

THE STUDY OF GASTRONOMIC TOURISM IN CÓRDOBA AND THE ASSOCIATION OF THE CUISINE. AN ECONOMETRIC ANALYSIS

Genoveva Millán Vázquez de la Torre
Ricardo Hernández Rojas
Virginia Navajas Romero

Original scientific paper

Received 13 January 2016

Revised 18 April 2016

4 July 2016

Accepted 6 October 2016

<https://doi.org/10.20867/thm.22.2.7>

Abstract

Purpose – As the city aspires to declare itself as a quality dining destination, this paper aims to provide some guidelines to achieve that goal.

Design – The paper aims to appraise as to what extent the gastronomic product supply of Córdoba can be considered a high quality and differentiated one, which may serve as a basis for tourism product development.

Methodology – we use a univariate and bivariate analysis in order to describe the socioeconomic variables to explain the variety of restaurants in Córdoba and the relationships among them. To forecast the demand of gastronomic tourism in Córdoba, we use ARIMA models.

Finding – The findings of the study give an insight into the gastronomic tourism of Córdoba. Culinary tourism is a growing industry, made up of micro-companies, most of which are restaurants with menus where different dishes of Córdoba gastronomy appear, because they believe that products with designation of origin have an excellent quality and can attract tourists.

Originality – The paper makes an estimate of the demand for gastronomic tourism in Córdoba. No other study on the topic exists due to the complexity of obtaining reliable information. The originality of this paper comes out of the need to forecast and identify the socioeconomic characteristics of the Córdoba cuisine.

Keywords Gastronomic routes, Protected Designation of Origin, Gastronomic Tourism, ARIMA models, Córdoba

INTRODUCTION

Gastronomic tourism has become a key factor for stimulating the economy not only in rural areas but also in the urban areas which host many of the gastronomic routes. Enhancing certain local products through distinctions that are recognized at the national and regional level, and are characterized by the quality of the dishes, which is supported by a certification (Consejo Regulador Montilla-Moriles and Baena) obtained through regulatory boards of designation of origin or geographical indications, make them more attractive, not just because of their nutritional characteristics, but also they become a tourism product capable of boosting the gastronomic tourism sector.

Gastronomy acts as an identifier of a place's culture, however we must not use it as an intrinsic and distinctive element, but as a valid selling argument (Armesto and Gomez, 2004). Local cuisine is not just a cultural identification. It is much more, as it can

properly create its own tourism products. This concept increases the value of the destination apart from the value of the product itself (Barrera and Bringas, 2008).

Gastronomic routes, understood as itineraries where tourists can learn about the production process of a product or taste it, are more than a rural product as they can be linked to the city. Commercially, these routes allow tourists to learn about the products beginning with the manufacturing stage until the final stage where the finished product is displayed in gourmet shops, giving an additional commercial value to gastronomic tourism (more selective, challenging and with higher purchasing power, Millan et al., 2014). The gastronomic tourist uses their five senses to experience the product. For example, who does not remember the stacked barrels when visiting a winery (sight); the smell of wine in oak barrels (smell); the flavor of the wine (taste); the sound of the press when crushing the grapes (sound); taking a bottle or glass and pouring the wine, appreciating its texture (touch)? Therefore, the tourist acquires a memory of that experience through a tourism product based on gastronomic routes.

Gastronomic tours take place on a predetermined route with the intention of making them memorable, allowing tourists to enjoy the agricultural and industrial production process and a series of dishes that express the cultural identity of a region. It involves all agents starting with the producers, who host tourists in their factories and teach them about the production process, and about the menu or culinary offers based on the local primary production. The culinary dishes of these places are designed around a raw material or, in some cases, around a group of products (wine and oil). These products provide the route with an identity that develops on the base of the route network (Schlüter and Thiel, 2008).

Cultural values are changing in terms of food preferences; customers seek high quality culinary dishes. We eat differentiated or organic products that adapt to the new necessities of the different market segments. This forces manufacturers to try to establish a distinctive element in their products that differentiate them from others in the market. One of the best ways to achieve differentiation is through the designation of origin, which integrates the geographical origin of the product in its definition and the tradition and expert process of high-quality manufacturing and the regulation and mechanisms of control over the production (Márquez and Hernández, 2001).

As far as commercial strategies are concerned, food companies use strategies to increase or maintain market share by differentiating their products. The designation of origin helps these companies to better position their products and services in the market. In the past, some restaurants used the commercial word "zero kilometer" (some restaurants offer cuisine under certain fundamental premises like: buying raw materials directly from producers in a radius of less than 100 kilometers and the products purchased are mainly ecological and have the appropriate certification that accredits it, giving it an added value to the gastronomy supply).

The increase of local raw materials and the specific products have two results:

- The beginning and strengthening of traditional cuisine, with the use of local products.
- The consolidation of a type of gastronomic tourism (Armesto and Gomez, 2004).

The place of designation of origin for products or raw materials can become an important source of competitive advantage for business organizations, because this influences consumers when evaluating products or brands (Agrawal and Kamakura, 1999).

According to Regulation (EC) 510/2006 of 20 March 2006, an agricultural product or foodstuff has a denomination of origin when it meets the following requirements:

- Originating in that region.
- The quality or characteristics are essential or exclusive to the geographical environment of natural and human factors.
- The production, processing and preparation are carried out in a defined geographical area.

Yet for a protected geographical indication it is not mandatory that all stages (production, processing and preparation) are carried out in the same geographical area. (In both cases they use the geographical name always associated with both PDO and PGI). There are 186 protected designations of origin in Spain, of which 46% correspond to a single product, wine. The number of protected geographical indications is lower (132) but significant. Andalusia, with 29 D.O.P. (15.6% of the country) and 26 I.G.P. (19.7% of the country), is one of the Spanish regions with the highest number of quality products supported by this certification system. Córdoba has 8 DOP, 4 for olive oil (DOP Baena, DOP Montoro-Adamuz, DOP Priego de Córdoba, Lucena DOP), one wine (DOP Montilla Moriles) and one Iberian ham (DOP Valle de los Pedroches).

