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Organic Menus in Restaurants: A Proposal to Increase their Demand among Tourists and Citizens

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Abstract: One of the major problems that organic food faces in Spain is low consumption rates compared to high production figures. The weight of restaurants in Spain becomes one of the main ways to increase the consumption of organic food. Based on the statistical PLS method, we propose a model to measure whether the demand and supply of the product on the one side and price and limitations of organic products on the other are crucial for the development of organic restaurants. This study attempts to shed light on an approach of the first national census in Spain to link the production of organic produce with these variables and menu preparation processes and certification as a system of quality assurance and product variety.

Key words: Certification, demand, limitations, organic menu, organic restaurant, price, supply.

INTRODUCTION

Spain, the second European country in the number of tourists it receives with >65 million in 2014 and 68.1 million in 2015 has become a culinary destination for tourists. Among them, 70% come from more developed European countries with a growing concern for healthy diets based on organic food and whose average food expenses during their holidays is one-third of their total spending (Kim *et al*., 2009).

The rapid evolution of people's diet in recent years (Camillo *et al*., 2010) moving from mere nutrition to finding the healthiest foods explains the current demand for these products, both in Spain and Europe. In the first case, the 'adoption of healthier eating habit's combined with the concern of knowing 'how to produce food and reduce soil contamination' involves a high rating to 'fresh produce' produced without chemical additives. In Europe, the highest growth expected in the organic sector lies in a higher awareness of healthy produce, both in mature markets (Denmark, Austria, Switzerland, United Kingdom and Germany) (Jensen *et al*., 2011) and in growing markets (Finland, France and Italy) (Schmid *et al*., 2007). Organic restaurants are beginning to earn importance in both markets through private associations.

In Spain, since the development of the first national census of organic restaurants-carried out by the Spanish Society of Organic Agriculture (SEAE) and a group of researchers from the University of Extremadura, the main motivation of restaurants has been observed to be the development of healthy menus made with organic produce. This trend has grown thanks to the recommendations of prestigious chefs and strategies developed by associations and federations of organic products processors.

Organic restaurants are becoming increasingly popular all over the world. It is understood as a sign of quality, food safety and respect for the environment (Lockie *et al*. 2006; Poulston and Yiu, 2011). However, although the principles governing organic food in the European Union (EU) are defined in Regulation 834/2007 and Regulation 889/2008 on organic production and labelling, organic restaurants are not included. To date, initiatives that help regulate the meaning and food preparation processes in organic restaurants throughout Europe have been put aside.

Already in 2007, the EU clarified that its regulatory scope (No. 834/2007) on the production and labelling of organic products (Article 1, 3) does not include organic restaurants and argued that 'organic restaurants can be regulated by national public or private regulation's. The reality is that, in Spain, as well as in Europe, there are no official regulations governing or defining organic restaurants in order to ascertain what is actually meant by 'organic restaurant' that would allow us to analyse the effects of the main variables that determine the individual variables of organic restaurants such as demand, supply, satisfaction of the restaurant, price and limitations caused by the lack of organic production.

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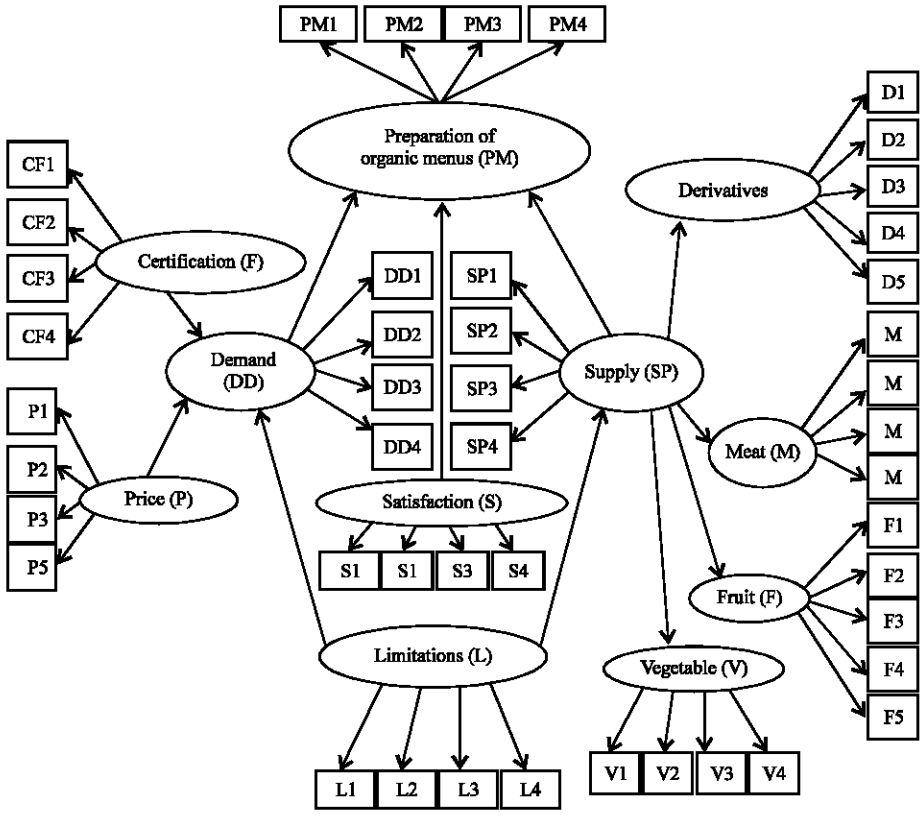

