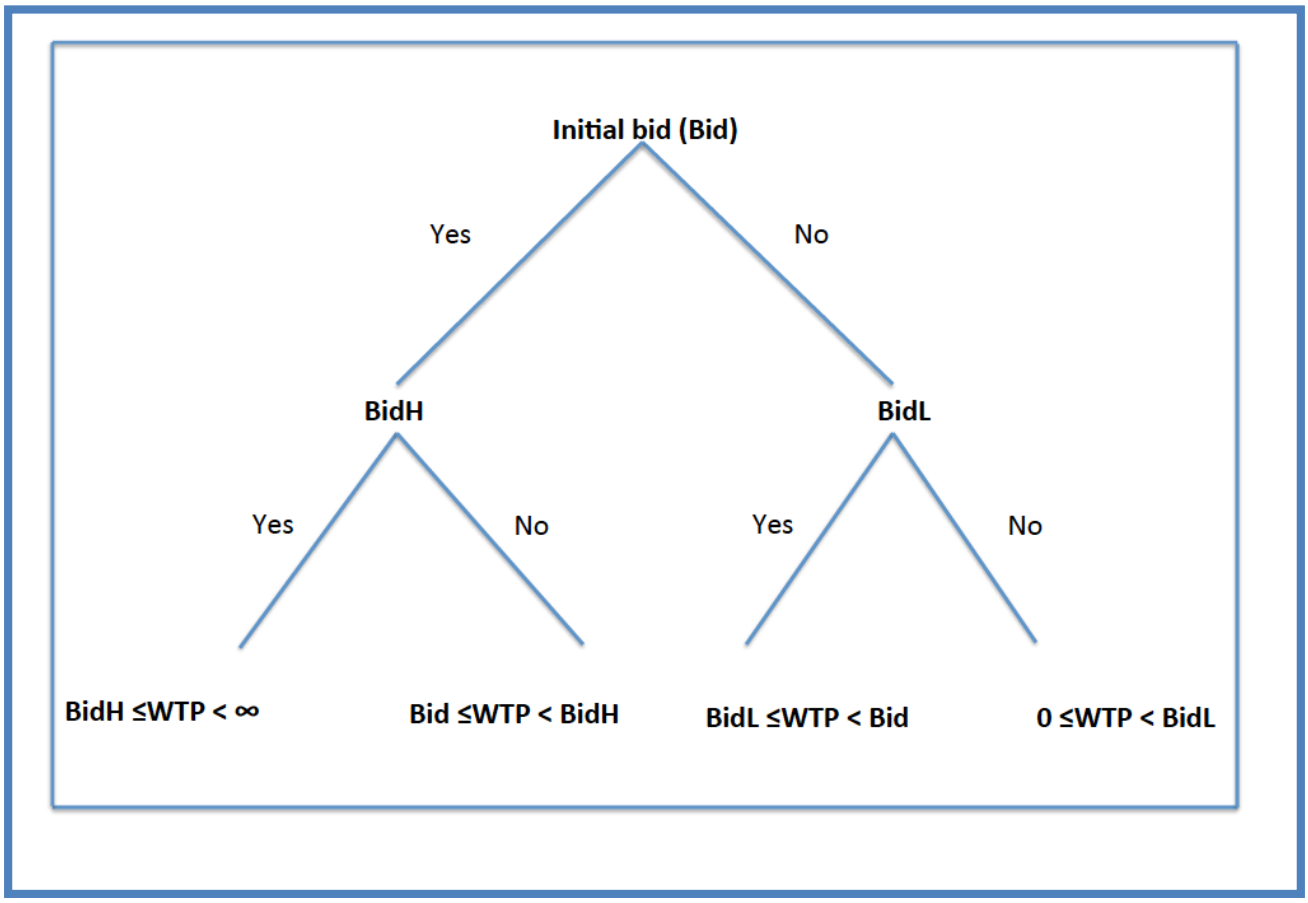
As suggested by Hanemann et al. (1991, 1994) dichotomous question with follow-up or double-bounded model is an alternative to improve the efficiency of the estimation of the WTP. In this case, a follow-up dichotomous question is asked after the first dichotomous choice question. If the respondent answers yes to the first question then he is asked about his WTP for a higher amount. If he answers no to the first question then a lower amount is offered.

This implies the endogeneity of the second question that means that the amount asked depends on the answer obtained for the first question (which is exogenous). This method, providing two answers for each respondent, gives more information but at the same time makes the econometric estimation slightly more complicated. Considering the first bid amount t1 and the second one t2 each respondent will fall into one of the following categories **(Figure 3):**

1. The respondent answers yes to the first question and no to the second, then $t2 > t1$. In this case we can infer that $t1 \leq WTP < t2$.
2. The respondent answers yes to the first question and yes to the second, then $t2 \leq WTP < \infty$.
3. The respondent answers no to the first question and yes to the second, then $t2 < t1$. In this case we have that $t2 \leq WTP < t1$.
4. The respondent answers no to the first and second questions, then we have that $0 \leq WTP < t2$.

In cases 1 and 3 we have well defined intervals for the willingness to pay for each respondent, in the intervals 2 and 4 information gathered are similar to those obtained using a single question but in this case the value of t2 is closer to the true value of the willingness to pay than t1. This confirms that the dichotomous choice model with follow-up provides more information than the simpler format with one question. Extending the double-bounded dichotomous choice elicitation design for a further initial non-monetary question to investigate wheter the respondent accepts, in principle, a WTP some unspecified amount (Bateman et al. 1999, Langford et al., 1996) further improves the quality of the information obtained.

Figure 3. Questioning Sequence



Source: Author elaboration.

3.3.1 Estimating WTP

The econometric method known as double-bounded or interval data model was chosen to estimate willingness to pay, allowing an efficient use of the data obtained. As asserted by Lopez-Feldman (2012), this method estimates WTP under the assumption of the existence of a single valuation function behind both the two answers of the double bounded dichotomous approach. Following Lopez-Feldman (2012), the dichotomous variables that capture the response to the first and the second closed question (yes/no) are defined as y^1_i and y^2_i, and the probability that the respondent answers positively to the first question and negatively to the second is expressed as Pr (y^1_i=1, y^2_i=0|z_i)= Pr(s,n). Given this premise and considering Lopez-Feldman's assumption (2012) that WTP_i (z_i,u_i) = $z'_i\beta + u_i$ and $u_i \sim N(0, \sigma^2)$, the probability of each one of the three cases is given by case 1 (answer to first question=yes; answer to second question=no), where the last expression follows from Pr ($a \leq X < b$) 0 F(b) – F(a):

1. $y_i^1 = 1$ and $y_i^2 = 0$.

$$\begin{aligned} Pr(s,n) &= Pr(t^1 \leq WTP < t^2) \\ &= Pr(t^1 \leq z_i'\beta + u_i < t^2) \\ &= Pr\left(\frac{t^1 - z_i'\beta}{\sigma} \leq \frac{u_i}{\sigma} < \frac{t^2 - z_i'\beta}{\sigma}\right) \\ &= \Phi\left(\frac{t^2 - z_i'\beta}{\sigma}\right) - \Phi\left(\frac{t^1 - z_i'\beta}{\sigma}\right) \end{aligned}$$

Following the symmetry of the normal distribution:

$$Pr(s,n) = \Phi\left(z_i'\frac{\beta}{\sigma} - \frac{t^1}{\sigma}\right) - \Phi\left(z_i'\frac{\beta}{\sigma} - \frac{t^2}{\sigma}\right)$$

So case 2 (answer to first question=yes; answer to second question = yes):

2. $y_i^1 = 1$ and $y_i^2 = 1$.

$$\begin{aligned} Pr(s,s) &= Pr(WTP > t^1, WTP \geq t^2) \\ &= Pr(z_i'\beta + u_i > t^1, z_i'\beta + u_i \geq t^2) \end{aligned}$$

Appying Bayes rule, Pr(A,B) = Pr(A|B) * Pr(B) (Lopez-Feldman, 2012), we obtain:

$$Pr(s,s) = Pr(z_i'\beta + u_i > t^1 | z_i'\beta + u_i \geq t^2) * Pr(z_i'\beta + u_i \geq t^2)$$

It is therefore by definition $t^2 > t^1$ and then Pr $(z'_i\beta + u_i > t^1 | z'_i\beta + u_i \geq t^2) = 1$ which implies:

$$\begin{aligned} Pr(s,s) &= Pr(u_i \geq t^2 - z_i'\beta) \\ &= 1 - \Phi\left(\frac{t^2 - z_i'\beta}{\sigma}\right) \end{aligned}$$

By symmetry it is:

$$Pr(s,s) = \Phi\left(z_i'\frac{\beta}{\sigma} - \frac{t^2}{\sigma}\right)$$

So, we obtain case 3 (answer to first question=no; answer to second question=yes), and case 4 (answer to first question=no; answer to second question=no),:

3. $y_i^1 = 0$ and $y_i^2 = 1$.

$$\begin{aligned} Pr(s,n) &= Pr(t^2 \leq WTP < t^1) \\ &= Pr(t^2 \leq z_i'\beta + u_i < t^1) \\ &= Pr\left(\frac{t^2 - z_i'\beta}{\sigma} \leq \frac{u_i}{\sigma} < \frac{t^1 - z_i'\beta}{\sigma}\right) \\ &= \Phi\left(\frac{t^1 - z_i'\beta}{\sigma}\right) - \Phi\left(\frac{t^2 - z_i'\beta}{\sigma}\right) \end{aligned}$$

$$Pr(s,n) = \Phi\left(z_i'\frac{\beta}{\sigma} - \frac{t^2}{\sigma}\right) - \Phi\left(z_i'\frac{\beta}{\sigma} - \frac{t^1}{\sigma}\right)$$

4. $y_i^1 = 0$ and $y_i^2 = 0$.

$$\begin{aligned} Pr(n,n) &= Pr(WTP < t^1, WTP < t^2) \\ &= Pr(z_i'\beta + u_i < t^1, z_i'\beta + u_i < t^2) \\ &= Pr(z_i'\beta + u_i < t^2) \\ &= \Phi\left(\frac{t^2 - z_i'\beta}{\sigma}\right) \end{aligned}$$

$$Pr(n,n) = 1 - \Phi\left(z_i'\frac{\beta}{\sigma} - \frac{t^2}{\sigma}\right)$$

Equations of cases 1 to 4 do not correspond directly to a prexistent model, but Lopez-Feldman (2012) proposed a likelihood function to directly obtain estimates for β and σ using maximum likelihood estimation. It is called double-bounded model and it is:

$$\sum_{i=1}^{N}\left[d_i^{sn}\ln\left(\Phi\left(z_i'\frac{\beta}{\sigma}-\frac{t^1}{\sigma}\right)-\Phi\left(z_i'\frac{\beta}{\sigma}-\frac{t^2}{\sigma}\right)\right)+d_i^{ss}\ln\left(\Phi\left(z_i'\frac{\beta}{\sigma}-\frac{t^2}{\sigma}\right)\right)\right.$$
$$\left.+d_i^{ns}\ln\left(\Phi\left(z_i'\frac{\beta}{\sigma}-\frac{t^2}{\sigma}\right)-\Phi\left(z_i'\frac{\beta}{\sigma}-\frac{t^1}{\sigma}\right)\right)+d_i^{nn}\ln\left(1-\Phi\left(z_i'\frac{\beta}{\sigma}-\frac{t^2}{\sigma}\right)\right)\right]$$

where d_i^{sn}, d_i^{ss},d_i^{ns}, d_i^{nn} are the indicator variables that take the value of one or zero depending on the relevant case for each respondent, that means, a given individual contributes to the logarithm of the likelihood function in only one of its four parts, obtaining directly β y σ.

3.3.2 Investigating the determinants of WTP

In order to examine the explanatory variables influencing respondents' WTP, a two-stage approach was chosen. It implies a first approach in which the binary decision to be willing to pay or not to pay is investigated through a traditional logit model, and a second one to investigate the probability of falling in one of the bid intervals by comparing two models, an ordered logistic model and a generalized ordered logit, applied on the entire sample[1], including those respondents with zero WTP.

Starting from N independent observations and from the dependent variable WTP_i= (i=0,1…,N) it could be argued that each respondent, at the time the survey was conducted, belongs to one of the two groups: respondents who were not willing to pay (option WTP_i=0); respondents with a positive WTP (option WTP>0). A logit model is used to model this binary decision to pay or not to pay. Starting from what affirmed by Catalano et al., (2016) the latent regression underlying the response variable may be defined as:

$p^*_1 = X_{1i}\gamma + u_i$

where p^*_i is the latent variable that measures the difference in utility derived from a positive and negative willingness to pay of each respondent i, X_1 is a vectore of exogenous variables affecting

[1] The whole sample was used because the results of the analisys do not confirm the case where, as explained in previous studies (Geda et al., 2001, Harrys and Zhao, 2007; Lera-Lopez and Raun-Garate, 2007; Kasteridis et al., 2010, Catalano et al., 2016), including observations with zero WTP in the estimate of the ordered logit model may invalidate the results because the presence of many zeros in the response variable, requesting two distinct data generating processes and WTP behaviours that the ordered logit model, a single latent equation model, would not allow for the differentiation between these two aspects.

respondents' preferences, γ is a vector containing all the parameters in the model and u is the error term.