In order to get approval, marketing and commercialization of different regions and locations that do not have sufficient financial resources or have other more pressing economic needs use the concept of gastronomic routes as the most important strategy to promote and advertise their areas/ places (Martinez and Jimenez, 2006).

The rising demand for quality food endorsed by DOP and IGP (especially wine and olive oil) makes the supply of gastronomical tourism necessary, allowing tourists to learn about, taste and appreciate typical products of the region, thus increasing their sales.

Spain is predominantly a tourist receiving country. In 2015 it received 68.1 million tourists, 4.9% more than the previous year. Andalusia is one of the 17 autonomous communities that make up the country, and is the fourth region in number of tourists, 9.3 million, representing 13.6% of the total number of tourists. The main tourism sector that visits Spain looks for sun and beach resorts near the coast.

Córdoba is an inland city of the Andalusian region, where the tertiary sector, especially tourism, represents its core business. In 2015 it received nearly a million tourists, especially during the second quarter of the year because of the great number of local festivals (Catas, Cruces, Patios, Feria, Holy Week...) and has a rich, cultural, tangible and intangible heritage recognized by UNESCO (Mosque-Cathedral, the old town or fiesta de los patios); a legacy of the Roman, Muslim, Jewish and Christian cultures. This confluence of cultures has resulted in a pluralistic society with a mixture of traditions and gastronomy. This city is known for being the Latin American capital of

gastronomy. Several gastronomic events take place every year (food festival) which attract more and more tourists.

Córdoba, as a gastronomic emergent destination, is a brand that is promoted in international and domestic markets, yet only a few studies have been published on this topic.

This paper is intended to carry out a geographical analysis of foodstuffs in the province of Córdoba (Spain) and try to study if it really is taking advantage of them or if it is producing a loss of opportunity by not using the synergies of the product family that already have DOP and have created value in each location, based on a survey of the gastronomic tourism in the province.

1. THEORETICAL FRAMEWORK

There are several definitions that link the concept of food and tourism:

According to Poulain (2007), "Food is a central part of the tourist phenomenon because it is a biological necessity for tourists, especially because it is an invaluable gateway to the culture and history of the country visited."

Santos and Leal (2012) indicate that feeding in addition to the provision of the physical and nutritional vital requirements to the survival of the species, as it has the power to translate a wide variety of material and symbolic elements (sexual, social, political, religious, ethical, aesthetic, etc.) which include the production, the handling and consumption of food because, "as a spoken language, the food system contains and carries the culture of those who practice it, it is the guardian of the traditions and the identity of a group." Therefore, tourists are involved with the entire set of a culture which involves the preparation of a dish when they consume a food product from a specific place.

Herrera et al. (2012) associate the gastronomic tourists who plan their travels partially or totally to taste the local cuisine or to develop activities related to gastronomy.

In addition to these definitions about tourism and gastronomy, there are culinary tourism studies which analyze this sector by products or countries, being the literature on the topic quite abundant, especially those analyzing the tourism demand, being fewer the studies about supply and demand. It highlights the research from Australia (NS Robinson and Getz, 2014) to Hong Kong (Au and Law, 2002; McKercher et al, 2008; Cohen and Avieli, 2004; Tse & Crotts, 2005), Japan (Kim & Ellis, 2015) in Turkey (Okumus et al, 2007), Argentina (Schuler, 2003), Peru (Sariego, 2015), Canada (Stewart et al., 2008), Chile (Camarena-Gómez et al, 2014), Croatia (Fox, 2007), Hungary (Medina, 2015) or in Northern Europe such as Finland (Tikkanen, 2007).

There are studies that relate the behavior of tourists about food; Mak et al, (2012) and Chaneya & Ryan (2012) identify the salient factors affecting tourist food consumption (there are five socio-cultural and psychological factors influencing tourist food

consumption: cultural/religious influences, socio-demographic factors, food-related personality traits, exposure effect/past experience, and motivational factors).

On the Iberian Peninsula we find studies that analyze the gastronomy of Portugal (Oliveira, 2007; Forné, 2015) and of all Spanish regions like Valencia (Clemente et al., 2008), Asturias (Feo, 2005), Galicia (Pereiro and Prado, 2005; Ramírez, 2015); Extremadura (Mogollón, et al, 2015; Di Clemente et al, 2013), Andalusia (Vargas, 2008) etc.

For Córdoba, the research conducted by Millan and Hernandez (2015), Lopez-Guzman and Sanchez (2012) and Millan et al. (2014) among others is important. The findings of the studies suggest that gastronomy is one of the main attractors for travelling to Córdoba. The gastronomic tourist has a high educational level and stays overnight more days in the city with a degree of satisfaction for high culinary dishes.

The literature review shows how gastronomic tourism is no longer a tourism product located in certain countries with culinary tradition, such as the case of France. This kind of tourism has become a universal typology and can be developed in any region or country that has a quality tourism product. Domingos & Henriques (2015) corroborate this statement with the study about traditional sweets from the Algarve (Portugal) as a relevant regional tourism product, like a dynamic element of the gastronomy as a vehicle to encourage tourism in the area.

Gastronomic tourism is mainly an experience. A direct experience in the production territory and the sensory and cultural experiences that gastronomy offers are new elements that can be added to the discovery of new and unknown landscapes and territories by tourists. (Medina, 2015).

2. GEOGRAPHICAL AREA OF STUDY.

The tourism sector is still one of the main dynamic elements of the Spanish economy. Although the "number of tourists" is seasonal, it has had an annual growing trend over recent years despite the crisis experienced by Spain. The incomes generated by the tourism sector in Spain in 2014 amounted to 48.9 billion euros according to the Ministry of Industry, Energy and Tourism, of which 35.3 million were made on a net basis in the country. According to the Tourism Satellite Account in Spain, this sector represented almost 12% of national employment and 11% of GDP in 2012. Currently, it employs almost two million people, largely offsetting the trade deficit and it has become an economic engine of the country (Exceltur, 2014), considered by the Government as the main economic hub, and the most important sector for job creation, extending to all branches of the tourism industry (Bojollo et al, 2015).