Fig. 1: Variables related to "Preparation of organic menus" in organic restaurants

Hence, in the absence of official standards, an analysis of the relations among variables becomes even more relevant for the sector to explain if the demand, supply, satisfaction of the restaurant, price and limitations have an impact in the cooking processes of organic menus carried out by restaurants in Spain. To do this, five constructs were designed.

Construct 1 (C1); cooking the menus: The process of preparing dishes with organic ingredients. It is the object of study in this study (dependent variable) bearing four constructs: demand, supply, satisfaction of the restaurateur with organic food and its limitations.

Construct 2 (C2); Food demand: The demand for organic products (meat, vegetables and fruit) through the menus offered. It is related to variables: certification as a possible strategy to be followed by organic restaurants and the prices on the menu which depends directly on the price of organic food.

Construct 3 (C3); Menu offered: The food (meat, derivatives, vegetables and fruit) offered by the producers to the restaurant.

Construct 4 (C4): The limitations produced by variety, seasonality and logistic difficulties are an essential criterion, either on the supply or the demand.

Construct 5 (C5): Restaurant satisfaction with organic food and, in particular with the characteristics reported in the literature, (i.e., taste, smell, nutrition and safety).

To ascertain the possible influence of constructs (C2-5) in the development of organic menus (C1), we established different hypothesis to analyse the extent that other constructs determine the development of organic menus in Spanish restaurants. For this, we determined 11 hypotheses on the basis of the relations established in Fig. 1, paragraph 3 (Methodology):

- H_1: The demand has a direct effect on the preparation of organic menus
- H_2: The supply has a direct effect on preparation of organic menus
- H_3: Derivatives have a positive effect on the spply
- H_4: Meat has a positive effect on the spply
- H_5: Fruit has a positive effect on the spply
- H_6: Vegetables have a positive effect on the spply
- H_7: Prices have an inversely proportional influence on Demand

- H_8: Certification has a positive effect on dmand
- H_9: The satisfaction of the organic restaurant influences the Preparation of organic menus
- H_{10}: Limitations influence the dmand
- H_{11}: Limitations influence the spply

The literature was analysed to ascertain the extent to which factors affect the preparation of menus with organic ingredients with the proper formulation of the study model.

Literature review

Preparation of menus: In the context of preparing dishes, the type of menu (organic or conventional) depends on certain elements that need to be planned ahead by the restaurant management, such as what will be produced, the type of ingredients that will be used and their potential customers the menu is addressed to Kincaid and Corsun (2003). Within this planning, the menu is the main tool that adds value to the restaurant and is based on the qualities of the food preferred by its customers prefer (Pratten, 2003) in order to meet the needs of these customers (Johns and Kivela, 2001; Gustafsson, 2004; Hansen *et al*., 2005).

In the process of developing and defining menus, other planning activities come into play such as the analysis of prices and demand (Jones and Mifll, 2001). These activities supplement the creation of the menu. Menu prices have been studied by different authors (Iglesias and Guillen, 2002; Raab *et al*., 2009) and from two perspectives: on one side, the relation between the cost of raw materials and the benefits or outcomes generated by the organic restaurant (Morrison, 1997) and on the other, alternative ways of perceiving the prices on the menu (Naipaul and Parsa, 2001).

In addition to menu planning, pricing and demand, other processes should be taken into account, such as the processes carried out in the kitchen, the variety of the produce, staff training, space for equipment (Morrison, 1997) and innovative processes in the development of menus.

Furthermore, in the process of developing and managing menus, it is necessary to consider other factors such as: quality of the service and product (Namkung and Jang, 2007), food safety (Fatimah *et al*., 2011), cost control and accurate demand forecasting (Ozdemir and Caliskan, 2014).

The importance of preparing menus offered to the customers is that they must also create a competitive advantage based on a culinary experience. Hence, special attention must be given to menus in order to achieve goals, offer differentiation strategies and strategically select the components of a gastronomic restaurant (Ozdemir and Caliskan, 2014).