The relation of the observed binary variable P_i (WTP) with p^*_i is:

$$P_i = \begin{cases} 1 & if\ p_i^* > 0 \\ 0 & otherwise \end{cases}$$

It follows that the probability of paying is:

$$\Pr(P_i = 1) = \Lambda(X_{1i}\gamma)$$

where $\Lambda(.)$ is the logistic cumulative distribution function of u_i and the observed values of P_i are the realisations of a binomial variable with probabilities given by abovementioned equation conditional on X_{1i} (Catalano et al., 2016). Thus the likelihood function is given by:

$$L(\gamma|P_i, X_{1i}) = \prod_{P_i=0}[1 - \Pr(P_i = 1)] \prod_{P_i=1} \Pr(P_i = 1)$$

The second step of the research is focused on the interval of the bid chosen by respondent obtained by their answers to dichotomous questions with follow-up proposed in the survey. An ordered variable that captures the responses to the first and the second WTP questions of each respondent was created (NN, NY, YN, YY). This dependent variable WTP_i, is an ordered categories variable where the order of categories (intervals values from 0 to J) is meaningful but the distance beetween them are arbitrary, and where only if P_i=1 it is possible to observe nonzero values. Confirming previous work about ordered logit model (Catalano et al, 2016), the joint likelihood of the entire sample is:

$$L(\theta|WTP_i) = \prod_{P_i=0}[1 - \Pr(P_i = 1)] \prod_{P_i=1} \Pr(P_i = 1) \Pr(WTP_i|P_i = 1)$$

where θ is a vector containing all the parameters in the model and the results are taken over sample observations satisfying negative willingness to pay (Pi=0) and positive willingness to pay (Pi=1). As suggested by other authors (McElvey and Zavoina, 1975; Greene, 2012), this approach handled Pr ($WTP_i|P_i$= 1) by an ordered logit model. This model reveals the respondents' strength of own preference with respect to the combination of their answer to the first and second bid question. In this way, the expression of those preferences is given in an ordered categories outcome with a limited number of choices. It follows that the latent regression of the model is $WTP^*_i = X_{2i}\beta+\varepsilon_i$ where WTP^*_i is interpreted as the propensity to be willing to pay at different bids intervals, X_2 is a vector of the explanatory variables and ε_i is the random error term that follows a logistic distribution.

Williams (2006) defined the ordered logit model "a special case of the generalized ordered logit model equivalent to a series of bynary logistic regressions where categories of the dependent

variable are combined, e.g., if M=4, then for J=1 category 1 is contrasted with categories 2,3, and 4; for J=2 the contrasti s between categories 1 and 2 versus 3 and 4; and for J=3, it is categories 1,2 and 3 versus category 4." He explain the ordered logit as a parallel-lines models (williams, 2006) as follows:

$$P(Y_i > j) = g(X\beta) = \frac{\exp(\alpha_j + X_i\beta)}{1 + \{\exp(\alpha_j + X_i\beta)\}}, \quad j = 1, 2, \ldots, M-1$$

It implies the "parallel regressions assumption" where the β's, but not the α's , are required to be the same for all values of j and because only α's differ across values of j, the M-1 regression lines are all parallel (Williams, 2006). To face the key problem of the violation of the parallel-lines assumptions caused by the common case in which one or more β's differ across values of j, in this study also a generalized ordered logit model (gologit2) was applied to investigate the variables that determinate the WTP. This model can overcome this limitation (Williams, 2006). The generalized ordered logit model can be written using the same abovementioned formula of the parallel-lines model where the number of the categories of the ordinal dependent variable is M. It follows that the probabilities tha Y will take on each of the values 1,.., M are equal to:

$$\begin{aligned} P(Y_i = 1) &= 1 - g(X_i\beta_1) \\ P(Y_i = j) &= g(X_i\beta_{j-1}) - g(X_i\beta_j) \quad j = 2, \ldots, M-1 \\ P(Y_i = M) &= g(X_i\beta_{M-1}) \end{aligned}$$

4. Results and discussions

The survey was implemented between July and October 2016, using nationwide internet-based interviews accompanied by a brief and clear introduction on the purpose of the survey, the time required to complete the questionnaire and the anonymity of the responses. The spread of the questionnaire through internet has taken place thanks to a word of mouth mechanism, supported also, by the use of the emails as well as of social networks like Facebook and especially Whatsapp.

The sending of the questionnaires was always anticipated by direct contact with the interviewee[2], both in person or with a phone call, SMSs, chat messanges on social networks, to establish a direct contact between interviewer and interviewee and to clarify the objective seriousness as well as to give precise directions about how compile the questionnaire and how to activate the cascade mechanism of diffusion of the questionnaire within interviewee's own contacts. The immediacy of the communication instruments used (email, phone and social networks), has given the opportunity to receive real-time feedbacks, which allowed an ongoing evaluation of the effectiveness and comprehensibility of the questionnaire, and, suggested that the survey has gone well and that it has been taken seriously by respondents. A total of 897 valid questionnaires with a response rate of 100% was collected. In this section of the thesis, results of the field survey are presented. They are obtained using the data analysis and statistical software STATA 14.2

4.1 Data and descriptive statistics

The sample consists of 897 Italian respondents of which about the 48% resident in Apulia region and in the province of Foggia, the 7% in Apulia but not in the province of Foggia and about the 42% from other Italian regions. Only the 2% of the respondents are resident abroad at the time of the survey. The interviewees are 613 women (68%) and 284 men (32%), of which about the 33% aged between 26 and 35 years, instead the remaining part of the sample is divided quiete equally among the other age classes investigated, including that of the "over 55" with 146 respondents (16%). This is a good results, because of the use of internet-based interviews and its communication instruments as email, social networks and mobile phone, could have altered the composition of the

[2] In the first phase the interviewer was the author of this thesis, then with the activation of a cascade mechanism, interviewees, after being contacted personally and duly trained, have become in turn interviewers. Each of them has fulfilled its mission to spread the questionnaire among their contacts, supporting it with a brief introduction on the purpose of the survey, the time required to complete the questionnaire and the anonymity of the responses, and finally activating in turn the cascade mechanism of diffussion between own contacts, contacting them directly and instructing them in turn.

sample, concentrating it only on the younger age groups accustomed to using them for many purposes, but that did not happen. About the 46% of respondents declares to have children. Regarding income, respondents were inquired on the monthly availability of a personal income. The distribution of the income variable is reported in **Figure 4**. About the 50% of the sample is concetrated in the income categories ranging from EUR 1001 to EUR 1500 (27%) and in that of less then EUR 1000 (20%), and 189 respondents (21%) state to have no income.

Figure 4. Distribution of monthly income

income	Freq.	Percent	Cum.
no income	189	21.07	21.07
< 1000 euro	178	19.84	40.91
from 1001 to 1500 euro	244	27.20	68.12
from 1501 to 2000 euro	148	16.50	84.62
from 2001 to 3000 euro	76	8.47	93.09
>3000 euro	62	6.91	100.00
Total	897	100.00	

Source: Author's elaboration with STATA 14.2

The Spearman's correlation coefficient between the socio-demographic variables investigated (**Figure 5**) shows a positive correlation between income and age (0,44), as well as between income and the presence of children (0,30), education level (0,26) and occupational state (0,14), meaning that for the sample interviewed, monthly income increase with higher level of education and with increasing age. The results of the correlation analysis, also show that with increasing age there is a greater presence of children , and respondents deal with a job position that ensures a higher income. Individuals, who declare to have no income, come mostly from the province of Foggia, instead gradually the presence of higher incomes, respectively, increases if respondents are resident in Apulia (not province of Foggia) and in the other Italian regions or abroad.

Finally, the negative correlation coefficient between income and gender (-0,19) shows that women have lower personal monthly income than men.

Figure 5. Spearman's correlation coefficient between socio-demographic variable

	income	age	gender	occ	edu	son	resid
income	1.0000						
age	0.4451	1.0000					
gender	-0.1969	-0.0630	1.0000				
occ	0.1465	0.5529	0.0354	1.0000			
edu	0.2687	-0.0338	-0.0069	-0.0383	1.0000		
son	0.3001	0.6629	0.0004	0.4230	-0.1458	1.0000	
resid	0.1689	-0.0897	-0.0129	-0.1608	0.1778	-0.1315	1.0000

Source: Author's elaboration with STATA 14.2

Attitudes variables analisys reveal that a good portion of respondents has shown to be involved in tourism activities related to culture and entertainment. In detail, the 90% of the sample has visited thematic parks (Disneyland, OceanWord, Gardaland, Italia in miniatura etc.) and cultural districts for example science district of Valencia, town of science in Naples, museum districts etc., and more than the 62% of the respondents has visited national and international cultural events related to food as EXPO2015, Salone del Gusto di Torino, food related fair as Cibus or food related scientific event as Seeds&Chips, in the last two years.

The results of the survey show that the Apulia is a well-known tourism destination, infact the 87,50% of the respondents has visited it for tourism purpose, the 78% knows the province of Foggia area and the 67% equal to 602 respondets, has visited specifically the province of Foggia area for tourism purpose. Of this 67%, 178 respondents come from the rest of Italy (not Apulia) and from abroad. With respect to food related activities, 653 interviewees (73%) watch frequently TV show related to food and cousine. They were asked ,also, if they follow a specific diet and the 65% says "no", instead of the remaining 35% (318 respondents) who declare to adopt a specif dietary pattern, of which 211 (23%) declare to follow the Mediterranean diet (**Figure 6**).

Previous knowledge and awareness of respondents about the Mediterranean Diet and then about the Mediterranean Diet as Intangible Cultural Heritage of Humanity (UNESCO) as well as their attitude towards preservation of this intangible cultural heritage, were investigated before going to the specific case of the "Mediterranean Diet District". First of all, they were asked what they firstly think if they heard "Mediterranean Diet". The 49% of the sample has answered "a dietary pattern", the 23% associates MD to "a lifestyle", the 12% to "the food pyramid", followed by the 10% that answered "traditions and recipes". Only a total of 6% of the respondents, when heard "Mediterranean Diet" declared to think about "a specific food, as olive oil, cereals, fish, wine,

legumes, etc." and a totalo of 3,57% respondents is divided between "a model of sustainable development" or "a geographic area" or "a set of production and consumption patterns".

Figure 6. Respondents' diet habits

diet_type	diet No	Yes	Total
-999	579	0	579
vegetarian	0	10	10
vegan	0	9	9
Mediterranean diet	0	211	211
high protein content	0	33	33
dairy free	0	19	19
gluten free	0	15	15
other	0	21	21
Total	579	318	897

Source: Author's elaboration with STATA 14.2

Furthermore, they were asked if they have never heard about MD as ICH of Humanity and 401 individuals (45%) answered to have never heard about it. Out of 897 respondents, 554 (61,76%) value "very important" to preserve ICH of MD, 227 (25,31%) value it "important" and only 4 "not important". By investigating the reasons underlying the importance of preserving the ICH of MD, the results reveal that the sample considers important to preserve it for it non-use value. Infact, more than the 60% of the sample considers important to preserve it to make it available to future generations (bequest value), the 6,53% to make it available for current non-users that in future may change their mind (option value), the 5,35% for people that not yet known it and the 22,30% for its mere existence value. Detailed results are presented in **Table 3**.

Questions related to willingness to pay for the proposed "scenario", the "Mediterranean Diet District" are preceded by questions dedicated to investigate respondents' perception of the validity of the above-mentioned project as innovative cultural good able to contrast the progressive erosion of the MD ICH and as an alternative local tourism resource which may to be considered a strong tourism attractor for the province of Foggia area. After reading the description of the project"Mediterranean Diet District", provided in the questionnaire, the 50,17% of the respondents strongly agree with the statement "the "Mediterranean Diet District" is an excellent tool for preserving and disseminating ICH linked to the Mediterranean diet", the 32,22% agree, instead 126 individuals (14%) are undecided about and only the 5% disagree.

In terms of increase of tourism demand in the province of Foggia due to the realization of the park, more than the 41,25% of the sample strongly agree with the statement "The construction of the "Mediterranean Diet District" in the province of Foggia, may increase the tourist demand of this territory", the 33,56% agree , but also the 20% of the sample is undecided about. Respondents were also asked about its tourism attractiveness, expressed in terms of how strongly they would like to visit it (**Figure 7**). Of 897 respondents, more than the 80% evaluates the "Mediterranean Diet District" as a cultural good with high tourist attractivity, expressing strong intention to visit it and, only 38 respondents (4,24%) are not at all or slightly interested to visit it. The remaining 14% is moderately attracted.