According to the National Statistics Institute (INE, 2015) and Turespaña (National Tourism Agency responsible for the marketing of Spain) in the month of February 2015 (latest date) the number of international tourists who visited Spain was 3.3 million, 5.3% higher than the previous year. The source markets for emitting tourists are the United Kingdom (640,000 tourists in February), France (537,000) and Germany

(514,000). These tourists chose mostly coastal areas such as the Canary Islands, Catalonia and Andalusia as a destination. There were also 14.4 million overnight stays in hotels (domestic and foreign tourists) were recorded. Length of stay is an average of 2.9 nights each. National demand chooses mainly Andalusia, Madrid, Valencia and Catalonia. In January 2015, the expenditure of international tourists who came to Spain reached 3.4 billion euros, almost 10% more than the previous year. The most interesting facet is the increase in both the number of tourists and the money spent per tourist. They spent more than 1,000 euros per person on the trip and about 114 euros a day. Tourists spend more in the Canary Islands and Madrid (over 1,200 Euros per trip) and come from Northern European countries, in Andalusia, tourists spend 63 Euros in average terms, 53 in Córdoba, and the average stay is 8 and 3.4 days respectively.

According to Exceltur (2014), tourism activity represents 12.5% of the Andalusian GDP and has become the main engine of the regional economy.

Córdoba is located in Southern Spain and is one of the eight provinces that form the Andalusian Community. It currently has 799,402 inhabitants (INE, 2015), with an average per capita income of 13,861 Euros, below the average of its community (Andalusia, 18,300 Euros) and the national average of Spain (22,700 Euros). Its main activity is the tertiary sector, highlighting cultural and rural tourism.

Córdoba has different landscapes along the region that makes this area a unique place (Moral and Orgaz, 2014). It also has high-quality food products endorsed by protected designations of origin (PDO) and Protected Geographical Indication (PGI), elements that act as a catalyst to attract selective tourists that seek a differentiated quality product.

Córdoba (capital) is a city that has a very important, unique and diverse tourist offer. This offer is important for the amount, meaning and great value of the elements that make it up, and unique because it is peculiar without sharing any elements with other cities; and diversified by the different kind of nature, typology and potential offered by the different constituent products. (Consorcio de turismo y observatorio de Córdoba, 2013).

The quality of Córdoba's supply, highly valued in the perception of the agents and tourist factors is an additional feature to take into account. 2015 was a good year for Córdoba's tourism, with more than 900,000 visitors 3.11% more than the previous year and overnight stays exceeded a million and a half (8.54% more than in 2014). In numbers, 61.12% of tourists who visited Córdoba were national and 38.88% international. Córdoba has improved 11 points when compared with the national average of 50.74%. Something interesting has occurred in Córdoba which has not taken place in the rest of Spain, in that, national tourism has increased more than international tourism. The tourist resources offered by Córdoba are mostly based on the historical importance of the city and in a monumental legacy that integrates the most valuable elements of our assets. At a great distance from the rest, in terms of number of visitors, the Mosque-Cathedral is highlighted which received 1,434,345 visitors in 2013. The second is the "Alcázar de los Reyes Cristianos" that has managed to double its number of visitors in the last three years, receiving 428,094 in 2013 (Strategic

Tourism Plan 2015-2019 Córdoba, Industrial Organization School). The three main monuments in Córdoba city receive 80% of visitors.

If we analyze the main focuses of tourist arrivals to the city of Córdoba, there are a large number of catering businesses and hotels that sustain their income from activities related to gastronomy and overnight stays in the city. Córdoba's gastronomy is characterized by its cultural heritage, using local products like raw materials, highlighting dishes such as "*gazpacho*, *rabo de toro* (oxtail), and *flamenquín*." As for the type of catering establishments, there are many taverns in tourist areas in which they serve the "*tapa*" concept which is a small portion of a dish that represents a typical restaurant's brand and tradition: The "Caballo Rojo, El Churrasco, Casa de Pepe la Judería, La Almudaina, or Bodegas Campos" among them.

The four most important touristic places in Córdoba are the following: the Mosque area, the Jewish Quarter that surrounds the mosque; the river area, where the Roman Bridge is located; and the Victoria area which is the most modern zone where tourists can taste avant-garde cuisine. The first three areas offer mainly traditional dishes, but all four areas use local products to prepare their dishes.

3. METHODOLOGY

The method used to gather information consisted of two parts: (a) field work based on visits to different catering establishments (64) in order to find out what is offered in the city of Córdoba. (b) Analysis of the information collected by the Tourism Observatory of Córdoba and the Institute of Statistics of Andalusia in order to predict and model the evolution of gastronomic tourism in Córdoba.

3.1. Analysis of the supply in Córdoba

A survey of the catering supply took place in the surroundings of the four most important tourist attractions of the city in order to analyze the advertising and knowledge of local products from Córdoba and its province; as well as the province's designation of origin and gastronomic routes.

The information was collected through a questionnaire for managers of the catering establishments in the Córdoba Capital.

The design of the questionnaire as a measurement instrument consisted of 20 questions divided into three sections:

- a. **Company Profile:** In this section, we try to determine the information about the catering companies, number of employees, educational level and the establishment's training policy. In total, five questions out of twenty.
- b. **Economic Perception of the gastronomic routes, local products and gastronomic tourism:** In this section we evaluate the range of the products and the way tourists perceive the price of the products as well as the evaluation of the employers or

catering managers on the routes and current situation in Córdoba in terms of tourism. These were five out of 20 questions.

- c. Promotion and marketing of the gastronomic routes and DOP or local products of Córdoba. Through these questions we try to analyze the promotion that the establishment undertakes, if the company advertises through the menu or through another type. Making up ten out of the twenty questions.

The interviews were carried out during the months of March, April and the first week of May in 2015. Data obtained through fieldwork in different areas has served to provide the gastronomic tourism supply in Córdoba. We consulted the majority of the main actors involved, such as managers of the hostelry and hotelier: associations “Hostecor” and “Córdoba Apetece” to complete the research. A sample of the 64 most important restaurants (by number of tourists) of the 320 located in Córdoba, which provides typical culinary products of the city on their menus, according to the opinions of managers in the restaurant industry. After defining the population, we proceeded to design a specific questionnaire for this research with 20 items, which differs from those used by Lopez- Guzman & Sanchez (2012) because they are based on perceptions by the restaurateur on gastronomic tourism in Córdoba. However, in this research employer involvement is discussed in gastronomic tourism and as disclosed or used culinary raw material of DOP in the region.