Supply, demand and certification: One of the main concerns of the Spanish organic sector, producers, suppliers and processors is the demand for organic food, because this is an "emerging market" (Schmid *et al*., 2007). Between 2000 and 2012, the market for these products in Spain increased almost five times, producing around 998 million euros in 2013 which is 3.4% higher than the previous year. The registered organic sector has grown 361%, the number of producers has gradually risen to 127% and so has the processors, to 210%. However, this increases the contrast with the low level of domestic demand, significantly below the European average. In fact, the average per capita consumption in the EU is €43.8 while in Spain it barely reaches €21 (FiBL and IFOAM, 2015).

However, in the case of organic restaurants, the demand is not one of the main concerns of the employer. This is because of the large restoration market in Spain where the hospitality sector (called 'industry I, codes 55 and 56 CNAE 2009') and restaurants (accommodation, food and drink) represent >295.276 establishments with a production of over 120,739 million euros. The magnitude of the data reveals the scope of the restaurant sector, even taking into account the economic slowdown which has prompted new buying behaviours of consumers and changes in consumer habits.

In the context of a lack for demand for organic products, Spain, paradoxically, is the second leading country of organic producers in the EU (30,000), just after Italy (46,000) and has the most hectares available for organic crops. These figures are largely due to the EU rural development programmes and include one-eighth of the global organic producers. According to Spain's remarkable organic food figures, it is also interesting to analyse other variables related to organic produce that are directly related to organic restaurants such as: 'price' (Brown and Sperow, 2005; Willer and Kilcher, 2013), 'logistic's and 'variety' (Kalafatelis, 2008).

As regards 'price' of organic food, it is conceived as the main obstacle for consumers (Schmid *et al*., 2007; Napolitano *et al*., 2010). According to the results of empirical studies, prices differ depending on the consumer's interest (Hartman, 1997).

If we move from the price of organic produce to price of an organic meal on a menu in Spain, we find

differences. The price is no longer the main concern for organic restaurants. Thus, the 'average price of a meal (organic menu) at a restaurant is 11€ which clearly shows that they are in the same price range as conventional menus.

In fact, after conducting different interviews, organic restaurants said that they often purchase organic food directly to the orchards located on the outskirts of the city. They buy organic produce based on a relation of trust with small organic producers, rather than a brand of organic products (Inwood *et al*., 2009). This environmental system is called "Participatory Guarantee System" (Andrighetto, 2011). In some restaurants, particularly in Catalonia and the Basque Country, we found that restaurants have developed a network of relationships with small organic farmers from orchards located near the cities, where the supply of organic produce, produced in a traditional way without chemicals and which add value to the organic menu, are difficult to source from the international organic market. In fact, in Spain, 95.4% of respondents (Spanish restaurants) are not certified by public or private entities and there is no public or private authority to ensure that the products sourced for their organic menus are indeed certified.

This system based on trust is also a way of supporting the lack of confidence in certificates and the loss of values of small organic producers who sometimes use chemical pesticides despite organic certifications (Hutchins and Greenhalgh, 1997; Cicia and Giudice, 2004).

Satisfaction of organic restaurants: In recent years, eating healthy has gained importance for consumers. The impact of healthy food in restaurants is not sufficiently studied (Kim *et al*., 2013). Some researchers have linked the preparation of safe and healthy menus with a higher customer demand in restaurants (Namkung and Jang, 2007), others, the relation between the quality of healthy food and the value it brings the consumer and the satisfaction of the restaurant (Lai *et al*., 2009).

As regards organic menus, the satisfaction of both customers and restaurateurs would be more based on the type of food, i.e., healthier, higher quality and better flavour compared to conventional food and a preparation process that is more respectful to the environment.

In this context, organoleptic characteristics of organic food add value to the preparation of healthy menus, such as healthy eating (Schubert *et al*, 2010; Chang and Zepeda, 2004; Gil and Soler, 2006; Grankvist and Biel, 2001; Makatouni, 2002, Radman, 2005; Zanoli and Naspetti, 2002) and with a more intense flavour (Radman, 2005) compared to non-organic food.

Organoleptic characteristics of organic food also add a distinctive quality, food safety and respect for the environment (Lockie *et al*., 2002; Poulston *et al*., 2011). Therefore, cooking with organic produce grown without chemical additives from the soil ensures a final quality on the plate in line with their organoleptic characteristics: taste, smell, texture, food safety and nutritional value (Makatouni, 2002; Lockie *et al*. 2002; Radman, 2005). Although, there are authors who do not consider organic food to be more nutritious (Mikkelsen, 1993). In countries like Italy and Greece, there are gastronomic initiatives that revolve around the quality of organic food as 'eat to enjoy', the synergies of which are visible in both countries (Fotopoulos *et al*., 2003; Zanoli and Naspetti, 2002).