Table 3. Knowledge of Mediterranean Diet as Intangible Cultural Heritage of Humanity and attitude towards its preservation

Variables	**Code**	**Number**	**Percent**
Knowing MD as ICH of Humanity (UNESCO)	0=No	401	44.70
	1=Yes	496	55.30
Importance of preserving ICH of MD	1= Not important	4	0.45
	2=Slightly important	15	1.67
	3= Moderately important	97	10.81
	4= Important	227	25.31
	5= Very important	554	61.76
Preserving ICH of MD create value for you as individuals as well as for the entire world community	1= Strongly disagree	3	0.33
	2= Disagree	14	1.56
	3= Undecided	142	15.83
	4= Agree	258	28.76
	5= Strongly agree	480	53.51
Principal motivation of preserving ICH of MD	1= For future generations	545	60.76
	2= For those who, although they are currently not interested but in future may change their mind	57	6.35
	3= For those who are not yet aware	48	5.35
	4= For its intrinsic value	200	22.30
	5= To be available to all	35	3.90
	6= I think it is not important to preserve	10	1.11
	7= Other	2	0.22

Source: Author's elaboration

Figure 7. Tourism attractiveness of the Mediterranean Diet District

tourism_resource_attractiveness	Freq.	Percent	Cum.
not at all	11	1.23	1.23
slightly	27	3.01	4.24
moderately	128	14.27	18.51
very	323	36.01	54.52
very much	408	45.48	100.00
Total	897	100.00	

Source: Author's elaboration with STATA 14.2

Finally a set of questions explains: if respondents agree in defining the province of Foggia an appealing tourist destination; if they believe that the development of innovative cultural and recreational activities may be a valuable strategy of tourism development of this territory; what kind of the above mentioned activities the respondents think that should be developed to improve its tourist offer. About the 63% of the respondents strongly agree (32,55%) or agree (30,77%) in defining the province of Foggia an appealing tourist destination, the 26% of respondents are undecided about its tourist attractiveness and about 10% of respondent does not evaluate the province of Foggia an interesting tourism destination. A future improvement of the tourism offer of this territory by developing cultural and recreational activities have the consent of about the 80% of the respondents, the remaining 20% disagrees (2,68%) or is undecided (17,50%). Food itineraries (59%) and cultural ones (20,85%) are the first two categories of tourism activities that respondents think that should be developed in the province of Foggia, followed by educational tours dedicated to specific targets as children, families, wine lovers, sportsmen and women, etc. (8,47%), natural itineraries dedicated to specific sports as bike, run, trekking, diving, etc. (7,25%) and finally by events organization as festivals and fairs (4,46%).

Also the descriptive statistics of questions related to WTP are now explained. Willingness to pay for the "Mediterranean Diet District" was asked in the following way. First, a general question was submitted to detect respondents' WTP a daily entrance ticket for the "Mediterranean Diet District" without mentioning any bid (**Figure 8**).

Figure 8. Non-monetary WTP

wtp_	Freq.	Percent	Cum.
No	187	20.85	20.85
Yes	710	79.15	100.00
Total	897	100.00	

Source: Author's elaboration with STATA 14.2

The 79,15% equal to 710 individuals express a positive willingness to pay. Afterwards the remaining 187 respondents (20,85%) that declare they would not be willing to pay, were asked the reason why of this choice. With the 58,46% ,"I think it should be free entrance" is the first reason why respondents are not willing to pay for "Mediterranean Diet District" daily entrance ticket, followed by "I do not believe that pay the entrance fee solves the problem of preservation and dissemination of the cultural heritage of the Mediterranean Diet" answered by the 17,44% of the respondents with negative willingness to pay. The 8,72% of interviewees answered that the limited availability of income is the principal reason why they are not willing to pay for a daily entrance ticket to the park. Respectively, the 6,67% and the 6,15% of the sample declare that the reason why they are not willing to pay are "I'm not interested" and "I would rather pay to visit other attractions or other places". Because of the elicitation approach chosen, the triple–bounded dichotomous choice, after the initial non-monetary question to investigate wheter the respondent accepts, in principle, a WTP for the "Mediterranean Diet District" daily entrance ticket, a sequence of questions (see **Figure 3**) with specific money amount were asked. So, we obtained two answers for each respondent: if respondent answers that he/she is willing to pay the first amount of money proposed as daily entrance fee to the park, then he/she is asked about his/her willingness to pay for higher amount; if he/she answered no to the first question then a lower amount is offered. Started from 4 "initial bids" randomly assigned, four sets of euros amounts were used, A: 30, 20, 39; B: 20, 15, 30; C: 15, 10, 20, and D: 10, 5, 15 (see **Table 1**). To explain the results obtained the definition of some of the variables used are presented in **Table 4.**

Table 4. WTP variables definition

Name of the variable	Definition
bid1	initial amount (bid) in euros
bidh	high bid in euros
bidl	low bid in euros
nn	= 1 if the answer to the willingness to pay questions was no, no
ny	= 1 if the answer to the willingness to pay questions was no, yes
yn	= 1 if the answer to the willingness to pay questions was yes, no
yy	= 1 if the answer to the willingness to pay questions was yes, yes
depvar	indicator variable with the following structure (=1 if nn=1, =2 if ny=1, =3 if yn=1 and =4 if yy=1)

Source: Lopez-Feldman, 2012

The distribution of the amount of the initial bid randomly assigned is: 10 euro to the 24,86% of the interviewees, 15 euro to the 25,08%, 20 euro to the 25,31% and 30 euro to the 24,75%. It means that there is approximately the same number of individuals in each group of them. The fraction of respondents that answered with a positive WTP to the first bid proposed is equal to the 29,21%. The remaining 70,79% of the sample answered "No" when they were asked if they are willing to pay the first bid amount of money. **Figure 9** shows how respondents are sensible to the bid amount (Lopez-Feldman, 2012), that is to say that results shows that if the bid amount, proposed in the first WTP question, goes up the proportion of the individuals that give positive answer goes down.

Figure 9. Respondents' WTP to the first bid amount asked

	bid1				
answer1	10	15	20	30	Total
0	106	153	184	192	635
1	117	72	43	30	262
Total	223	225	227	222	897

Source: Author's elaboration with STATA 14.2

The variable "DepVar" summarize the sample's answers to the first and second bid questions, identifying four categories of respondents: those who responded negatively to both questions (No/No = NN), those who are not willing to pay the first bid, but accetpt to pay the second one (No/Yes = NY), those who responded positively to the first question and negatively to the second (Yes/No = YN) and finally respondents who are willing to pay both the first and the second bid amount asked (Yes/Yes =YY). Respectively the percentages of the sample are 44,15% of NN, 26,64% of NY, 22,19% of YN and 7,02% of YY (**Figure 10 (a)**). **Figure 10 (b)** also shows what happen for each sets of bids assigned.

Figure 10 (a). Frequencies of sample's responses to the first and secon bid questions

DepVar	Freq.	Percent	Cum.
NN	396	44.15	44.15
NY	239	26.64	70.79
YN	199	22.19	92.98
YY	63	7.02	100.00
Total	897	100.00	

Source: Author's elaboration with STATA 14.2

Figure 9 (b). Frequencies of sample's responses to the first and secon bid questions for each sets of bids

Bid (10; 15; 5)

DepVar	Freq.	Percent	Cum.
1	47	21.08	21.08
2	59	26.46	47.53
3	90	40.36	87.89
4	27	12.11	100.00
Total	223	100.00	

Bid (15; 20; 10)

DepVar	Freq.	Percent	Cum.
1	68	30.09	30.09
2	86	38.05	68.14
3	58	25.66	93.81
4	14	6.19	100.00
Total	226	100.00	

Bid (20; 30; 15)

DepVar	Freq.	Percent	Cum.
1	133	58.85	58.85
2	50	22.12	80.97
3	34	15.04	96.02
4	9	3.98	100.00
Total	226	100.00	

Bid (30; 39; 20)

DepVar	Freq.	Percent	Cum.
1	148	66.67	66.67
2	44	19.82	86.49
3	17	7.66	94.14
4	13	5.86	100.00
Total	222	100.00	

Source: Author's elaboration with STATA 14.2

Finally, following Carson (1994), " asking each respondent two discrete choice questions define an interval estimate of their willingness to pay: a respondent' WTP could be categorized as being less than the smaller amount asked, between the two amounts (NO/YES; YES/NO), or greater than the larger amount". Respectively if respondents answer "No/No" to the first and to the second question they fall in the first interval, if they answer "No/Yes" and "Yes/No", in the second interval, or, finally, if they answer "Yes" to both the bids proposed in the last one. **Table 5 and Table 6** show the intervals based on the euro amounts randomly assigned to the respondent and depending on the positive or negative responses to the valuation questions.

Table 5. Intervals of WTP

	A: □(30, 39, 20)	**B: □(20, 30, 15)**	**C: □(15, 20, 10)**	**D: □(10, 15, 5)**
NO/NO	□0 – 20	□ 0 – 15	□ 0- 10	□ 0 - 5
NO/YES	□ 0 – 30	□ 0 – 20	□ 0 – 15	□ 0- 10
YES/NO	□ 30 – 39	□ 20 – 30	□ 15 – 20	□ 10 - 15
YES/YES	□ 39 - ∞	□ 30 - ∞	□ 20 - ∞	□ 15 - ∞

Source: Author's elaboration

Table 6. Intervals of WTP (Interval-censored)

Lower bound	**Upper bound**
0	5
5	10
10	15
15	20
20	30
30	39
39	∞

Source: Author's elaboration

4.2 Econometric results

4.2.1 The mean WTP

The so-called double-bounded or interval data model was chosen to estimate mean willingness to pay of the sample studied. Results of the model are presented in **Figure 11.**

The model used allows the direct estimation of β and σ using maximum likelihood (Lopez-Feldman, 2012). To estimate the econometric model, following Lopez-Feldman (2012), two variables were created: "answer1" that captures the answer to the first question as well as the first bid amount that was actually offered and "answer2" that captures the answer to the second question as well as the second bid amount that was actually offered. The estimate mean WTP is equal to 12,43 euro[3].

Figure 11. Mean WTP estimation with double-bounded model

Log likelihood= **-1146.3172**					N° of obs= **897**	
					Prob>chi2 = **0.00000**	
	Coef.	Std. Err.	z	P> |z|	[95% Coef. Interval]	
Beta	**12.43285**	**.3727986**	**33.35**	**0.000**	**11.70218**	**13.16352**
Sigma	**9.356384**	**.3399833**	**27.52**	**0.000**	**8.690029**	**10.02274**
First-Bid Variable: **bid1**						
Second-Bid Variable: **bid2**						
First-Response Dummy Variable: **answer1**						
Second-Response Dummy Variable: **answer2**						

Source: Author's elaboration with STATA 14.2

Starting from the mean WTP estimated, the economic value of the Intangible Cultural Heritage of Mediterranean Diet declined in a cultural good that visitors may actively experience, was calculated in term of total annual economic benefit of the "Mediterranean Diet District". It is obtained by multiplying the estimaed mean WTP amount (12,43 Euro) by the sum of the annual number of Italian visitors of Apulia region in 2015 (690.020[4]) and the number of the inhabitants of province of

[3] As affirmed by Lopez-Feldman (2012), since the doubleb command directly estimates β the WTP formula is simply z'β . Therefore, in this case (with no control variables) WTP is simply the constant β estimated.

[4] Source: Confcommercio, Report: "Il turismo in Puglia", 2016

Foggia (626.072[5]), as already done in previous study (Tuan and Navrud, 2008, Lee, 2015). Foreing tourists of Apulia were excluded because the survey was conducted only on the Italian population and then, the results cannot be expanded to foreign population, but if it would be considered that the number of all the tourists of Apulia in 2015 was equal to 3.422.450[6], there will be a more significant number of potential visitors of the park. Therefore, the estimated annual economic benefit of the"Mediterranean Diet District", considering only Italian tourists of Apulia and its inhabitants, is 16.359.023,56 euro.

4.2.2 The determinats of WTP

In contingent valuation studies it is used to estimate a valuation function, with the aim to find the relation between respondents' WTP and the variables that are supposed to have an influence on the WTP choices. It is an explorative estimation, functional to a double purpose of testing the theoretical validity of the construct, determining if WTP is significantly related to covariates suggested by the theory, and attempting to transfer the experimental results obtained from the sample to different populations (Santagata and Signorello, 2000).

As stated in previous studies (Carson et al.1994, Santagata and Signorello, 2000), a respondent's willingness to pay may be predict by a valuation function WTP= *f (Y, T, C),* explained as funcion of financial resources (Y), tastes (T) for the good, and treatment variables such as characteristics, knowledge of the particolar goods being sold and respondents behaviour (C)[7].

The two-stage approach chosen to examine the explanatory variables influencing respondents' WTP consists of a first logit model to investigate the relation between the depend bynary variable of non-monetary WTP and the explanatory variables, and a second step to investigate the probability of falling in one of the bid intervals by comparing two models, an ordered logistic model and a generalized ordered logit, applied on the entire sample.