The fieldwork data sheet to analyze the supply of food tourism in Córdoba is shown in table 1.

Table 1: **data sheet**

	<i>Survey offers</i>
<i>Population</i>	Restaurants
<i>Sample size</i>	64 valid surveys
<i>Sampling error</i>	±4,8 %
<i>Confident level</i>	95% ; p=q=0,5
<i>Date of our fieldwork.</i>	March- April- May 2015

Source: Authors

3.2. Analysis ARIMA models

A time series is defined as a set of data collected sequentially over time. It has the property that neighboring values are correlated. This tendency is called autocorrelation. A time series is said to be stationary if it has a constant mean and variance. Moreover, the autocorrelation is a function of the lag separating the correlated values and called the autocorrelation function (ACF).

A time series is said to be seasonal of order d if a trend exists for the series to exhibit periodic behavior for interval d. Traditional time series methods involve the identification, unscrambling and estimation of the traditional components: secular trend, seasonal component, cyclical component and the irregular movement. For

forecasting purpose,s, they are reintegrated. Such techniques could be quite misleading.

The time series $\{Y_t\}$ is said to follow a multiplicative $(p, d, q) \times (P, D, Q)$ s seasonal ARIMA model if:

$$\phi(B) \Phi(B^s) \nabla^d \nabla_s^D Y_t = \theta(B) \Theta(B^s) a_t$$

Model 1

A stationary time series $\{Y_t\}$ is said to follow an autoregressive moving average model of orders p and q and where $\{a_t\}$ is a sequence of uncorrelated random variables with zero mean and constant variance, called a white noise process, and the ϕ_i 's and θ_j 's as constants;

$$\phi(B) = 1 - \phi_1 B^1 - \phi_2 B^2 - \phi_3 B^3 - \dots - \phi_p B^p \quad \text{equation 1}$$

$$\theta(B) = 1 - \theta_1 B^1 - \theta_2 B^2 - \theta_3 B^3 - \dots - \theta_q B^q \quad \text{equation 2}$$

Where ϕ , θ , Φ , and Θ are polynomials of order p , q , P and Q respectively. That is:

$$\Phi(B^s) = 1 - \phi_1 B^{1s} - \phi_2 B^{2s} - \dots - \phi_p B^{ps} \quad \text{equation 3}$$

$$\Theta(B^s) = 1 - \theta_1 B^{1s} - \theta_2 B^{2s} - \dots - \theta_q B^{qs} \quad \text{equation 4}$$

where the ϕ_i , θ_i , Φ_i and the Θ_i are constants such that the zeroes of the equations (1), (2), (3) and (4) are all outside the unit circle for stationarity or invertibility respectively. Equation (1) and (3) represent the autoregressive operator whereas equation (2) and (4) represent the moving average operator.

Existence of a seasonal nature is often evident from the time plot. Moreover, for a seasonal series the ACF or correlogram exhibits a spike at the seasonal lag. Box and Jenkins (1976) and Madsen (2008) are a few authors that have written extensively on such models. Knowledge of the theoretical properties of the models provides basis for their identification and estimation, asserts Harrison.

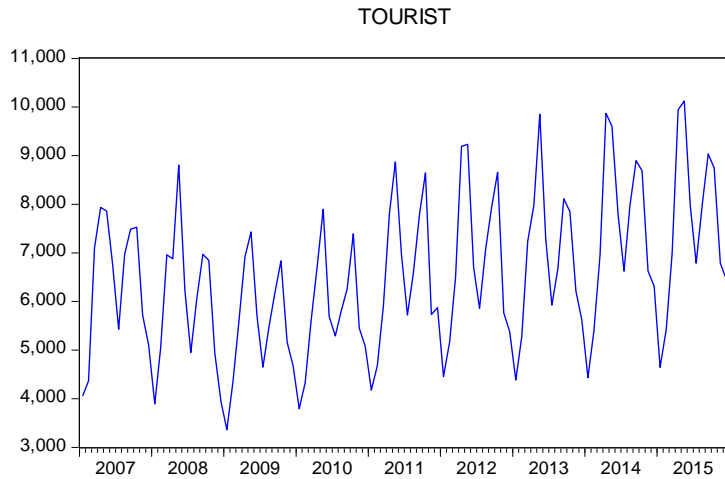
4. RESULTS

The results have been divided into two parts:

4.1. ARIMA's model results. Development and modeling of supply for food tourism Córdoba

With the information obtained from the Tourism Observatory of Córdoba and the Institute of Andalusia we have tried to model the behavior of the evolution of tourism through the Box Jenkins methodology, using multiplicative seasonal ARIMA models. The sample period used was January 2007 to December 2015.

Figure 1: **Development of gastronomic tourism in Córdoba (January 2007- December 2015, number of tourists)**



Source: Authors

As it is shown in Figure 1, the value "number of gastronomic tourists" is seasonal with a slight upward trend. May is the busiest month and December has the lowest demand. Out of all the given years, 2009 was the worst year in the last decade for tourism in Córdoba, while the year 2011, during the economic crisis in Spain, tourism grew slowly, being the revitalizing engine of this city, offsetting job losses of one of its most important sectors which is the jewelry industry.

There are no forecast demand studies for food tourism in the province of Córdoba; this is the novelty of this research. To carry out this research we have obtained monthly information for the last eight years of the tourist who was interested in gastronomic tourism in this province (data from *Observatorio Turístico de Córdoba*). To model these values, the Box Jenkins methodology was used to design a seasonal ARIMA model. A variable is studied as a function of its past values.

$$\Phi(B) \phi(B) (1-B)^d (1-B^s)^D Y_t^\lambda = \Theta(B) \theta(B) a_t$$

The demand for food tourism in Córdoba is a variable with a variance trend, which has been corrected with the Box-Cox transformation $\lambda = 0$ and average and trend cycle have been corrected with a differentiation medium and cyclic.