However, the extensive literature on organoleptic qualities of organic products also contrasts with the difficulties experienced by a sector that is not sufficiently known, especially in Spain. This results in a number of constraints that need to be taken into account when preparing menus with these products.

Limitations: Organic products in Europe have different limitations such as: excessive legal regulations, high prices (Flaten *et al*., 2010) and a scarce availability of supply due to the lack of variety and shortage of raw materials driven by the seasonality of products. Some studies have even differentiated between urban markets, defined as "mature or growing" markets and markets in rural areas considered "emerging" (Schmid *et al*., 2007).

Regarding the "variety" variable, some research suggests that the variety of a product, besides price, is one of the essential factors in buying organic products (Zepeda and Li, 2007). This aspect is essentially relevant for restaurants since the preparation of menus requires a high variety of products. For Spanish restaurants and as claimed by a total of 109 restaurants, the variety of organic food is not a major problem. While 12.3% in total express this limitation, "seasonality" of products, "price" of "food certificated" have even higher rates (31.6, 27.3 and 22.9%, respectively).

Organic logistic constraints in Spain have become the main problem as reflected by 31.6% of the restaurants (Robina and Cerda, 2015). This is so because unlike other countries with 'mature' or 'growing' markets, Spain is a country 'supplied by pioneers of organic farming, with a

small number of operators and unorganised structure's and therefore, it constitutes a 'small market segment with significant growth potential' (Schmid *et al*., 2007). In this context, it is urgent to improve marketing structures to meet the expected growth, especially expanding the range of organic products to meet the demand of organic restaurants (Starr *et al*., 2003; Schmid *et al*., 2007).

Once the main factors that participate in the satisfaction of organic restaurants have been analysed, we move on to analyse to what extent the independent variables ('demand', 'certification', 'supply', 'limitation's, 'satisfaction of organic restaurant's) help explain the dependent variable 'Preparation of organic menu's through the Smart PLS methodology.

MATERIALS AND METHODS

The reason behind using the PLS technique instead of others, like CBSEM, to determine whether the constructs 'Demand', 'Supply', 'Price', 'Limitation's and 'Satisfaction of the organic restaurant' explain the decision to develop menus with organic products, is because this study is geared towards predicting the dependent variable (Preparation of organic menus) (Chin 2010). In particular, we used Smart PLS.

Table 1 shows the relationship among constructs. The only dependent variable we considered is "Preparation of organic menus" (E). This construct is composed of indicators included in the literature review and extracted from meetings held in organic restaurants in cities such as Seville, Barcelona, Bilbao and Madrid. From there, the features conceived by restaurants related to the 'Preparation of organic menu's are: Preparation of menus with organic food (E1), Use of some organic ingredients in preparing menus such spices, for instance (E2), Reject chemical substances in menus (E3) and, Be respectful to the environment when preparing menus (E4).

As regards, the main aspects related to 'Preparation of organic menu's, we also studied the satisfaction of the organic restaurant with: Taste (S1), Smell (S2), Nutrition, (S3) and Safety (S4).

There are another two constructs regarding the food demanded by restaurants: Meat (DD1), Derivatives (DD2), fruits (DD3) and Vegetables (DD4). Certification of the organic restaurant: Public (CF1), Private (CF2), Desire to be certified (CF3) and Certification of the utensils used to prepare organic menus (CF4). Price: Meat (P1), Derivatives (P2), Fruits (P3) and Vegetables (P4).

Regarding the food supply from organic producers: Meat (SP1), Derivatives (SP 2), fruits (SP3), Vegetables (SP4) and among them, after considering the interviews and the data obtained from questionnaires, the food most supplied by producers to restaurants are:

- Meat: Pork (M1), Lamb (M2), Chicken (M3) and Veal (M4)
- Derivatives: Milk (D1), Eggs (D2) butter (D3), Bread (D4) and Yogurt (D5)
- Fruit: Cherry (F1), Plumb (F2), Apple (F3), Peach (F4) and Pear (F5)
- Vegetables: Onion (V1), Cauliflower (V2), Courgette (V3) and Tomato (V4)

Regarding the Limitations (L), we noted the following: Logistic (L1), Variety (L2) Seasonal (L3), Price (L4); and regarding Satisfaction (S): Taste (S1) Smell (S2), Nutrition (S3) Safety (S4). The model includes the relationship between constructs illustrated in Fig. 1. For the preparation of the hypotheses, we included questions posed to organic restaurants in the questionnaire (Table 2) and those found in the literature review.

RESULTS AND DISCUSSION

Roldan and Franco (2012) suggested two stages in the PLS analysis: first, the assessment of the measurement model and second, the analysis of the structural model. This succession permits the availability of the appropriate indicators of constructs before attempting to reach conclusions concerning the relationships included in the structural model (Hair *et al*., 2011).