4.2.2.1 Logit model results

The output of the logistic regression is reported in **Figure 12.**

The interpretation of the regression result suggests that the INCOME variable, that is used in numerous studies as a standard survey measure to indicate financial resources, and specifically, in this study measures the personal monthly income in six different intervals from a minimum of 0

[5] Source: ISTAT, 15° Censimento della popolazione italiana, 2011

[6] Source: Confcommercio, Report: "Il turismo in Puglia", 2016

[7] A clear definition of each variable is summarized in Table 2

euro to a maximum of over 3000 euro, is, as expected, a good predictor of the respondents' WTP, significant at the 0,003 level and positively related. It means that the higher the respondent's income is, the higher is the probability of a positive WTP. Another variable significant at the 0,003 level is "GENDER", that takes a value of one if the respondent is woman. So the probability of a positive WTP increases if respondens are women confirming what Carson et al. (2012) has underlined in ther study: "being female is something positively related to WTP". The variable "OCC" defines the occupational state of the respondents, and is significant at the level of 0,014 and negatively related. An explanation of this is that respondents who are students or employees have an higher expectation of visit the"Mediterranean Diet District", also in term of intention to spend time in recreational and cultural activities of this kind, instead, the probability of a positive WTP decrease for unemployed or retired. Unexpectedly, because of in previuos studies "AGE" is often a consistent predictor, usually negatively related to WTP for no-market goods (Carson et al.,1994, Del Saz Salazar & Montagud Marques, 2005), in this study it is not significant. With respect to attitudes variables involving tastes and habits as visiting of cultural and ricreational tourism attractions (VPARK) or attending food related events (VEXPO), the results confirm their significance (respectively 0,000 and 0,002) to predict higher willingness to pay for daily entrance ticket for the "Mediterranean Diet District" if respondents have visited this kind of tourism attractions or cultural events in the last two years. Instead, past visits to Apulia for tourism purpose (VISIT_PUGLIA) and previous knowledge of province of Foggia (KNOW_PF), that in other studies (Carson et al. 1992; Carson et al. 1994) were dimonstrated to be good predictors of future visits to the "site" or of general concern for the improvement of the tourism offer of geographical area, in this case, are not predictors of a positive WTP for the"Mediterranean Diet District". At the same way, all the variables related to food habits of respondents (FOODTV, DIET, DIET_TYPE), and the treatment ones, dealing with the general knowledge of the topic Mediterranean Diet (MD1) and of the Mediterranean diet as Intangible Cultural Heritage of humanity (ICH_MD); the perception of the importance (PRESERVE_IMP) and of the value of the preservation of Mediterranean Diet Intangible Cultural Heritage (PRESERVE_VALUE), the reasons why it is important to preserve it (PRESERVE_MOT); the perception of the validity of the cultural good "Mediterranean Diet District" as innovative tourism instrument to preserve and disseminate the intangible cultural heritage (TOURISM_VALIDITY), and as a tourism attractor for the province of Foggia (TOURISM_DEMAND) are all not significant. The only exception is the variable measuring the tourist attractiveness of "Mediterranean Diet District" as respondents intention to visit it (TOURISM_RESOURCE_ATTRACTIVENESS), which is a consistent predictor of a positive WTP with a level of 0,000 of significance. It means that most respondent are attracted to

the “Mediterranean Diet District”, higher is their intention to visit it and “experience” MD and therefore, higher is the probability of a positive response to the willingness to pay for its daily entrance ticket. Finally, the variable ATTRACT_PF, is negative related to WTP with a significance level equal to 0,035. It explains if respondents evaluate attractive, as tourist destination, the province of Foggia, in a five points scale from 0 (strongly disagree with its attractiveness) to 5 (strongly agreee). The negative sign of its coefficient shows that individuals, who were familiar and appreciate the province of Foggia as it is, with its tourism offer, are less willing to pay for this new cultural tourist attraction than respondents that are unsatisfied of tourist attractiveness of this geographical area. Instead, variables that evaluate the future development of the tourism offer of the province of Foggia, in terms of innovative cultural and ricreational activities to be developed (FUTURE_RE_CULT; RECULT_1) result to be not significant.

Figure 12. Logistic regression of non-monetary WTP

Logistic regression — Number of obs = 897; LR chi2(25) = 189.40; Prob > chi2 = 0.0000; Log likelihood = -364.49565; Pseudo R2 = 0.2062

wtp_	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
age	.0883541	.1169255	0.76	0.450	-.1408157	.317524
gender	.6298149	.2126674	2.96	0.003	.2129944	1.046635
occ	-.221403	.0905045	-2.45	0.014	-.3987886	-.0440174
edu	.1643207	.1061598	1.55	0.122	-.0437486	.3723901
income	.248926	.0833298	2.99	0.003	.0856027	.4122493
son	.0937587	.2632664	0.36	0.722	-.4222339	.6097513
resid	-.0504974	.1169376	-0.43	0.666	-.2796909	.1786961
vexpo	.6214617	.1983717	3.13	0.002	.2326602	1.010263
vpark	1.109294	.2871479	3.86	0.000	.5464948	1.672094
foodtv	-.3074826	.2224561	-1.38	0.167	-.7434885	.1285234
diet	-34.95901	93.15404	-0.38	0.707	-217.5376	147.6195
diet_type	.0346561	.0928903	0.37	0.709	-.1474055	.2167177
md1	-.0340208	.0651824	-0.52	0.602	-.1617759	.0937344
ich_md	-.0829997	.2035674	-0.41	0.683	-.4819845	.3159852
imp_preserve	.1913394	.1746758	1.10	0.273	-.1510189	.5336978
value_preserve	-.2191718	.1775626	-1.23	0.217	-.5671881	.1288445
preserve_mot1	-.0752229	.0666421	-1.13	0.259	-.2058391	.0553933
tourism_validity	-.1193345	.1535387	-0.78	0.437	-.4202648	.1815958
tourism_demand	.0937518	.1389572	0.67	0.500	-.1785992	.3661028
tourism_resource_attractiveness	1.052682	.1455838	7.23	0.000	.7673427	1.338021
vi1t_puglia	.3049707	.3004857	1.01	0.310	-.2839706	.8939119
know_pf	-.4125931	.2953862	-1.40	0.162	-.9915394	.1663533
attract_pf	-.2456703	.1163824	-2.11	0.035	-.4737756	-.017565
future_re_cult	.2349923	.1391419	1.69	0.091	-.0377208	.5077053
recult_1	-.0064321	.0802244	-0.08	0.936	-.1636691	.1508049
_cons	30.19403	92.74062	0.33	0.745	-151.5742	211.9623

Source: Author's elaboration with STATA 14.2

To put a stronger emphasis on the pratical significance of the abovementioned results, analysis on marginal effects of the indipendent variables on respondents' WTP have been conducted.

Figure 13 shows the change in the probability when the predictors or independent variables increases by one unit, specifying values of each of the independent variables in the model and clarifying the probability of a positive willingness to pay for respondent who has certain values. For continuous variables, it represents the instantaneous change given by the "unit" and it may be very small. For binary variables, the changes is from 0 to 1, so one "unit" is as it is usually thought.

Figure 13. Predicted probabilities of positive WTP

	Delta-method				
	Margin	Std. Err.	z	P>|z|	[95% Conf. Interval]
_cons	.8708823	.0139922	62.24	0.000	.843458 .8983065

Source: Author's elaboration with STATA 14.2

The probability of WTP to be equal to 1, positive WTP), is 87% given that all independent variables are set to their mean values. It is possible to set predictors variables to specific value to estimate a more precise probability that the outcome variable (WTP) is equal to 1 (positive WTP). If predictors variables: GENDER, VEXPO, VPARK are set equal to 1 (positive response) and the rest of predictors are set to their mean values, the probability of a positive WTP for the "Mediterranean Diet District" increases until the 93% (**Figure 14**).

Figure 14. Predicted probabilities of positive WTP
(predictors GENDER, VEXPO, VPARK set =1)

	Delta-method				
	Margin	Std. Err.	z	P>|z|	[95% Conf. Interval]
_cons	.9306587	.0128745	72.29	0.000	.9054251 .9558923

Source: Author's elaboration with STATA 14.2

If all the predictors variables are set to specific values to maximize the probabilities of a positive WTP[8], and the rest of independent variables are set to their mean values, the probability increases further. Employed women with a personal monthly income from 1001 euro to 1500 euro, that have visited cultural and ricreational tourism attractions and attended food related events in the last two years, unsatisfied of the tourism attractiveness of the province of Foggia, but that strongly would like to visit the "Mediterranean Diet District" (considering mean values for all the others variables), have a probability of a positive WTP equal to the 97%. Results are summarize in **Figure 15.**

Figure 15. Predicted probabilities of positive WTP
(predictors set to values that maximize the probability of WTP=1)

	Delta-method					
	Margin	Std. Err.	z	P>|z|	[95% Conf.	Interval]
_at						
1	.9431166	.0471952	19.98	0.000	.8506158	1.035617
2	.9533587	.0251225	37.95	0.000	.9041195	1.002598
3	.9666834	.0282036	34.28	0.000	.9114053	1.021961
4	.9728045	.0151722	64.12	0.000	.9430675	1.002542
5	.9291425	.0570691	16.28	0.000	.8172891	1.040996
6	.9417452	.0291252	32.33	0.000	.8846609	.9988295
7	.9582424	.0344538	27.81	0.000	.8907142	1.025771
8	.9658596	.0177143	54.52	0.000	.9311403	1.000579
9	.9262863	.0592948	15.62	0.000	.8100706	1.042502
10	.9393638	.0325764	28.84	0.000	.8755152	1.003212
11	.9565043	.0361784	26.44	0.000	.885596	1.027413
12	.9644267	.0201773	47.80	0.000	.9248799	1.003974
13	.9085783	.072385	12.55	0.000	.7667064	1.05045
14	.9245415	.0393124	23.52	0.000	.8474906	1.001593
15	.9456294	.0447786	21.12	0.000	.857865	1.033394
16	.9554404	.0245823	38.87	0.000	.9072599	1.003621

Source: Author's elaboration with STATA 14.2

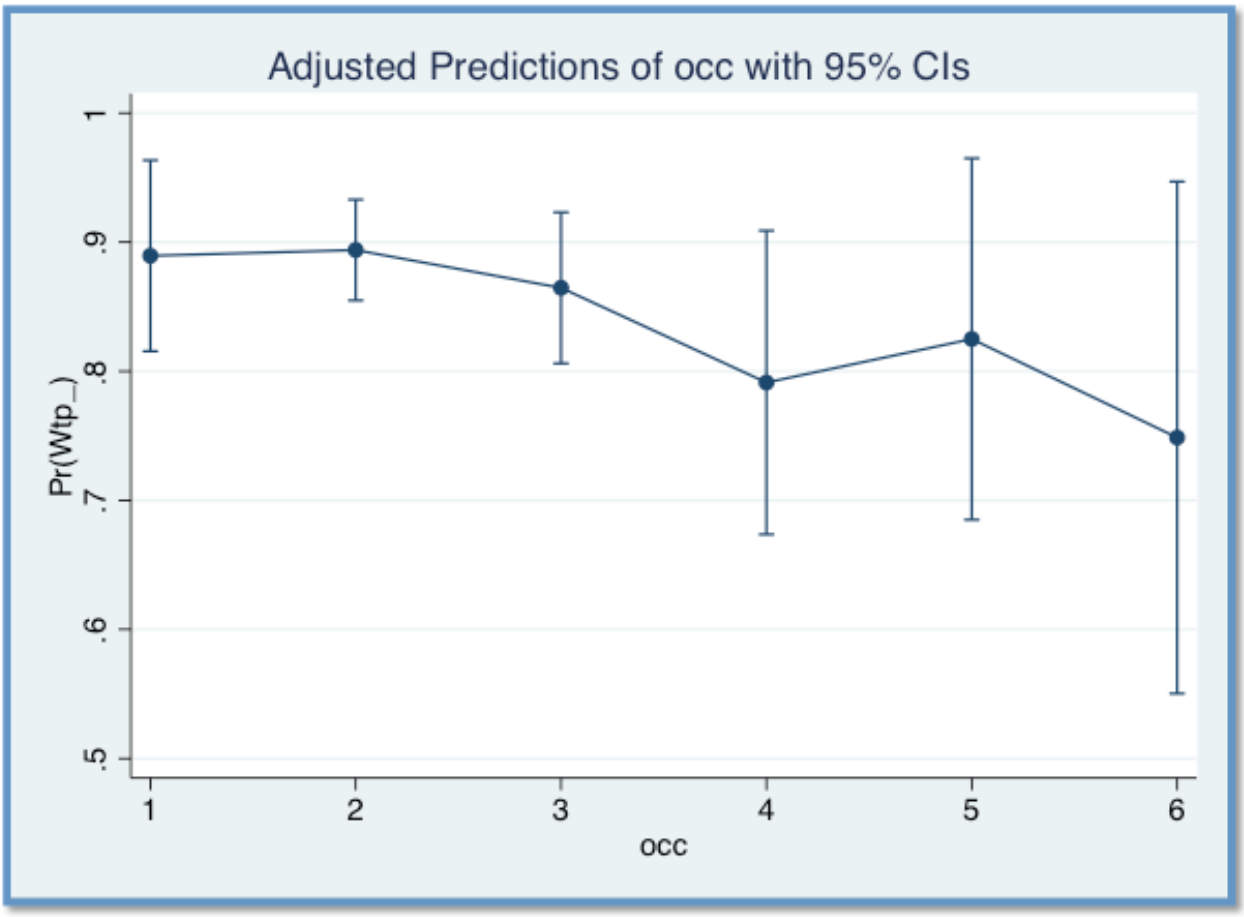
Results, also show how the probability of a positive WTP changes among the classes of each categorical variables (predictors). **Figure 16** shows results and the graph of the adjusted predictions

[8] Predictors values are set as: vpark=1; vexpo=1; gender=1; occ=(2;3); income=(2;3) ; tourism_resource_attractiveness = (4; 5); attract_pf= (4; 5)

of variable "OCC" on positive WTP. **Figure 17** shows resuls and the graph of the adjusted predictions of variable "ATTRACT_PF". **Figure 18** shows results and the graph of the adjusted predictions of variable "TOURISM_RESOURCE_ATTRACTIVENESS". **Figure 19** shows results and the graph of the adjusted predictions of variable "INCOME".