It is the estimated monthly forecast model that gastronomic tourism demands in Córdoba an ARIMA $(0, 1, 1) (1, 0, 0)_{12}$
 $(1 - 0.945988B^{12}) (1 - B)^1 \text{Tourist}^0 = (1 - 0.677043B)a_t$

Table 2: ARIMA model forecasting gastronomic tourism demand

Dependent Variable: D(lnTOURIST,1)
 Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(12)	0.945988	0.032953	28.70745	0.0000
MA(1)	-0.677043	0.076332	-8.869659	0.0000
R-squared	0.870084	Mean dependent var		0.005327
Adjusted R-squared	0.868687	S.D. dependent var		0.209217
S.E. of regression	0.075814	Akaike info criterion		-2.300237
Sum squared resid	0.534544	Schwarz criterion		-2.246471
Log likelihood	111.2612	Hannan-Quinn criter.		-2.278511

Heteroskedasticity Test: ARCH

F-statistic	0.282395	Prob. F(1,92)	0.5964
Obs*R-squared	0.287651	Prob. Chi-Square(1)	0.5917

Source: Authors

Table 3: Gastronomic Tourism demand forecast 2016

	2015 (Real data)	2016 (estimate data)	Variation
February	16,269	16,487	Δ 1.33%
March	21,012	21,356	Δ 1.63%
April	29,835	31,934	Δ 7.03%
May	30,369	31,578	Δ 3.98%
June	23,967	24,456	Δ 2.04%

Source: Authors

This model predicted a demand of 16,487 gastronomic tourists for February 2016, 21,356 for March, 31,934 tourists in April, 31,578 in May and 24,456 in June. All of them are slightly higher than the previous year, indicating that culinary tourism is a modality boom and the province of Córdoba has a strong attractiveness for its cuisine and products from designation of origin. Being one of the most valued services in the last five years, the average satisfaction had a value of 8 according to the Tourism Observatory of Córdoba.

There is a growing trend of gastronomic tourism since the predictions are all still growing. April had a greater increment (7.03%).

4.2. Survey offers results

We have tried to analyze “the implication of Córdoba’s city cuisine in tourist areas,” with touristic products such as gastronomic routes, products under protected denomination of the province, and local products. A survey was carried out to analyze elements such as the promotion, restaurateurs' knowledge or training.

There are no studies of the gastronomic supply in Córdoba, (Lopez- Guzman & Sánchez, 2012). However, there is plenty of research on the demand for food tourism based on raw materials (oleo-tourism: Millan et al, 2011, wine: Lopez - Guzman et al (2009)

A univariate and bivariate analysis has been carried out with the questionnaires. According to table four, the results are:

1. Number of employees. The restaurant and hospitality companies in Córdoba are characterized as being small companies. 48.7% have 1-4 employees, 42.86% have 5-9 employees and only 8.57% have more than 10 employees.
2. According to level of education. The workers have basic or elementary education (62.85%), being the level of education very low.
3. Investment in workers training. 5.88% indicates that they are continuously being trained, 88.24% occasionally and 5.88% never. This question was linked to the previous question, highlighting the low training level of workers and little worry of the owner to train the workers.
4. State of gastronomic tourism: 68.57% of employers considered the situation to be good, 28.57% regular and 2.86% bad. Those who rank the situation as bad are restaurants whose menus do not include products with PDO and do not consider that quality products will be able to increase their number of customers and conversely, they think that if they were to include PDO products, they would raise their prices.
5. On the establishment's menu: do you name or refer your dish to designation of origin of the province? 26.47% in all dishes, 44.12% in some dishes, 29.41% in none of them.
6. According to the biggest barrier to the development of a gastronomic tourism route in the province, 51.43% of managers indicate that the main trouble is the lack of coordination between different public administrations. They argue this through the

example that the visitor center has been closed for several years upon being built, because there has been no agreement among the local administration, which belongs to one political party, and the central administration which belongs to another political party. This situation is taking place even though it was built as an improvement for tourism in the city. Just 8.57% think it is due to lack of initiative of the local private sector.

7. On the menu it lists the dishes using the origin of the raw material. Most of the restaurants and hotels (82.86%) refer the place of origin of the raw material which is considered as an additional value to the dish and motivates tourists to consume and value it.
8. If a tourist is questioned about places to visit: would you recommend gastronomic routes in the province of Córdoba? 42.86% of respondents answered positively, being this a major promotion, because if the visitor likes the gastronomic dish (due to a good elaboration, presentation or good service), the tourist will be more motivated to know the origin of the raw material, linking the city with the rural area where it is produced or manufactured.
9. 11.4% is local tourism; the rest is national and international tourism, mostly traveling in a group, organized by tour operators.
10. 44.22% of employers affirm they participate actively in decision-making and in the territorial planning of their area and the most common way is through business associations which represents 35.29%.
11. From the bivariate analysis, we obtain the existence of an association between values related to the opinions as to whether it is a good idea to sell the use of products under the PDO or PGI from Córdoba and if it is the norm of the gastronomic tourism in the zone. The statistic $\chi^2 = 11,606$ (p-value= 0.003), results show that if the product is under a designation of origin, the tourist will appreciate the product more and, therefore, the situation of gastronomic tourism will improve in Córdoba.
12. There is a relationship between the variables when referring to the inclusion of the restaurant on a gastronomic route within the province in order to increase the attractiveness of the restaurant and the variable recommends gastronomic routes across Córdoba's province. The statistic $\chi^2 = 11,878$ (p-value = 0.018), if the employer is part of a route or if they want to be part of one, they are more likely to recommend it because they are more conscious of the fact that a gastronomic route attracts more customers by "word of mouth" or creates a loyal tourism sector that may repeat the experience.

As the presented results show, the interviewed managers' commitment with the implementation of a strategic marketing plan for the gastronomic product is not strong enough and must be enhanced. However, the quality and image contribute to the possibility of it becoming a source of income, but in practice only 31.43% of respondents recognize that they put the name of the PDO in their menus.

Results show information about the company profile and workers' training. For example, most SMEs, which are between one and nine workers, do not invest economic resources in training staff even if they know about gastronomic routes and DOP.