The measurement model for reflective constructs is assessed in terms of individual item reliability, construct reliability, convergent validity and discriminant validity. Individual item reliability is assessed by analysing the standardised loadings (λ). The indicators should usually surpass a minimum level of 0.707 defined by Carmines y Zeller. The study presents the scenario as shown in Table 1 as most values are higher than that figure, even >0.8.

The Cronbach's alpha and composite reliability tests (CR, Composite Reliability) shall be taken to review the consistency of a construct. This assessment measures the consistency of a construct based on their indicators (Gotz *et al*., 2010), i.e., the rigour with which these items measure the same latent variable.

Cronbach's alpha determines a consistency index for each construct and has values between 0 and 1. The lower limit to accept the reliability of the construct is usually set between 0.6 and 0.7 (Hair *et al*., 2012). Most validity values will be close to 1. In this case, as shown in Table 3, all values presented are above 0.75.

Table 1: Proposed hypothesis from the quesionnaire

Hypothesis	Question	Bibliography
H_1: The demand has a direct effect on the Preparation of organic menus	P_1 (Demand) Would you like to increase the percentage of organic products in the future for a possible increase of demand? P_2 (Preparation of organic menus) What do you understand by organic restaurant? An establishment that prepares menus with organic produce or with organic ingredients (spices) avoiding chemicals in preparing menu and with respect towards the environment in the process (consumption of electricity, gas)?	Jones and Mifli (2001) and Morrison (1997) and Ozdemir and Caliskan (2014)
H_2: The supply has a direct effect on the Preparation of organic menus	P_3 (Supply) What organic foods are used in menus: meat, derivatives, fruit, vegetables, others:_____?	Vitterso *et al.* (2005) and Krystallis *et al.* (2006)
H_3: Derivatives have a positive effect on the supply	P_4 (Derivatives) Please indicate, what organic food do you source: eggs, milk, butter, yogurt, bread, Other:_____?	Loes *et al.* (2008) and Zanoli *et al.* (2007)
H_4: Meat has a positive effect on the supply	P_5 (Meat) Please indicate which organic animal products you offer: Veal, Pork, Chicken, Lamb, Other:_____	Krystallis et al. (2006) Pearson *et al.* (2011)
H_5: Fruit has a positive effect on the supply	P_6 (Fruit) Please indicate which organic products of plant origin (fruit) do you offer: cherry, plums, apples, peach, pear, Other:_____	Larson *et al.* (2000, September)
H_6: Vegetables have a positive effect on the supply	P_7 (Vegetables) Please indicate which organic products of plant origin you offer: tomato, onion, cauliflower courgette, Other:_____	Pearson *et al.* (2011).
H_7: Price has an inversely proportional effect on demand	P_8 (Price) Please let us know if it the price of organic food exceeds the prices of conventional food	Naipaul and Parsa (2001) Jones and Mifli (2001) and Iglesias and Guillen, 2002; Raab *et al.*, 2009;
H_8: Certification has a positive effect on demand	P_9 (Certification) Has your restaurant been certified by a public institution? P_{10} (Certification) Has your restaurant been certified by a private institution? P_{11} (Certification) Would you like to be certified as an organic restaurant? P_{12} (Certification) Do you certify the cooking utensils?	Poulston and Yiu (2011), Hutchins and Greenhalgh (1997), Cicia and Del Guidice (2004) and Soler *et al.* (2006)
H_9: The satisfaction of the organic restaurant influences the preparation of organic menus	P_{13} As a restaurant, tell us your level of satisfaction with the following organoleptic characteristics of organic food: Taste, smell, nutrition, safety	Kim, et al. (2013), Namkung and Jang, (2007), Conin *et al.* (2000) Lai et al., 2009)
H_{10}: Limitations influence the demand	P_{14} What limitations do you have when preparing organic menus? Logistic. Variety. Seasonality. Higher price of organic products compared to others.	Kaltoft and Risgaard (2006), Flaten *et al.* (2010), Zepeda and Li (2007), Robina and Cerda (2015) and Kalafatelis (2008)
H_{11}: Limitations influence the spply	What limitations do you have in preparing organic menus? Logistical. Variety. Seasonality. Higher price of organic products compared to others	