Figure 15. Predicted probabilities of positive WTP for predictor "OCC"

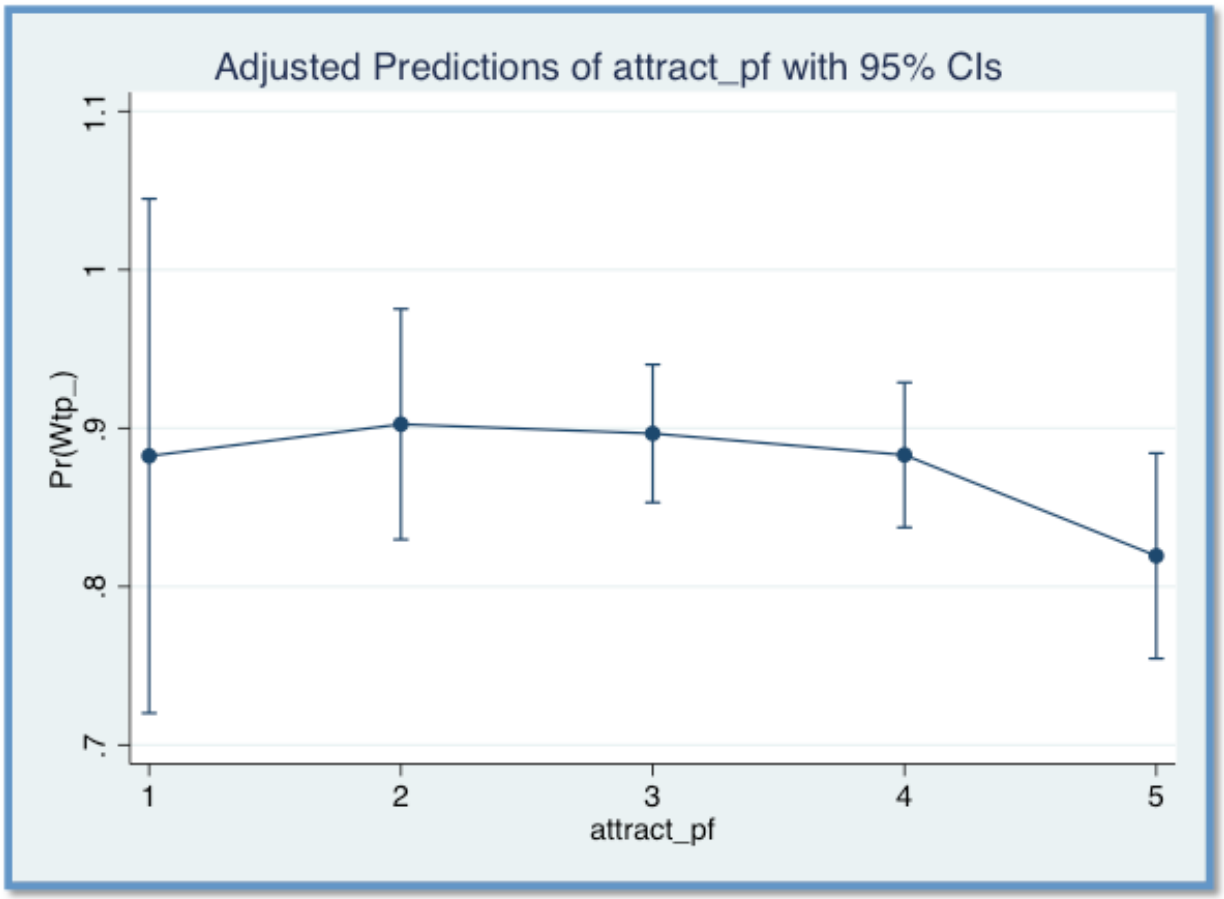
	Delta-method Margin	Std. Err.	z	P>|z|	[95% Conf.	Interval]
occ						
1	.8894707	.0377316	23.57	0.000	.8155182	.9634233
2	.8939054	.0199377	44.83	0.000	.8548282	.9329825
3	.8646049	.0298536	28.96	0.000	.8060929	.923117
4	.7912494	.0600341	13.18	0.000	.6735847	.9089141
5	.8249507	.0714323	11.55	0.000	.684946	.9649555
6	.7486419	.1011798	7.40	0.000	.5503331	.9469508



Source: Author's elaboration with STATA 14.2

Figure 17. Predicted probabilities of positive WTP for predictor "ATTRACT_PF"

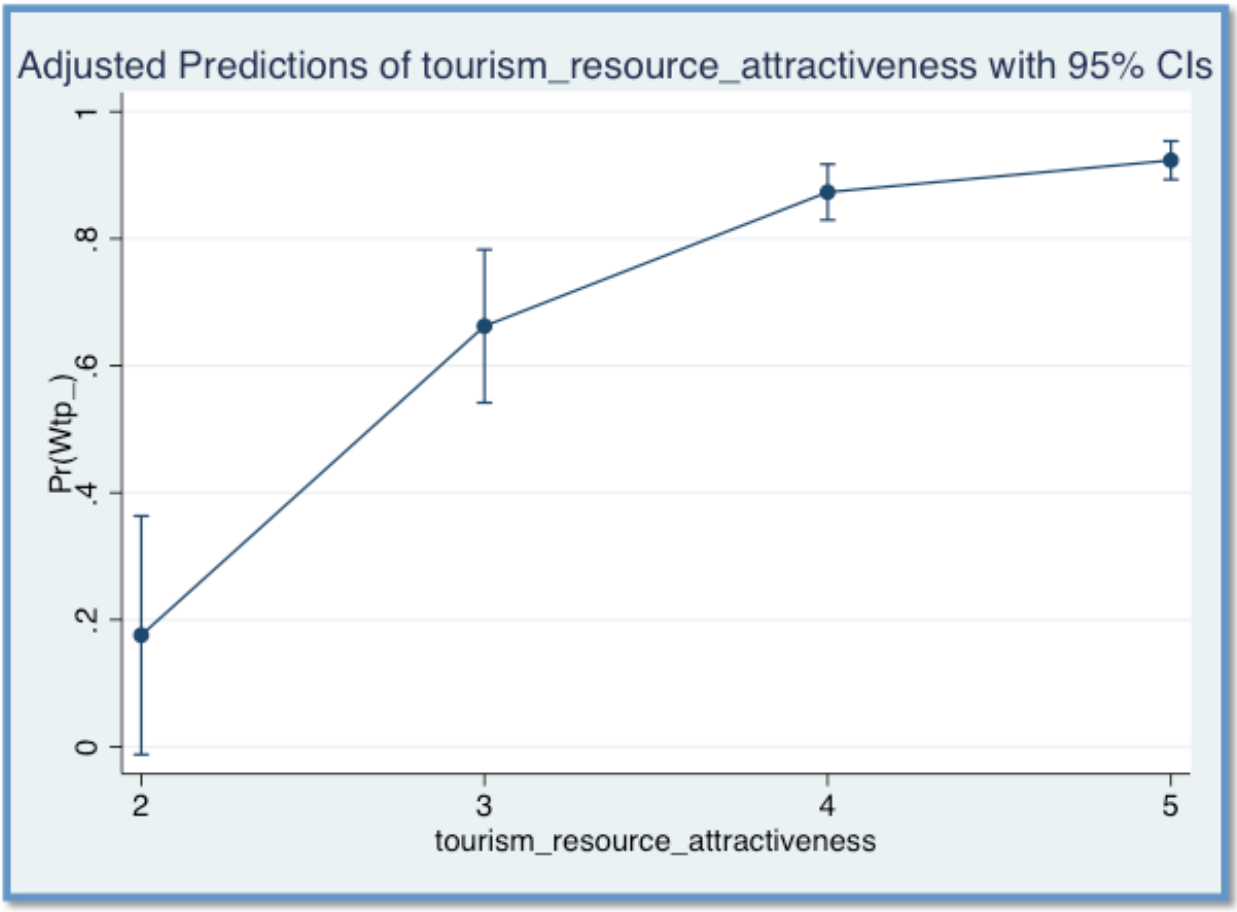
	Margin	Delta-method Std. Err.	z	P>|z|	[95% Conf.	Interval]
attract_pf						
1	.8824483	.0828221	10.65	0.000	.7201199	1.044777
2	.9024844	.0371168	24.31	0.000	.8297368	.975232
3	.8966106	.022207	40.38	0.000	.8530857	.9401355
4	.8830994	.0233475	37.82	0.000	.8373391	.9288597
5	.8193823	.0330745	24.77	0.000	.7545575	.884207



Source: Author's elaboration with STATA 14.2

Figure 18. Predicted probabilities of positive WTP for predictor "TOURISM_RESOURCE_ATTRACTIVENESS"

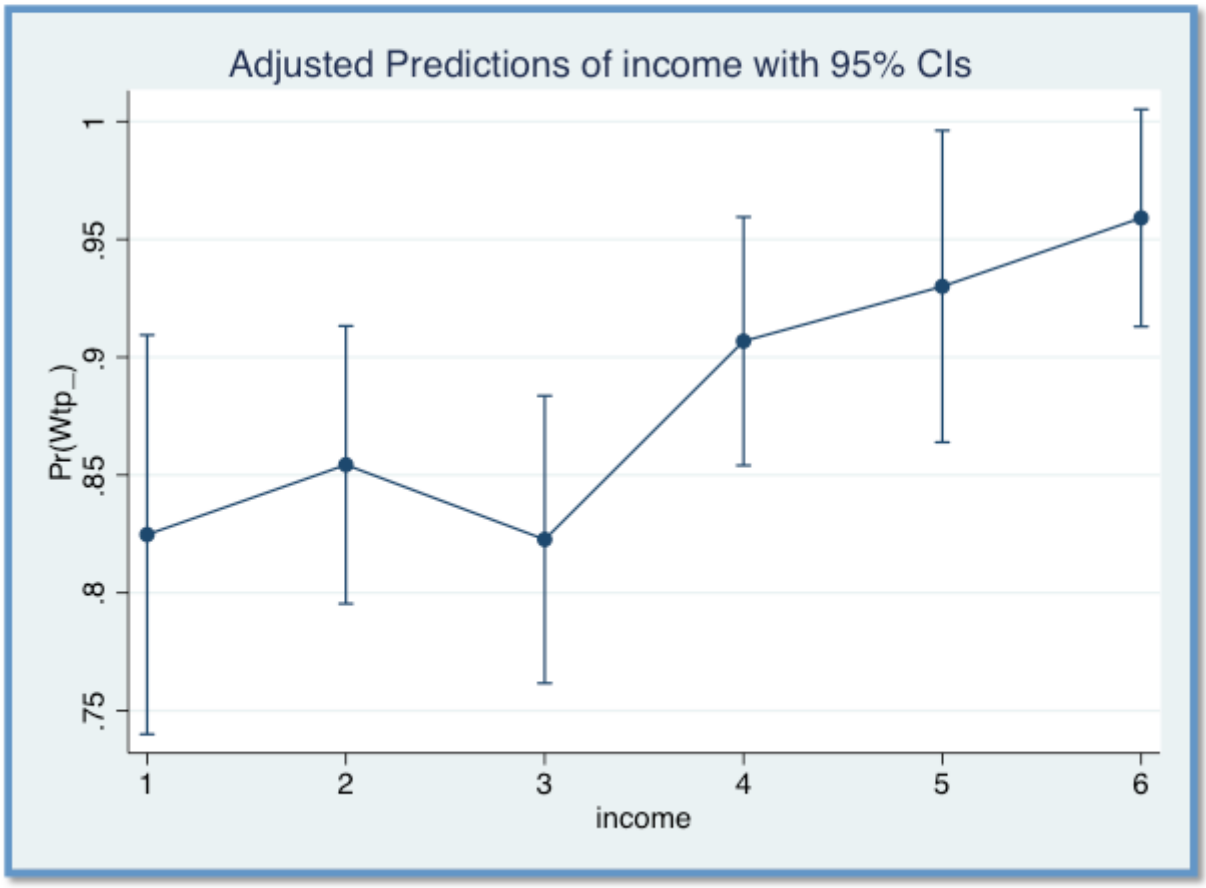
	Margin	Delta-method Std. Err.	z	P>|z|	[95% Conf.	Interval]
tourism_resource_attractiveness						
2	.1756153	.0958275	1.83	0.067	-.0122031	.3634338
3	.6623241	.0615282	10.76	0.000	.5417311	.7829172
4	.8732965	.0224119	38.97	0.000	.8293701	.917223
5	.9234416	.0154251	59.87	0.000	.8932089	.9536743



Source: Author's elaboration with STATA 14.2

Figure 19. Predicted probabilities of positive WTP for predictor "INCOME"

	Delta-method Margin	Std. Err.	z	P>|z|	[95% Conf.	Interval]
income						
1	.8247089	.0432139	19.08	0.000	.7400112	.9094067
2	.8543267	.0300664	28.41	0.000	.7953976	.9132558
3	.8226421	.0311237	26.43	0.000	.7616408	.8836435
4	.9067887	.0268909	33.72	0.000	.8540836	.9594938
5	.9300339	.0337435	27.56	0.000	.8638978	.9961699
6	.9590826	.0235176	40.78	0.000	.912989	1.005176



Source: Author's elaboration with STATA 14.2

Considering the categorical independent variables of the model, the only one predictor which has significant marginal effects, in terms of change in probability when respondents go from one class to another, is "INCOME" (**Figure 20**). For this predictor, the change in probability when

respondents go from “2001 euro to 3000 euro” class of personal monthly income, to “over 3000 euro”class, increases of 13 percentage points and is significant.