Table 4: **Univariate results of the survey near here**

Question		Percentage
Number of Employees	1-4 employees	48.57%
	5-9 employees	42.86%
	more than 10 employees	8.57%
Education Level	Uneducated	17.14%
	Basic studies	45.71%
	Higher education	37.14%
Investment in Training	Permanent training	5.88%
	Occasionally	88.24%
	Never	5.88%
Ways of advertising	Own website	2.94%
	Commercial brochures	2.94%
	Travel agencies	0.00%
	Fairs, exhibitions, etc.	2.94%
	Press releases, media relations, etc.	0.00%
	Other (specify) / Journals / designation of origin / Chamber of Commerce / Social Networks /.....	8.82%
	Two or more ways to promote	82.35%
Current situation of food tourism in the area	Good	68.57%
	Bad	2.86%
	Regular	28.57%
On the establishment's menu: names or refers to designation of origin of the province?	On all dishes	26.47%
	Some dishes	44.12%
	No dishes	29.41%
Have you received some training? Their room and kitchen staff knows the concept of designation of origin and the province of its products	Continuously	25.71%
	Occasionally	51.43%
	Never	22.86%
Do you have a distinct and clear offering of dishes inside your gastronomic supply dedicated to Córdoba?	Yes	71.43%
	No	28.57%
When you have a new dish on your menu, do you take products from the province into account?	Yes	82.86%
	No	17.14%

Question		Percentage
Do you think it is beneficial to sell products under the PDO or PGI in Córdoba?	Yes No	82.86% 17.14%
What do you think of products' prices under PDO in the province of Córdoba?	High Medium Low	58.82% 41.18% 0.00%
Regarding the ease of purchasing products protected under DOP	I find them easily I have trouble finding a good supplier or delivery service. I have no ease of purchase	79.41% 17.65% 2.94%
If a tourist asks for places to visit: does the establishment recommend doing a gastronomic route in the province of Córdoba?	Yes Sometimes Never	42.86% 37.14% 20.00%
Where is the origin of most of their customers?	Foreign National Local Either foreign or national	22.86% 17.14% 11.43% 48.57%
What is the biggest barrier to the development of the area in the field of gastronomic tourism route in the province?	Uncoordinated actions between different public administrations. Disinterest of public bodies Lack of private local initiative Other	51.43% 40.00% 8.57% 0.00%
Do you participate actively in decision-making and territorial planning in your area?	Yes. How? Business associations Cooperatives Commonwealth CIT Town Hall Rural Development Group No	44.22% 35.29% 5.88% 2.94% 0.00% 0.00% 0.00% 55.88%
How do you assess the attractiveness of local products to attract tourists?	High Medium Low	65.71% 31.43% 2.86%
How would you assess the inclusion of your restaurant on a gastronomic tour of the province to attract tourism to the establishment?	Very positive Positive Indifferent	31.43% 60.00% 8.57%

Source: Authors

Entrepreneurs generally favorably regard Gastronomic Routes for their businesses and, in fact, they consider them very positive and include or link their facilities on gastronomic routes of the province, although in price, products are in the range of above average.

Promotion or marketing of the gastronomic routes in catering establishments is performed: directly via staff or by the menu. Marketing via staff is recommended by 42.86% of respondents. Marketing via menu shows that most entrepreneurs do not include designation of origin of products in their menus, showing a lack of direct marketing by catering establishments.

CONCLUSIONS

From the results we can say that gastronomic tourism in Córdoba has great potential because it shows a growing trend based on the results obtained in the ARIMA model, in part because of the existing cuisine, which can be enjoyed in taverns, restaurants and hotels but also as it can generate new jobs and create wealth in the city.

Regarding the research referring to the type of supply, it has been observed that the operator or manager of catering establishments knows the gastronomic routes of Córdoba's province, designation of origin and products associated with them that give name to PDO. They are aware that it is a good way to promote their establishment. However, they do not employ resources to train their workers; they believe that products that have designation of origin have a backed quality and they are a good way to promote the menus of their establishments. However, they do not expressly market such products so this is a loss of an opportunity to increase their business and the local products in the province of Córdoba.

Entrepreneurs generally favorably regard Gastronomic Routes for their businesses and, in fact, they consider including or linking their facilities to gastronomic routes of the province as something positive, although in price, products are in the high range on average.

Gastronomic tourism as a new segment may favor Córdoba by putting less pressure on tourism, while creating greater sustainability, greater territorial integration and greater profits in the territory, through food commodities and dishes, achieving the same results according to Gomez et al. (2016).

Gastronomic tourism in the city of Córdoba is a booming segment that complements the distinctive architectural cultural tourism in this city (Corroborating studies in other provinces as stated by Mazon et al. (2014) to Alicante and Mogollon et al (2015) for Caceres). The varied cuisine of the city and the quality of the raw materials produced makes the final product (gourmet dish) very appreciated by the tourists who savor it. The strategies that unite synergies between restaurants (final product) and the province (raw materials) can be achieved through the union of synergies, networks of gastronomic routes and by giving value to these products; a vision that is shared by a part of the entrepreneurs of Córdoba. The support and coordination of all stakeholders

is necessary: the business side and the local and regional authorities that have an important position in Córdoba.