Table 2: Assessment of the measurement model

Constructors	Indicators	Loading (λ)
Preparation of organic menus	Use of some organic ingredients such as spices	0.889
	Preparation of menus with organic products	0.925
	Rejecting chemical substances in menus	0.862
	Be respectful to environment when preparing menus	0.841
Demand	Meat	0.880
	Derivatives	0.748
	Fruit	0.879
	Vegetables	0.829
Supply	Meat	0.844
	Derivatives	0.903
	Fruit	0.776
	Vegetables	0.846
Satisfaction of the organic restaurant	Safety	0.900
	Smell	0.775
	Taste	0.767
	Nutrition	0.900
Limitations	Seasonal	0.751
	Variety	0.941
	Price	0.805
	Logistic	0.941
Price	Meat	0.790
	Derivative	0.737
	Fruits	0.744
	Vegetables	0.764
Certification	Desire to be certified	0.798
	Certification of the utensils	0.716
	Certification by public institution	0.962
	Certification by private institution	0.962
Offer: Meat	Pork	0.915
	Lamb	0.750
	Veal	0.856
	Chicken	0.728

Table 2: Continue

Constructors	Indicators	Loading (λ)
Offer: Derivatives	Egg	0.920
	Milk	0.846
	Butter	0.965
	Bread	0.782
	Yogurt	0.947
Offer: Fruit	Plumb	0.970
	Apple	0.949
	Peach	0.979
	Cherry	0.962
	Pear	0.984
Offer: Vegetables	Cauliflower	0.925
	Onion	0.923
	Courgette	0.779
	Tomato	0.968

Table 3: Consistency of the constructs

Constructs	Cronbach's alpha
Satisfaction of organic restaurants	0.85
Meat	0.83
Certification	0.88
Demand	0.85
Derivatives	0.93
Preparation of organic menus	0.88
Fruit	0.98
Vegetables	0.92
Limitations	0.88
Supply	0.86
Price	0.75

The third indicator that we use is the AVE. This is defined as the average variance extracted and reports how much variance a construct obtains from their indicators regarding the amount of variance due to measurement error (Fornell and Larcker, 1981). The recommendation of these researchers is that AVE must be greater than or equal to 0.50 which can be interpreted as that >50% of the variance is due to construct indicators.

According to this suggestion, the AVE exceeds 0.58. For discriminant validity, we compared the AVE's square root, (i.e., the diagonal in Table 4) with the correlations between constructs (i.e. elements outside the diagonal of the table). In order to meet the requirement of discriminant validity, diagonal elements should be significantly higher than the off-diagonal elements in the rows and columns (Table 4) (Chin, 2010).

The fourth statistical is "Composite Reliability" (CR) proposed by Werts to assess the internal consistency reliability of the composite model and uses the load indicator to analyse causality. As shown in Table 5, the calculation of composite reliabilities reconfirms that all constructs have a high internal consistency in presenting values between 0.84 and 0.98. Therefore, well above the minimum required level of 0.7 (Bagozzi and Yi, 1988; Hair *et al*., 2011; Nunnally, 1978).

The evaluation of the structural model is based on the sign, the magnitude and significance of the coefficients of structural trajectory, the values of R^2 and Q2 to test the predictive relevance. The variance explained in an endogenous construct by other latent variables can be measured from the absolute value of the multiplication of the path coefficient by the correlation of the two variables (Falk and Miller, 1992).

The analysis of these coefficients and their statistical significance allow us to test the hypotheses of the proposed research. Several authors, such as Chin (1998), considered the value of β acceptable if it is ≥0.2 while the desirable value should be above 0.3. However, this same author also points out that β values between 0.1 and 0.2 indicating an influence of moderate character could be considered.

Falk and Miller (1992) proposed a predictor variable should explain at least 1.5% of the variance in an endogenous variable. Moreover, it suggests that the product of β multiplied by the coefficient of correlation between the two variables is equal to or >0.015. In this case, all β are above that amount. The values obtained in this test, along with standard regression coefficients have been gathered in Table 7 and allow contrasting the hypotheses of the proposed structural model.

In order to analyse the predictive power of the model in terms of explained variance, Chin (1998) considered R^2 values of 0.67, 0.33 and 0.19 (strong, moderate and weak, respectively). Therefore, in our case, R2 takes a value of 0.572, so the prediction of the model is in the moderate to strong range. This tells us that it is not only considered within the limits of significance and reliability of the model but also that it has a high predictive value.

If we analyse the other two R^2 of the dependent variables 'Demand' and 'Supply', in Table 6, we see that the value of the explained variance is 'strong' in the case of the first one and between 'moderate' to 'strong' in the second. Although, we could also consider it 'strong' because the difference is minimal (0.003). This means the 'Demand' is very well explained by variations in the

Table 4: Reliability coefficients construct and convergent and discriminant validity