Figure 20. Marginal effects of predictor “INCOME”

income						
2	.0296178	.0513166	0.58	0.564	-.0709609	.1301964
3	-.0020668	.0572332	-0.04	0.971	-.1142418	.1101082
4	.0820798	.054592	1.50	0.133	-.0249186	.1890781
5	.1053249	.0571232	1.84	0.065	-.0066344	.2172843
6	.1343737	.0507666	2.65	0.008	.0348729	.2338745

Source: Author’s elaboration with STATA 14.2

Instead, an independent variable, not predictor, which has significat marginal effects, in terms of change in probabilitywhen respondents change opinion moving from one class to another, is “TOURISM_DEMAND”, which expresses respondents agreement in considering the “Mediterranean Diet District” a good tourism attractor for the province of Foggia . **Figure 21** shows in detail, the change in probability when respondents move from one class to another and the significance level.

Figure 21. Marginal effects of independent variable “TOURISM_DEMAND”

tourism_demand						
2	.6667197	.2272735	2.93	0.003	.2212718	1.112168
3	.6430138	.2268519	2.83	0.005	.1983922	1.087635
4	.6998976	.226395	3.09	0.002	.2561714	1.143624
5	.6574716	.2272247	2.89	0.004	.2121193	1.102824

Source: Author’s elaboration with STATA 14.2

4.2.2.2. Ordered Logit model results

By comparing two econometric models, an ordered logistic model and a generalized ordered logit, the second step of the analisy focuses on investigating the probability of respondents of falling in one of the bid intervals and, as already done for non-monetary WTP, on examining the explanatory variables influencing respondents’ WTP. The ordered variable “DEPVAR” used as dependant one in both the models, was obtained by the respondents’ answers to the WTP dichotomous questions with follow-up proposed in the survey. Its categories capture the responses to the first and the

second WTP questions of each respondent and are respectively “NN” which means that respondents have answered “No” to both first and second question; "NY” when respondents are not willing to pay for the first bid amount proposed, but they are for the second one; “YN” that means “Yes” to the first question and “no” to the second one; “YY” when respondents express a positive willingness to pay for both the proposed bid amounts. This dependent variable has ordered categories and the order of the categories is meaningful, but the distances between them are arbitrary, This characteristic makes it ideal to be used with ordered logit model.

The output of the ordered logistic regression is reported in **Figure 22.**

Figura 22. Ordered logistic regression of monetary WTP

Ordered logistic regression — Number of obs = 897
LR chi2(25) = 129.12
Prob > chi2 = 0.0000
Log likelihood = -1042.2931 — Pseudo R2 = 0.0583

DepVar	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
age	.1303224	.0810333	1.61	0.108	-.0284999	.2891448
gender	.0792588	.1478738	0.54	0.592	-.2105685	.3690862
occ	-.0586163	.0628935	-0.93	0.351	-.1818852	.0646527
edu	.1477855	.0700502	2.11	0.035	.0104896	.2850814
income	.1560044	.0546154	2.86	0.004	.0489602	.2630487
son	-.3131852	.1777845	-1.76	0.078	-.6616365	.0352661
resid	-.0080527	.0787653	-0.10	0.919	-.1624297	.1463244
vexpo	.1185072	.1376652	0.86	0.389	-.1513116	.388326
vpark	.6569003	.2339649	2.81	0.005	.1983375	1.115463
foodtv	.0111348	.1526393	0.07	0.942	-.2880326	.3103023
diet	82.72775	64.8087	1.28	0.202	-44.29496	209.7505
diet_type	-.0825559	.0646269	-1.28	0.201	-.2092223	.0441105
md1	.1170982	.0459065	2.55	0.011	.0271231	.2070734
ich_md	-.1256997	.1372228	-0.92	0.360	-.3946515	.143252
imp_preserve	.1473237	.133277	1.11	0.269	-.1138945	.4085419
value_preserve	-.1335264	.1291855	-1.03	0.301	-.3867253	.1196725
preserve_mot1	.0042024	.0446218	0.09	0.925	-.0832547	.0916595
tourism_validity	-.0291314	.1138842	-0.26	0.798	-.2523403	.1940775
tourism_demand	.0431855	.0990589	0.44	0.663	-.1509665	.2373374
tourism_resource_attractiveness	.6100197	.1084868	5.62	0.000	.3973896	.8226499
vi1t_puglia	.1692487	.2231945	0.76	0.448	-.2682044	.6067019
know_pf	-.554043	.1971157	-2.81	0.005	-.9403827	-.1677033
attract_pf	.016091	.080595	0.20	0.842	-.1418724	.1740543
future_re_cult	.0911746	.1020049	0.89	0.371	-.1087513	.2911005
recult_1	.0237165	.0565572	0.42	0.675	-.0871336	.1345667
/cut1	86.84654	64.54876			-39.6667	213.3598
/cut2	88.10178	64.55076			-38.41538	214.6189
/cut3	89.90651	64.55394			-36.61689	216.4299

Source: Author’s elaboration with STATA 14.2

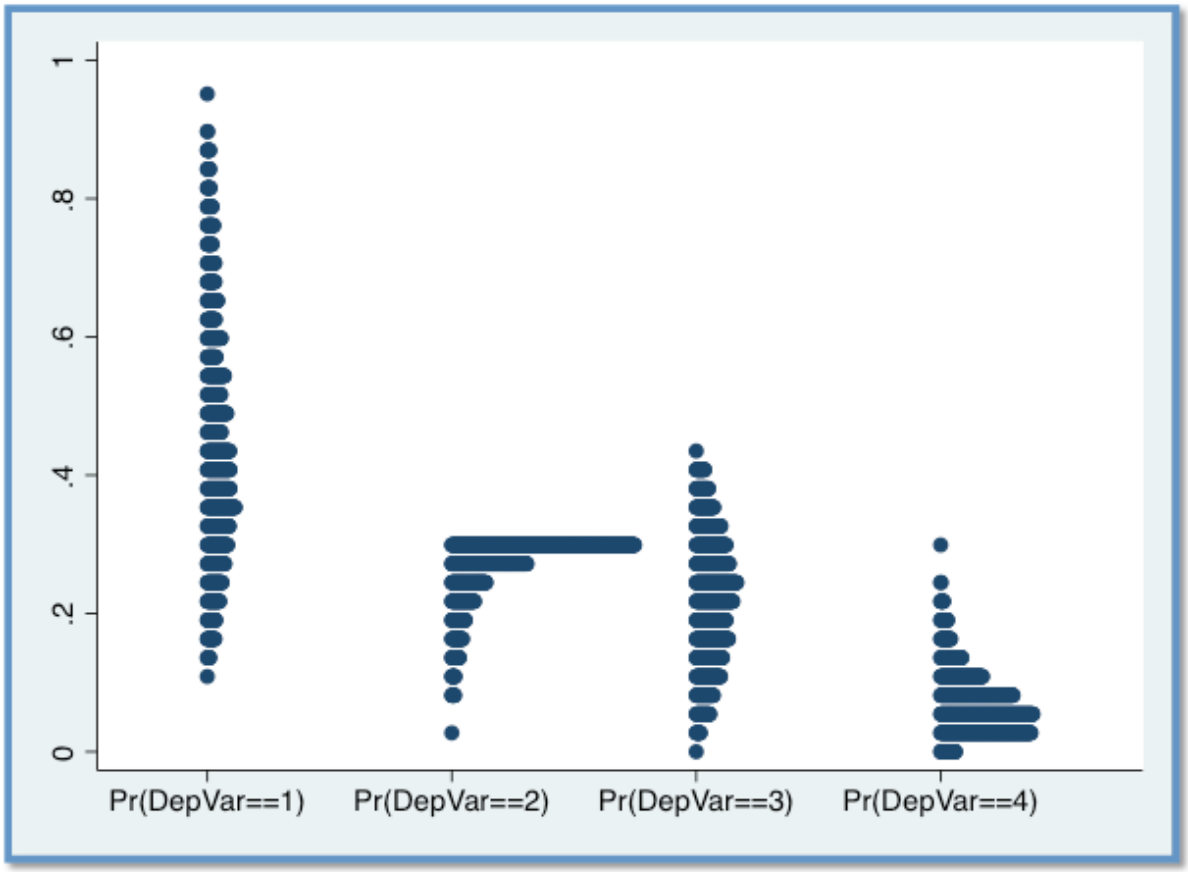
Education (EDU) is statistically significant (significance level at 0,03) and positively associated with the categories of the dependent variable, in accordance with numerous contingent valuation studies which confirm that a more educated population is more likely to be willing to pay for public goods, like cultural ones (Echeverria et al., 1995, Thompson et al., 2002, Amimejad et al., 2006, Catalano et al., 2016). It means that for respondents with higher education there is a higher probability to answer positively to both the two bids amount assigned. As expected, income (INCOME) is also positively associated and significant at 0,004. The higher the personal monthly income is, the higher is the probability of a positive willingness to pay for both proposed bids amount. With respect to attitudes variables, the variable explain if respondents have visited cultural and ricreational tourism attractions in the last two years (VPARK) is significant (0,005) and positively related. To be familiar with this kind of tourism attractions decrease the probabilitiy of a negative responses to the amount of money proposed as price of a daily ticket entrance to the "Mediterranean Diet District", because, as confirmed in other studies (Lee, 1997, Barral et al., 2008, Arif Rahman Hakim et al., 2011), users of recreational services consider appropriate to pay an entrance fee. Confirming that having a previous knowledge of the topic that involved the good under evaluation is expected to be associated with higher level of WTP (Cameron and Englin, 1997, Del Saz Salazar and Marques, 2005) the variable MD1 is significative (0,01). This variable shows the respondents' share of mind, if they heard "Mediterranean Diet". The options proposed are ordered starting from simple and most common-used definition of Mediterranean diet, to more complex ones. It is equal to: 1=a dietary pattern; 2=food pyramid; 3=lifestyle; 4=traditions and recipes; 5= a specific food (olive oil, cereals, legumes,fish, etc.); 6= a model of sustainable development; 7= a geographic area; 8= a set of production and consumption patterns; 9= others. The positive sign of its coefficient shows that individuals, who have deeper knowledge of the Mediterranean diet, have higher probability of positive willingness to pay the first and the second price of the daily entrance ticket asked. The variable measuring the tourist attractiveness of"Mediterranean Diet District", in terms of respondents intention to visit it (TOURISM_RESOURCE_ATTRACTIVENESS) shows a level of significance of 0,000. It meas that most respondent are attracted to the "Mediterranean Diet District", lower is the probability they answer "No" to the two questions, in other terms, higher is their intention to visit it and therefore higher is the probability of a positive responses to the willingness to pay for its daily entrance ticket at any bids. Finally, the variable KNOW_PF, which is an indicator that respondents know the province of Foggia area, equal to "0" if they don't know it and equal to "1" if they know it, is signicative (0,005) with a negative sign, in contrast with some past studies on public goods (Carson et al.,1994). It can be explaining by noting that the majority of the respondents who declare to

knows the province of Foggia area, are residents in this province or in the rest of Apulia. Respondents who are residents in the province of Foggia and in general in Apulia region, belong to the lower income classes cosidered in the variable INCOME studied in this model (positively related). Accordingly the majority of the respondents who know province of Foggia, are in lower income groups and, consequently, they have higher probability to answer negatively to question about willingness to pay for the daily entrance ticket at any bids, because of, simply, they have less disposable income.

Further, predicted probabilities to fall into each class of the dependent variable were studied. Results are shown in **Figure 23.** For all average values, the probability of answering "No/No" to both the bids amount of money asked as price for a daily entrance ticket to the "Mediterranean Diet District" is 43%, "No/Yes" is 29%, "Yes/No" 21% and "Yes/Yes" 0,05%. The decreasing trend of the percentage of probabilities to fall into the four classes of the dependent variable is the same, also for the marginal effects of the predictor variables. Only if predictors are set to values that maximize the probability of fall in the class 4 (Yes/Yes), it is possible to observe an increasing trend of the percentage of probabilities to fall into the four classes.

Figure 23. Predicted probabilities

		95% Conf. Interval	
Pr(y=1|x):	0.4385	[0.4042,	0.4729]
Pr(y=2|x):	0.2941	[0.2623,	0.3259]
Pr(y=3|x):	0.2107	[0.1835,	0.2379]
Pr(y=4|x):	0.0566	[0.0424,	0.0709]



Source: Author's elaboration with STATA 14.2

A diagnostic test to verify the robustness of the model was performed. Theory suggests that one of the assumptions underlying ordered logistic regression is that the relationship between each pair of outcome groups is the same. In other words, ordered logistic regression assumes that the coefficients that describe the relationship between the lowest versus all higher categories of the response variable are the same, as those that describe the relationship between the next lowest category and all higher categories, etc. This is called the parallel regression assumption. Because of the relationship between all pairs of groups is the same, there is only one set of coefficients (only one model). If this was not the case, different models to describe the relationship between each pair of outcome groups are necessary To test the parallel regression assumption the Brant Test was used As Williams says (2006) "the Brant test provides both a global test of whether any variable violates the parallel lines assumptions, as well as the tests of the assumption for each variable separately". The positive results of the Brant Test show that all the variables are not significant (> 0,05), therefore the assumption is not violated. The output of the Brant Test is reported in **Figure 24**.