REFERENCES

- Agrawal, J. & Kamakura, W.A. (1999), "Country of origin: A competitive advantage?", *International Journal of Research in Marketing*, 16(4), pp. 255-267. doi: 10.1080/09652540210125297
- Arnesto, X.A. & Gómez, B. (2004), "Productos agroalimentarios de calidad, turismo y desarrollo local: el caso del Priorat", *Cuadernos Geográficos*, 34, pp. 83-94.
- Au, N. & Law, R. (2002), "Categorical classification of tourism dining", *Annals of Tourism Research*, 29 (3), pp. 819-833. doi: 10.1016/S0160-7383(01)00078-0
- Barrera, E. & Bringas, O. (2008), Las Rutas Alimentarias: Una arquitectura turística basada en la identidad de los alimentos Scienze Gastronomiche - Università degli studi di Scienze Gastronomiche N 8 - Mayo 2008.
- Bojollo, M., Pérez, J. & Muñoz, G. (2015), "Analisis Of Profile And Motivations Of Foreign Cultural Tourist That Visit Córdoba City (Spain)", *International Journal of Scientific Management and Tourism*, 3, pp. 127-148.
- Box, G.E.P. and Jenkins, G.M. (1970), "Time series analysis, forecasting and control". ed: San Francisco, CA: Holden Day. doi: 10.1002/9781118619193
- Camarena-Gómez, D.M., Robles-Baldenegro, M.E., Velarde-Mendivil, A.T. & Erquizio-Espinal, A. (2014), "Los alimentos tradicionales como alternativa de turismo rural: el caso de Ures, Sonora", *Agroproductividad*, 7(4), pp. 42-48.
- Chaneya, S. & Ryan, C. (2012), "Analyzing the evolution of Singapore's World Gourmet Summit: An example of gastronomic tourism", *International Journal of Hospitality Management*, 31, pp. 309-318. doi: 10.1016/j.ijhm.2011.04.002
- Clemente, J.S., Roig, B., Valencia, S., Rabadán, M.T. & Martínez, C. (2008), "Actitud hacia la gastronomía local de los turistas: dimensiones y segmentación de mercado", *Pasos, Revista de Turismo y Patrimonio Cultural*, 6 (2), pp. 189-198. doi:10.1016/j.annals.2004.02.003
- Cohen, E. & Avieli, N. (2004), "Food in tourism: attraction and impediment", *Annals of Tourism Research*, 31 (4), pp. 755-778.
- Consorcio del Turismo y el Observatorio Turístico de Córdoba (2013). Informe Anual 2013.
- Di Clemente, E., Hernández, J.M. & López-Guzmán, T. (2013), "La gastronomía como patrimonio cultural y motor del desarrollo turístico. Un análisis DAFO para Extremadura", *Monográfico*, 9, pp. 817-833.
- Domingos, S. & Henriques, C. (2015), "Património Gastronómico E Sua Valorização Pelas Entidades Público-Privadas - O Caso Da Doçaria Da Região Do Algarve", *International Journal of Scientific Management and Tourism*, 3, pp. 213-232.
- Escuela de Organización Industrial (2014), "Plan estratégico de Turismo de Córdoba 2015-2019", Ayuntamiento de Córdoba.
- Exceltur (2014), "Valoración empresarial del verano 2014", *Alianza para la estrategia Turística. Informe Perspectivas empresariales*. Vol. 50.
- Feo, F. (2005), Turismo gastronómico en Asturias, *Cuadernos de Turismo*, 15, pp. 77-96.
- Forné, F.F. (2015), "El turismo gastronómico: autenticitat i desenvolupament local en zones rurals", *Documents d'Anàlisi Geogràfica*, 61(2), pp. 289-304. <http://dx.doi.org/10.5565/rev/dag.218>.
- Fox, R. (2007), "Reinventing the gastronomic identity of Croatian tourist destinations", *International Journal of Hospitality Management*, 26, pp. 546-559. doi: 10.1016/j.ijhm.2006.03.001.
- Gomez, M., Medina, F. & Puyuelo, J.M. (2016), "Turismo y enogastronomía en tiempos de crisis: el caso de Aragón (España)", *PASOS. Revista de Turismo y Patrimonio Cultural*, 14(2), pp. 447-457. <http://dx.doi.org/10.1787/9789264171923-en>.
- Herrera, C., Herranz, J. & Arilla, J. (2012), How can we define gastronomic tourism? In UNWTO (2012) Global report on food tourism, Madrid, pp. 6-9, [Web log post]. Retrieved march 18, 2015, from http://dtxtx4w60xqpw.cloudfront.net/sites/all/files/pdf/global_report_on_food_tourism.pdf
- INE (Instituto Nacional de Estadística) (2015). Encuesta de Ocupación hotelera. Datos por puntos turísticos. Demanda. Consultado el 16 de Octubre de 2014. Disponible en: <http://www.ine.es/jaxi/menu.do?type=pcaxis&path=%2Ft11%20Fe162eoh&file=inebase>