Variables	AVE	1	2	3	4	5	6	7	8	9	10	11
Satisfaction of organic restaurants	0.70	0.84										
Meat	0.67	0.32	0.82									
Certification	0.75	0.10	-0.08	0.87								
Demand	0.70	0.41	0.13	0.47	0.84							
Derivatives	0.81	0.68	0.58	-0.03	0.29	0.90						
Preparation of organic menus	0.77	0.56	0.17	0.12	0.63	0.37	0.88					
Fruit	0.94	0.29	0.20	-0.12	0.00	0.47	0.20	0.97				
Vegetables	0.81	-0.04	0.21	-0.07	0.00	0.42	0.15	0.47	0.90			
Limitations	0.75	0.23	0.00	0.54	0.72	0.11	0.36	-0.10	-0.01	0.86		
Supply	0.71	0.32	0.49	0.01	0.43	0.70	0.54	0.43	0.60	0.25	0.84	
Price	0.58	0.46	0.16	0.46	0.80	0.34	0.39	-0.02	-0.01	0.71	0.20	0.76

Table 5: Reliability coefficients constructs and convergent and discriminant validity

Constructs	Composite reliability
Satisfaction of the organic restaurant	0.90
Meat	0.88
Certification	0.92
Demand	0.90
Derivatives	0.95
Preparation of organic menus	0.93
Fruit	0.98
Vegetables	0.94
Limitations	0.92
Supply	0.90
Price	0.84

'Price' and 'Limitation's. Also, 'Derivative's and 'Vegetable's correctly explain 'Supply'. Therefore, 'Derivative's (bread, milk, egg, etc.) and 'Vegetable's are more appreciated than the 'Meat' and 'Fruit'.

A contrast of hypothesis: The calculation of the path coefficients must be accompanied by a report of its statistical significance and, ultimately, of the goodness of the adjustment. This goodness is measured by the statistical t-test resulting from applying bootstrap resampling for 500 subsamples (Hair *et al*., 2011). It used the student's t distribution of a queue, as in the model specified in the direction of relationships. From this point, the value used as a reference of statistical significance is t = 1.64791345 for 95% confidence level. The values obtained in this test, along with standard regression coefficients, have been gathered in Table 6 and allow the hypotheses of the proposed structural model.

With a significance level of 99% and 95%, hypotheses reflect different results. In the first case, variations of the β and t are: β>0.3 (Chin, 1998) and t>2.333843952 (Hair *et al*., 2011). While second significance level is lower with β>0.3 (Chin 1998) and t>1.64791345 (Hair *et al*., 2011). The following hypotheses are met:

'Demand' has a direct effect on 'Preparation of organic menu's (H_1, β = 0.3821, t = 3.6251 Statistics). It is a particularly logic result being an emerging organic market (Schmid *et al*., 2007) where the level of domestic demand is much lower than the European average (FiBL & IFOAM, 2015).

The 'Supply' has a direct effect on 'Preparation of organic menu's (H_2, β = 0.2816, t = 3.0872 statistics), due to certain aspects of the menu preparation process, like 'what will be produced' and 'the kind of ingredients that will be used' (Kincaid and Corsun, 2003). This also becomes the best way to explain the qualities of food to customers (Pratten, 2003), especially, when referring to the preparation of menus with organic produce (Makatouni, 2002; Schubert *et al*, 2010; Chang and Zepeda, 2004; Gil and Soler, 2006; Radman, 2005). Among the 'Supply' variables mentioned in point 2), the importance of 'Derivative's (H_3, β = 0.4010, t = 4.5772 Statistics) principally, milk, flour, bread, eggs, etc., is highlighted in the 'Preparation of organic menu's. 'Vegetable's are also important (H_6, β = 0.3742, t = 5.2725 statistics) because they are one of the main ingredients used in preparing organic menus. However, in contrast with the high significance of the 'Supply' of these products, the importance of 'Meat' in the significance of the construct is lower (H_4, β = 0.1687, t = 2.7240 statistics) since, from the perspective of restaurants, this type of produce has a second place in preparing the menu.

'Price' has an inversely proportional influence on 'Demand' (H_7, β = 0.5686, t = 3.5068 statistics). In the case of organic restaurants, prices are one of the main drawbacks for customers to access these products in the organic produce market. (Zepeda, and Li, 2007). Logically, the increase in the price of the products is transferred to the restaurant (Jones and Mifll, 2001). Several research (Iglesias and Guillen, 2002; Raab *et al*., 2009) studied the prices on the menu from two perspectives: on one side, the relation between the cost of raw material and the benefits or outcomes generated by the organic restaurant (Morrison, 1997) and on the other, related to the way people perceive the prices on the menu (Naipaul and Parsa, 2001). In the case of Spanish restaurants, in order to reduce the price of products and also to ensure variety, restaurants have decided to participate in the so-called 'Participatory Guarantee System's (Andrighetto, 2011; Santacoloma, 2008, IFOAM, 2011) by buying food directly from small organic producers.

The satisfaction of organic restaurants with organic produce has influenced the 'Preparation of organic menu's (H_9, $\beta = 0.3139$, $t = 3.5561$ statistics). Therefore, the value of organic food for a healthy diet (Schubert *et al*., 2010; Chang and Zepeda, 2004; Gil and Soler, 2006) has shifted from the quality of the food to that of the organic menu by preparing healthy dishes, something that has really influenced the restaurateur's satisfaction (Lai *et al*., 2009).