Figure 24. Diagnostic of the ordered logit model: Brant Test

Brant test of parallel regression assumption

	chi2	p>chi2	df
All	44.63	0.688	50
age	1.52	0.467	2
gender	3.54	0.170	2
occ	4.37	0.113	2
edu	2.76	0.252	2
income	1.32	0.516	2
son	4.14	0.126	2
resid	3.53	0.171	2
vexpo	0.50	0.781	2
vpark	0.42	0.811	2
foodtv	0.86	0.651	2
diet	1.47	0.480	2
diet_type	1.46	0.481	2
md1	2.81	0.245	2
ich_md	0.73	0.695	2
imp_preserve	1.09	0.580	2
value_preserve	0.75	0.687	2
preserve_mot1	0.21	0.900	2
tourism_validity	2.79	0.248	2
tourism_demand	1.07	0.585	2
tourism_resource_attractiveness	2.70	0.259	2
vi1t_puglia	0.93	0.627	2
know_pf	1.24	0.539	2
attract_pf	0.48	0.789	2
future_re_cult	1.25	0.535	2
recult_1	1.75	0.417	2

A significant test statistic provides evidence that the parallel regression assumption has been violated.

Source: Author's elaboration with STATA 14.2

4.2.2.3 Generalized Ordered Logit model results

The second method applied to compare the results about the determinants of monetary WTP, is the generalized ordered logit model, that is a versions of the ordered choice models based essentially on the "non-proportional odds" form (Clogg and Shihadeh, 1994; Fahrmeir and Tutz, 1994,). An implementation and rifinement of the model was provided by working papers (Fu, 1998) and by the development of two Stata programs: "GOLogit" and "GOLogit2" (Williams, 2006). The principal feature of these alternative model is that they can be less restrictive, without ignoring the order of the categories of the dependent variable, then the ordered logit model, whose assumptions are often violated[9]. They also offers the advantage of a more proper interpretation of the results. Infact, if in the ordered logit model, each outcome has its own intercept but the same regression coefficients, the overall odds of any event can differ, but the effect of the predictors on the odds of an event occurring in every subsequent category is the same for every category (the parallel-lines assumption), in generalized ordered logit model there is a unique and separate set of regression coefficients for each comparison. The comparisons done are the same of an ordered logit model, but the result is a more complex model. In this case (GOLogit2), as shown in **Figure 25 (a)** and **Figure 25 (b)**, the outcome is a model with 3 sets of regression coefficients, which offers an interesting interpretation of the results. As stated by Williams (2006, 2015), because of results are similar to the series of binary logistic regression estimated by the Brant Test, they may be interpreted the same way. The first panel "1" contrasts the "No/No" class of variable "DEPVAR" with the other three classes (No/Yes; Yes/No; Yes/Yes); the second panel "2" contrasts classes "No/No" and "No/Yes" with categories "Yes/No" and "Yes/Yes"; and the third panel contrasts the first three classes (No/No, No/Yess and Yes/No) with the "Yes/Yes" one. Hence, following the outcom interpretation proposed by Williams (2006, 2015), "positive coefficient indicates that higher values on the explanatory variable make it more likely that respondent will be in a higher category of the dependent variable than the current one, whereas negative coefficients indicate that higher values on the explanatory variable increase the likelihood of being in the current or a lower category". On the basis of this interpretation of the resuls, panel 1 confirms the results of the ordered logit model: the significant explanatory variables are "EDU" (0,012)[10], "INCOME" (0,012), "VPARK" (0,015), "MD1" (0,002), "TOURISM_REESOURCE_ATTRACTIVENESS" (0,000) and "KNOW_PF" (0,024), all positively related except the last one. Respondents with a higher level of education, with higher monthly income, who are familiar with visiting recreational a nd cultural attractions like

[9] In this study the diagnostic test (Brant Test) performed on the ordered logit model, shows that the parallel-lines assumption is not been violated. (See Figure 23)

[10] ( ) Level of significance

thematich parks or cultural districs (have visited them in last two years) wlth an almost complete knowledge of the topic of the Mediterranean Diet, with an high intention to visit the "Mediterranean Diet District" and without a previous knowledge of the territory of the province of Foggia, are more likely to be willing to pay the two bids amount proposed as entrance ticket to the park. In other words, there is higher proobability to find respondents with this profile in the classes of DEPVAR, different from that of "No/No" responses. In panel 2, in addition to ""VPARK" (0,010) "TOURISM_REESOURCE_ATTRACTIVENESS" (0,000) and "KNOW_PF" (0,003), the variable "SON" is also a predictor (0,013) with negative sign. It means that, keeping unchanged the other variables, having children means less probability of positive willingness to pay at any bids proposed, and therefore a less probability for respondents to move from classes 1 (NO/NO) and 2 (NO/YES) to the other two upper classes of responses, 3 (YES/NO) and 4 (YES/YES). The panel 3 shows how, between all the explanatory variables, "INCOME" (0,012) and "OCC" (0,021) are the significant ones to explain the probability of respondents to be in the fourth class (YES/YES) in contrast of to be in the other lower ones. The fourth class of the dependent variable is the one with all positive responses to willingness to pay for the two bids amount proposed as daily entrance ticket to the"Mediterranean Diet District", and respondents with higher income ("INCOME" is positively related), and that are employees or students, instead of unemployed or retired ("OCC" is negatively related) are more expected to answered positively to question about monetary willingness to pay for the dailly entrance ticket required to visit the"Mediterranean Diet District". Further, also for the generalized model, predicted probabilities to fall into each class of the dependent variable were studied. Results are shown in **Figure 26.** For all average values, it is confirmed the decreasing trend of the probability to fall in each of the four classes of responses. In other word, the probability of answering "NO/NO" to both the bids amount of money asked as price for a daily entrance ticket to the "Mediterranean Diet District" is higher then the probability to fall in the other 3 classes (NO/YES, YES/NO, YES/YES), and so on.

Figura 25 (a). Generalized ordered logit model for monetary WTP

Generalized Ordered Logit Estimates — Number of obs = 897; LR chi2(75) = 183.37; Prob > chi2 = 0.0000; Log likelihood = -1015.1704; Pseudo R2 = 0.0828

DepVar	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
1						
age	.1219526	.0909559	1.34	0.180	-.0563177	.3002229
gender	.1944753	.1648389	1.18	0.238	-.128603	.5175536
occ	-.0460104	.0699369	-0.66	0.511	-.1830842	.0910635
edu	.199591	.0794612	2.51	0.012	.04385	.3553321
income	.1565799	.0624706	2.51	0.012	.0341398	.27902
son	-.2808415	.1975619	-1.42	0.155	-.6680556	.1063727
resid	.0611696	.0885673	0.69	0.490	-.1124192	.2347584
vexpo	.159982	.1544042	1.04	0.300	-.1426446	.4626087
vpark	.6188835	.2552808	2.42	0.015	.1185424	1.119225
foodtv	-.0143914	.1716354	-0.08	0.933	-.3507905	.3220078
diet	39.7399	73.21992	0.54	0.587	-103.7685	183.2483
diet_type	-.0397575	.073014	-0.54	0.586	-.1828624	.1033474
md1	.1635766	.054017	3.03	0.002	.0577052	.269448
ich_md	-.1054679	.1548031	-0.68	0.496	-.4088764	.1979407
imp_preserve	.0969965	.1464261	0.66	0.508	-.1899933	.3839864
value_preserve	-.1479474	.1433481	-1.03	0.302	-.4289046	.1330097
preserve_mot1	-.0112758	.0509686	-0.22	0.825	-.1111724	.0886208
tourism_validity	-.0452158	.1273852	-0.35	0.723	-.2948863	.2044547
tourism_demand	.0913202	.1095923	0.83	0.405	-.1234769	.3061172
tourism_resource_attractiveness	.622296	.1177919	5.28	0.000	.3914281	.8531639
vi1t_puglia	.2356537	.2534067	0.93	0.352	-.2610143	.7323218
know_pf	-.5177193	.2286891	-2.26	0.024	-.9659418	-.0694968
attract_pf	.0060704	.0891964	0.07	0.946	-.1687512	.180892
future_re_cult	.076314	.1119374	0.68	0.495	-.1430793	.2957073
recult_1	.0415337	.0626742	0.66	0.508	-.0813054	.1643729
_cons	-44.36708	72.92802	-0.61	0.543	-187.3034	98.56921

Source: Author's elaboration with STATA 14.2

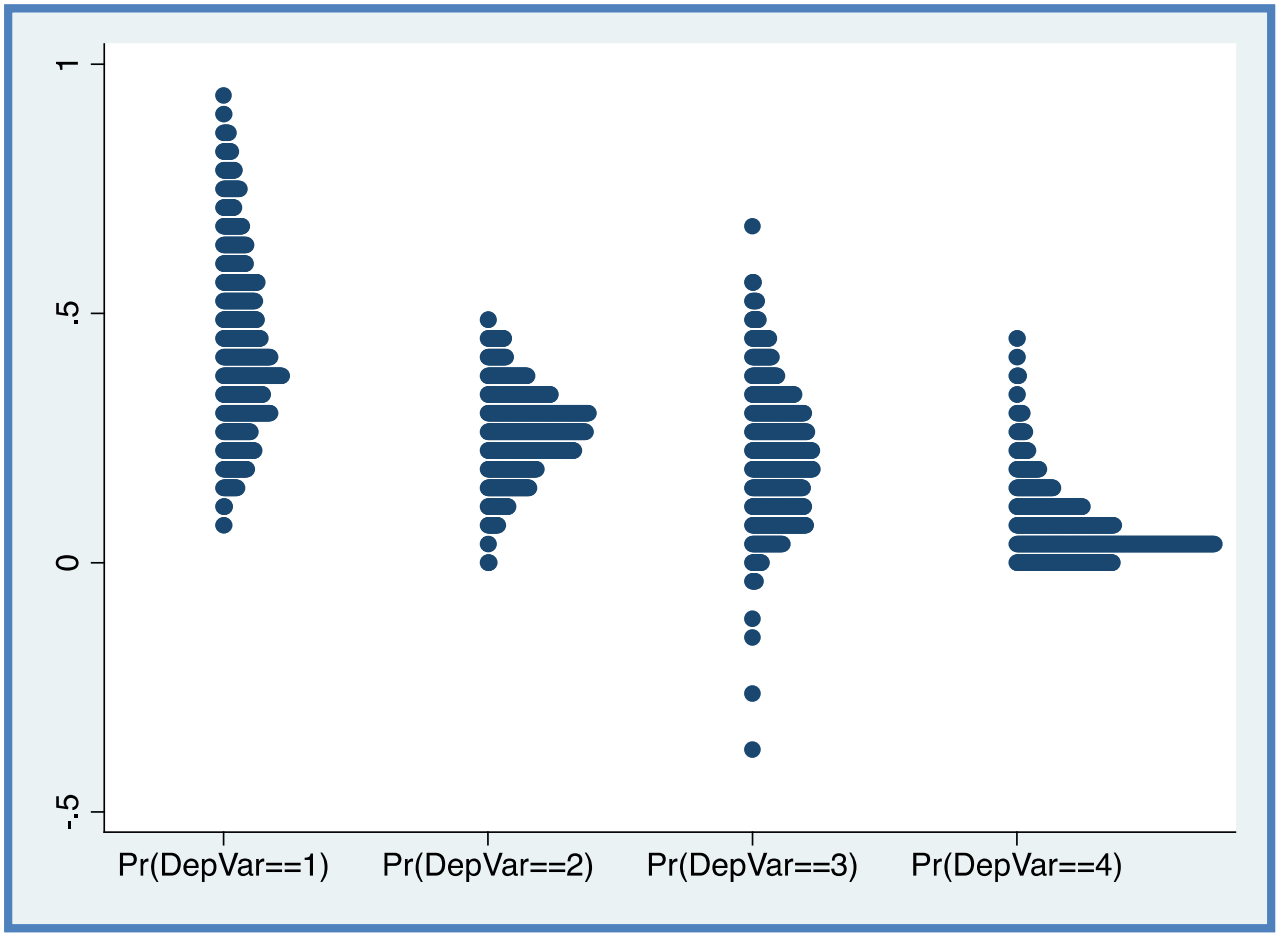
Fugure 25 (b). Generalized ordered logit model for monetary WTP