- Kim, S. & Ellis, A. (2015), "Noodle production and consumption: from agriculture to food tourism in Japan", *Tourism Geographies*, 17(1), pp. 151-167.
<http://dx.doi.org/10.1080/14616688.2014.978812>
- Lopez- Guzman, T., Sánchez, S. & Rodriguez, J. (2009), "Wine routes in Spain: a case study", *Tourism: an International Interdisciplinary Journal*, 57 (4), pp. 421-434.
- Lopez- Guzman, T. & Sánchez, S. (2012), "La gastronomía como motivación para viajar. Un estudio sobre el turismo culinario en Córdoba, Pasos", *Revista de turismo y patrimonio cultural*, 10(5), pp. 575-584.
- Madsen, H. (2008), "Time Series Analysis", Chapman & Hall/CRC, London.
- Mak, A.H.N., Lumbers, M., Eves, A. & Chang, R.C.Y. (2012), "Factors influencing tourist food consumption", *International Journal of Hospitality Management*, 1(3), pp. 928-936.
- Márquez, A.M. & Hernández, M.J. (2001), "Cooperación y sociedades cooperativas: el caso de la Denominación de Origen Sierra Mágina", *Revista de Estudios Cooperativos, Revesco*, 74, pp. 123-149.
- Martínez, M.D.P. & Jiménez, A.I. (2006), "La potenciación del origen en las estrategias de marketing de productos agroalimentarios: Objetivos, situación e implicaciones", *Boletín económico del ICE*, 2880, pp. 13-29.
- Mazón, T., Colmenares, M. & Hurtado, J.A. (2014), "El turismo gastronómico en la Península Ibérica: el caso de Benidorm, España", *Iberoforum*, 18, pp. 73-99.
- Mckercher, B., Okumus, F. & Okumus, B. (2008), "Food Tourism as a viable market segment: it's all how you cook the numbers", *Journal of travel and Tourism Marketing*, 25(2), pp. 137-148. doi: 10.1080/10548400802402404. 137
- Medina, F.X. (2015), "Turismo Y Cultura En Denominaciones De Origen Enogastronómicas: El Caso De La Región De Tokaj-Hegyalja (Hungria)", *International Journal of Scientific Management and Tourism*, 3, pp. 167-178.
- Millán, G., Gutiérrez, E.M. & Morales, E. (2011), "Análisis de la oferta y la demanda de oleoturismo en el sur de España: un estudio de caso", *Cuadernos de Desarrollo Rural*, 8(67), pp. 181-202.
- Millan, G. & Hernández, R. (2015), "Análisis de la oferta en restauración de la ciudad de Córdoba y su implicación con las rutas gastronómicas de la provincia", *TURYDES, Revista de investigación en turismo y desarrollo Local*, 8 (18), pp. 1-13.
- Millan, G., Morales, E. & Pérez, L. (2014), "Turismo gastronómico, denominaciones de origen y desarrollo rural en Andalucía: situación actual", *Boletín de la Asociación de Geógrafos españoles (BAGE)*, 65, pp. 113-137.
- Mogollón, J.M.H., Di Clemente, E. & Guzmán, T. (2015), "El turismo gastronómico como experiencia cultural. El caso práctico de la ciudad de Cáceres (España)", *Boletín de la Asociación de Geógrafos Españoles*, (68), pp.407-428.
- Moral, S. & Orgaz, F. (2014), "Las tipologías de Turismo en Córdoba (España): Una revisión de la literatura científica", *Gran Tour: Revista de Investigaciones Turísticas*, 9, pp. 112-133.
- NS Robinson, R. & Getz, D. (2014), "Profiling potential food tourists: an Australian study", *British Food Journal*, 116(4), pp. 690-706. <http://dx.doi.org/10.1108/BFJ-02-2012-0030>
- Okumus, B., Okumus, F.Y., Mckercher, B. (2007), "Incorporating local and international cuisines in the marketing of tourism destinations: the cases of Hong Kong and Turkey", *Tourism Management*, 28, pp. 253-261. doi: 10.1016/j.tourman.2005.12.020
- Oliverira, S. (2007), "La importancia de la gastronomía en el turismo. Un ejemplo de Mealhada", *Estudios y Perspectivas en Turismo*, 16 (3), pp. 261-282.
- Pereiro, X. & Prado Conde (2005), "Turismo e oferta gastronómica na comarca de Ulloz (Galiza): Análise de uma experiência de desenvolvimento local", *Pasos, Revista de Turismo y Patrimonio Cultural*, 3 (1), pp. 109-123.
- Poulain, J.-P. (2007), Los patrimonios gastronómicos y sus valorizaciones turísticas, en Tresserras, J. y Medina, F. X. (eds.) *Patrimonio gastronómico y turismo cultural en el Mediterráneo*. Barcelona, Ibertur. <http://dx.doi.org/10.1590/S0104-71832003000200006>
- Ramírez, L. (2015), "Gallo celta: David Sueiro emprende una batalla genética, alimenticia y turística para preservar una de las joyas del patrimonio gastronómico de Galicia", *Origen: la revista del sabor rural*, (81), pp. 16-18.
- Santos, K. & Leal, R. (2012), "Cooperativa de doces Santa Salu: a tradição gerando renda", in: I SEMINÁRIO SOBRE ALIMENTOS E MANIFESTAÇÕES CULTURAIS TRADICIONAIS- Universidade Federal de Sergipe, São Cristóvão, SE – 21 a 23 de maio de 2012, pp. 1-10.
- Sariego, I. (2015), "Las rutas del pisco como elementos turísticos representativos de la cultura Peruana", *International Journal of Scientific Management and Tourism*, 1, pp. 167-192.

- Schlüter, R.G. (2003), *Turismo y patrimonio gastronómico. Una perspectiva*, Centro de Investigaciones y Estudios Turísticos, Buenos Aires.
- Schlüter, R.G. & Thiel, D. (2008), “Gastronomía y turismo en Argentina Polo gastronómico Tomas Jofré”, *Pasos Revista de turismo y patrimonio cultural*, 6(2), pp. 249-268.
- Stewart, J.X., Bramble, L. & Zirald, D. (2008), “Key challenges in wine and culinary tourism with practical recommendations”, *International Journal of Contemporary Hospitality Management*, 20 (3), pp. 302-312.
- Tikkanem, I. (2007), “Maslow’s hierarchy and food tourist in Finland: five cases”, *British Food Journal*, 109 (9), pp. 721-734. <http://dx.doi.org/10.1108/00070700710780698>
- Tse, P. & Crotts, J.C. (2005), “Antecedents of novelty seeking: International visitors propensity to experiment across Hong Kong’s culinary traditions”, *Tourism Management*, 26, pp. 965-968. doi:10.1016/j.tourman.2004.07.002
- Vargas, A. (coord.) (2008), “Turismo e industria vinícola: perspectivas y propuestas para su desarrollo en la provincia de Huelva”, Huelva, Servicio de Publicaciones de la Universidad de Huelva.

Genoveva Millán Vázquez de la Torre, PhD, Professor
Universidad Loyola Andalucía
Department of Management and Quantitative Methods.
Calle del Escritor Castilla Aguayo N°4, 14004, Córdoba, Spain.
Phone: +34 957222100
E-mail: gmillan@uloyola.es

Ricardo Hernández Rojas, PhD, Assistant Professor
Universidad de Córdoba
Department of Financial Economics
Avd. Medina Azahara, 5 14071 Córdoba, Spain
Phone: +34 957 21 88 46
E-mail: et2heror@uco.es

Virginia Navajas Romero, PhD, Assistant Professor
Universidad de Córdoba
Department of Statistics, Econometrics, Operations Research, Business Organization
and Applied Economics
Avd. Medina Azahara, 5 14071 Córdoba, Spain
Phone: +34 957 21 25 25
E-mail: vnavajas@uco.es

Please cite this article as: Millán Vázquez de la Torre, G., Hernandez Rojas, R., Navajas Romero, V. (2016), The study of gastronomic tourism in Córdoba and the association of the cuisine. An econometric analysis, *Tourism and Hospitality Management*, Vol. 22, No. 2, pp. 173-191, <https://doi.org/10.20867/thm.22.2.7>



Creative Commons Attribution – Non Commercial – Share Alike 4.0 International