'Limitation's influence the 'Supply' (H_{11}, $\beta = 0.212$, $t = 3.6159$ statistics) and 'Demand' (H_{10}, $\beta = 0.2913$, $t = 1.6898$ statistics). As mentioned in relation to 'Demand', limitations are evident, since the Spanish organic food market is still an emerging one (Schmid *et al*., 2007). This is due to not having a consolidated volume of consumers allowing restaurants to standardise their stocks. Hence, organic restaurants in Spain cannot take advantage of 'economies of scale' in the transport of goods, becoming the main limitation for them. Added to this, there are other limitations such as 'Price's (Harris *et al* 2008; Flaten *et al* 2010) which drive organic restaurants to opt for 'Participatory Guarantee System's, due to the to lack of variety and the shortage of raw materials, a consequence of product seasonality.

The dynamism of organic food in Spain along with strong hotel and catering industry lead us to think that, alongside the sale of organic food in local markets, there are other mechanisms that reach the final consumer. Moreover, it is precisely in gastronomy, in the preparation of menus with organic produce, where the purpose of this paper lies. In this sense, we wanted to ascertain which variables explain the decisions the organic restaurant takes before preparing these organic menus.

The results of the questionnaires conducted to restaurants that usually prepare menus with organic produce reveal that the preparation of these menus has a high predictive significance, as an endogenous variable, reaching the value of 57.2% and directly related to the demand (H_1), Supply (H_2) and indirectly, to the Price (H_7) and Limitations (H_{10} and H_{11}).

Paradoxically, 'Demand' is not one of the main concerns for organic restaurants (Robina and Cerdá, 2015), unlike the consumption of organic produce. Hence, H_{10} while being significant, is less than the rest of the hypotheses. This is much lower than the EU case, mainly for two reasons: One, due to the developed gastronomic culture in Spain that lead people to enjoy restaurant menus; and two, to the good prices many restaurants get when sourcing their products directly from organic farms through the "Participatory Guarantee System" (Andrighetto, 2011).

This latter aspect greatly facilitates the supply of produce, specifically 'Derivative's which bear a greater weight on the model and which are absolutely necessary for the preparation of menus where the availability of this kind of ingredients (Morrison, 1997) and their planning in the menu (Jack, 1997) are essential.

These aspects, based on the properties of healthy food, produced a positive impact on the satisfaction of the restaurant (Conin; Lai *et al*., 2009). Hence, "Preparation of organic menus" is related to "Satisfaction of the organic restaurant" (H_9). This relationship, created in H9, reveals that the satisfaction of the restaurant with organic food has a positive influence on "Preparation of organic menus".

All these positive aspects, included in the literature concerning organic food, are contrasted with the poor culture and low awareness of organic food in Spain (Montoro *et al*., 2006). This causes other problems such as: logistical, seasonal and the high price of certified food.

In this regard, while restaurants have a supply system based on the direct purchase to small organic farmers, they also need to be provided with certified food such as meat, derivatives and also, fruit. This is the reason why the price is the second highest load factor in the model. This is where price of the products increases the price of organic menus compared to conventional menus. Hence, the price of organic food is the third concern of the restaurateurs yet not the highest concern for organic restaurants.

Finally, we could not fail to address one aspect considered relevant to ensure and differentiate one restaurant from another and that is certification. Hence, we include a hypothesis that certification has a positive effect on 'Demand' (H_8). However, the result shows that this hypothesis has not been fully supported. This may be due to a lack of trust in the certificates or markings related to a loss of the true values of organic food with the use of chemical pesticides (Hutchins and Greenhalgh, 1997; Cicia and Giudice, 2004), forging documents and replacing certifications (Vries *et al*., 2014; Istasse, 2016; Spink and Moyer, 2011). In fact, in Spain 95.4% of Spanish restaurants are not certified by public or private organisms and there is no public or private authority to ensure that the food they buy to prepare their dishes is even certified.

CONCLUSION

Overall, we can say that the work presented, from the first census of organic restaurants in Spain, is a first step

towards establishing a common standard throughout Europe. We understand that it would be beneficial for all those who work on the various initiatives based on 'organic holiday's, 'organic rural house's, 'green hotel's, 'organic catering', 'green and organic farming', etc.

In short, the proposed model contributes to shed light on a phenomenon not yet officially regulated in any EU country. Moreover, although this institution stated that the regulation of organic restaurants is not within its regulatory scope (No. 834/2007), it is understood that it would be beneficial for consumers to have a policy to help clarify what is meant by organic restaurant and oversee the authenticity of healthy foods and healthy preparation processes.

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