2						
age	.1946441	.101762	1.91	0.056	-.0048858	.3940939
gender	-.0154686	.1799515	-0.09	0.931	-.3681672	.3372299
occ	-.0286111	.0780775	-0.37	0.714	-.1816402	.1244179
edu	.1218963	.0859565	1.42	0.156	-.0465754	.2903679
income	.1222209	.0680698	1.80	0.073	-.0111935	.2556353
son	-.5455163	.2204181	-2.47	0.013	-.9775279	-.1135046
resid	-.1581352	.0982637	-1.61	0.108	-.3507285	.0344581
vexpo	.0684229	.1668643	0.41	0.682	-.2586251	.3954709
vpark	.8043992	.3123664	2.58	0.010	.1921722	1.416626
foodtv	.0748942	.1893303	0.40	0.692	-.2961864	.4459747
diet	155.397	80.77537	1.92	0.054	-2.919832	313.7138
diet_type	-.1549308	.0805575	-1.92	0.054	-.3128206	.0029589
md1	.0946552	.0568681	1.66	0.096	-.0168842	.2061146
ich_md	-.2259967	.1678092	-1.35	0.178	-.5548967	.1029033
imp_preserve	.2719059	.1767714	1.54	0.124	-.0745597	.6183714
value_preserve	-.0674732	.1688619	-0.40	0.689	-.3984364	.2634901
preserve_mot1	.0031855	.0549817	0.06	0.954	-.1045767	.1109478
tourism_validity	-.0735748	.1501303	-0.49	0.624	-.3678248	.2206752
tourism_demand	-.0750186	.1249601	-0.60	0.548	-.3199359	.1698986
tourism_resource_attractiveness	.7040651	.1477279	4.77	0.000	.4145237	.9936065
vilt_puglia	.0005256	.2731769	0.00	0.998	-.5348913	.5359426
know_pf	-.7245108	.2474086	-2.93	0.003	-1.209423	-.2395988
attract_pf	.0076656	.1026671	0.07	0.940	-.1935582	.2088894
future_re_cult	.0557443	.1290727	0.43	0.666	-.1972336	.3087222
recult_1	-.0216887	.071608	-0.30	0.762	-.1620379	.1186605
_cons	-160.1538	80.46524	-1.99	0.047	-317.8628	-2.444814

3						
age	-.0003819	.1732962	-0.00	0.998	-.3400363	.3392724
gender	-.4307829	.2972041	-1.45	0.147	-1.013292	.1517265
occ	-.3785989	.1643506	-2.30	0.021	-.7007202	-.0564777
edu	-.0348635	.1525873	-0.23	0.819	-.3339292	.2642021
income	.2871038	.1149307	2.50	0.012	.0618437	.5123638
son	.1058696	.3774605	0.28	0.779	-.6339394	.8456785
resid	.0756494	.1858581	0.41	0.684	-.2886258	.4399245
vexpo	-.0306158	.3145353	-0.10	0.922	-.6470937	.5858621
vpark	.5583192	.6579845	0.85	0.396	-.7313067	1.847945
foodtv	-.094587	.3385491	-0.28	0.780	-.7581311	.5689572
diet	242.6969	157.6827	1.54	0.124	-66.35553	551.7494
diet_type	-.2420118	.1572964	-1.54	0.124	-.5503071	.0662834
md1	-.0715251	.1029437	-0.69	0.487	-.2732912	.1302409
ich_md	.0641465	.3032616	0.21	0.832	-.5302354	.6585283
imp_preserve	.3345814	.3455758	0.97	0.333	-.3427348	1.011898
value_preserve	-.6958502	.36494	-1.91	0.057	-1.41112	.0194192
preserve_mot1	.0679713	.1004078	0.68	0.498	-.1288243	.264767
tourism_validity	.5665727	.3181346	1.78	0.075	-.0569596	1.190105
tourism_demand	.0329296	.2322316	0.14	0.887	-.4222359	.488095
tourism_resource_attractiveness	.216804	.3179076	0.68	0.495	-.4062834	.8398914
vilt_puglia	.2058866	.5272759	0.39	0.696	-.8275553	1.239328
know_pf	-.2301755	.4682272	-0.49	0.623	-1.147884	.687533
attract_pf	.1108855	.2085247	0.53	0.595	-.2978155	.5195864
future_re_cult	.4492584	.2772854	1.62	0.105	-.0942111	.9927279
recult_1	.0550133	.1317241	0.42	0.676	-.2031612	.3131877
_cons	-249.2304	156.9707	-1.59	0.112	-556.8873	58.42643

Source: Author's elaboration with STATA 14.2

Figure 26. Predicted probabilities



Source: Author's elaboration with STATA 14.2

5. CONCLUSIONS

Mediterranean Diet is an intangible cultural resource which belongs to all humankind, as acknowledged by UNESCO in 2013. It is a repository of knowledge and meaning of millennia and its value goes beyond the mere monetary one but, because of investment in its preservation and development are necessary, the estimation of its economic value is needed.

In this thesis, the contingent valuation method was applied to estimate the economic value of the Intangible Cultural Heritage of the Mediterranean Diet and to define which are the determinats of people willingness to pay to "experience" MD heritage. This non-market technique was selected according to its feasibility to asses both the use and non-use value implied by willingness to pay for non-market goods, as cultural ones are. Results confirm the robustness of that method, by providing satisfying answers to the research questions. Considering that its limitations in terms of possible bias, such as, the embedding problem, the starting point bias, the free-riding bias and, first of all, the information problem, very common in CV applied to cultural goods, usually occur due to improper administration and implementation of the CV method (Venkatachalam, 2004), this study shows that, following NOAA report guidelines, they can be controlled.

To evaluate people's WTP for MD heritage, it was proposed to decline ICH of MD in an innovative way, a cultural good, "Mediterranean Diet District", hypothetically situated in the province of Foggia. It is an original idea of the author of this work, which finds its scientific basis in concept of "commodification" of intangible cultural heritage through tourism. An innovative form of cultural tourism, it is a cultural good itself, thought to preserve cultural heritage by generating demand for it. In other word, attributing use value to heritage (Medina, 2003). Infact, it is designed to let people "physically and actively experience" the intangible cultural heritage of the Mediterranean diet, with the final aim to reinforce the effects produced in terms of construction of emotional memory and of structuring experiences, which generate new meanings around the Mediterranean diet and facilitate its adoption in everyday life. It may be considered, from a constructivist perspective, an alternative route to learn about MD heritage, not to be considered an inauthentic method (Medina, 2003). Results obtained confirm that, alternative initiative of dissemination and raising awareness about MD as ICH of Humanity, are necessary. Infact, notwithstanding, the numerous awareness and communication campaigns conducted about this topic, the 45% of the italian respondents has never heard about MD as intangible cultural heritage of Humanity, but after it has been given a detailed description of what ICH of MD is, the majority of the sample confirms the importance of preserving it (61,76% very important; 25,31 important; 10,81 moderately important). On the basis of the description provided, "Mediterranean Diet District" was positively evaluated by respondents,

both in terms of its effectiveness as an instrument able to preserve and disseminate the ICH of the MD and in terms of being an hypothetical cultural tourism attraction able to improve the tourist demand in the province of Foggia. Respondents, also supported their previous answers by declaring that"Mediterranean Diet District", is a cultural good with high tourist attractivity, expressing strong intention to visit it (45,48% very much, 36% very; 18% moderately). These results, added to those explaining the appeal of province of Foggia as a tourist destination (about the 63% of the respondents strongly agree or agree in defining the province of Foggia an appealing tourist destination, the 26% of respondents are undecided about its tourist attractiveness and about 10% of respondent does not evaluate the province of Foggia an interesting tourism destination); if they believe that the development of innovative cultural and recreational activities may be a valuable strategy of tourism development of this territory (a future improvement of the tourism offer of this territory by developing cultural and recreational activities have the consent of about the 80% of the respondents, the remaining 20% is undecided or disagree); and what kind of activities the respondents think that should be developed to improve its tourist offer (food itineraries with 59% and cultural ones with 20,85% are the first two categories of tourism activities that respondents think that should be developed in the province of Foggia, followed by educational tours dedicated to specific targets, natural itineraries dedicated to specific sports and finally by events organization as festivals and fairs), suggest a potential success of the"Mediterranean Diet District", as it was conceived by the author. A cultural tourism good "ibrid" between an amusement park, a science district and an interactive museum, based on the interconnection between people, environment, place and food for valorizing tourism as cultural product, also by enhancing the cultural identity of the province of Foggia as the tourist destination, and the general quality of visitors' experience, not forgetting "the incontestable relevance of food in the research of authentic tourism experience" (Mkono et al, 2013).

In terms of non monetary WTP, results show a good percentage of positive responses. About the 80% of italian respondents are willing to pay a daily entrance ticket for"Mediterranean Diet District". Instead the respondents' principal reason of a negative WTP lies in the characteristic of cultural heritage to be accessible for all and, for this reason, the 58% of the respondents, who are not willing to pay, thinks it should be free entrance. The result of the valuation of the mean WTP was 12,43 euro. It may be considered as a medium WTP for the "Mediterranean Diet District" daily entrance ticket. Therefore, the estimated annual economic benefit of the"Mediterranean Diet District", considering only Italian tourists of Apulia (the 2.732.430 foreign tourists of Apulia in 2015 were excluded[10]) and its inhabitants, is potentially equal to 16.359.023,56 euro. These

[10] Source: Confcommercio, Report: "Il turismo in Puglia", 2016

monetary CV results may be useful in many policy relevant issues like evaluating whether to undertake projects and, also, for determining the level of investment, in terms of how much effort and resources should be devoted, in preserving and revitalizing intangible cultural heritage of MD. At local level, investment in cultural projects of preserving and revitalizing intangible cultural heritage of MD are suggested to be seen as a possible way to stimulate the development of economic activities in a province with economic problems. The results may be useful to policy decision making to provide a solution to face the negative effects on health and nutrition, local economy, environment and biodiversity and social and cultural aspects due to the progressive decrease in adherence to the MD lifestyle and dietary pattern and to the progessive erosion of Mediterranean Diet heritage. This research may be useful to suggest an alternative project of local development (province of Foggia) which, starting from the project‘s potential power and effectiveness in disseminating “culture” and raising–awareness of health, social, economic and environmental benefits of Mediterranean Diet, could be able to affect the local economy, attracting visitors, empowering the tourism attractiveness of the province of Foggia and, consequently, generating direct and indirect effects in reference to a more general plan of destination management of this territory (Wang and Pizam, 2011). The monetary results may be used as starting points of a cost –benefits analysis to estimate the effects on local economy of the creation of the“Mediterranean Diet District”. If the effects of investing in cultural tourism will be high, the realization of the project could be supported also in substitution of more traditional projects and policies of local development.

The identified predictor variables of a positive willingness to pay to “experience” the MD by visiting the“Mediterranean Diet District”, describe a detailed profile of a potential visitor, confirming, in part, what suggested by theory. With a probability of the 97% an employed women with a personal monthly income from 1001 euro to 1500 euro, that have visited cultural and ricreational tourism attractions and attended food related events in the last two years, unsatisfied of the tourism attractiveness of the province of Foggia, that strongly would like to visit the “Mediterranean Diet District”, will be willing to pay a daily entrance ticket. In accordance with theory, non–monetary WTP results confirm that to be woman is positively related with WTP, as it is an higher income availability. It is also confirmed that people that are familiar with cultural and ricreational attractions consider appropriate to pay an entrance fee for this kind of attractions. Instead, the age of the respondents, that in previuos studies is often a consistent predictor, usually negatively related to WTP for no-market goods (Carson et al.,1994, Del Saz Salazar & Montagud Marques, 2005), in this study it is not significant. for non-monetary WTP as they are not, past visits to Apulia for tourism purpose and previous knowledge of province of Foggia, that in other studies

(Carson et al. 1992; Carson et al. 1994) were dimonstrated to be good predictors of future visits to the "site" or of general concern for the improvement of the tourism offer of geographical area.
In detail, if the set of bids proposed in the survey and the respective responses to the two WTP questions were considered, the visitors' profile with a positive WTP at any bids proposed is employed, has an high level of education and a high income disposal, withouth any children, has visited ricreational and cultural attractions in the last two years, has a deep knowledge of the MD and would like to visit very much the"Mediterranean Diet District", but did not know the province of Foggia, probably because he/she is not resident in Apulia region, coming from the rest of Italy or abroad. Results are in accordance with numerous contingent valuation studies which confirm that a more educated population is more likely to be willing to pay for public goods, like cultural ones (Echeverria et al., 1995, Thompson et al., 2002, Amimejad et al., 2006, Catalano et al., 2016). They confirm that having a previous knowledge of the topic that involved the good under evaluation is expected to be associated with higher level of WTP (Cameron and Englin, 1997, Del Saz Salazar and Marques, 2005).
In general the cultural and tourism habits of respondents and the attractiveness of the cultural good proposed play an important role in determining a positive WTP to "experience" the MD heritage. The econometric method applied has proved to be solid, having overcome successfully the diagnostic test (Brant Test), without rejecting the parallel lines assumption, and the comparison between two econometric analysis has given a greater robustness to obtained resuts. In conclusion, it could be argued that, by evaluating the economic value of the intangible heritage of the Mediterranea diet, supporting the evaluation with the proposal of experience the heritage by visiting the "Mediterranean Diet district", this study has revealed the potential power of the commodification of culture via tourism, in the form of innovative cultural tourism good to be experienced by consumers, making explicit, tangible, the use value of the intangible cultural heritage of the Mediterranean diet. If this evidence is neglected by not considering the commodification of the ICH of MD within tourism industry, the consequences may be, not only in terms of missed opportunities for local economic development, but also in terms of lost solutions to the progressive erosion of this intengible heritage, with the risk of a progressive disappearence of fundamental pillars of Mediterranean identity and its related negative impacts of food systems sustainability.

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