

**EXPLORING ATTENDANCE AT A POPULAR CULTURAL  
EVENT: THE CASE OF HOLY WEEK IN PALENCIA**

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## 1. INTRODUCTION

Heritage economics is gaining ground as a specific area of inquiry within cultural economics (Báez and Herrero 2012). The particular nature and features of the goods that form part of cultural heritage, together with the conditions governing their consumption and provision (Herrero 2001), pose a specific challenge to cultural economists.

As Benhamou (2012) points out, there are several relevant specificities in the case of heritage: *i*) due to its particular nature, cultural heritage comprises unique and non-reproducible goods, with failure to preserve these constituting an irreversible loss; *ii*) cultural heritage artefacts tend to be public goods, such that the market allocates them no correct valuation, particularly when, together with their economic value, they have a value associated to their cultural and symbolic significance; *iii*) heritage goods generate public and private externalities, that can be called cultural spill-over (Brida et al. 2012), in terms of tourism, knowledge, economic activity and employment or welfare of the local community.

All of these features complicate the notion of value with regard to heritage (Klamer 1996). This does not mean that their individual and social value cannot be estimated. Indeed a wide theoretical corpus is being developed in an effort to gauge public preferences through non-market valuation techniques (see Navrud and Ready 2002), with interesting applications to the valuation and viability of heritage goods and policies.

From the macroeconomic standpoint, cultural heritage constitutes a resource which is involved in a society's production function and is able to generate economic flows and possibilities for growth in an area (Herrero 2008). Estimating so-called cultural capital (Throsby 1999) is one of the main challenges in the field, not only as regards heritage economic impact studies, but also with regard to modelling its effects as a productive factor in local and regional economic development (Bille and Schulze 2006). Cultural tourism is clearly the most direct means of marketing and consuming cultural goods and services, yet it is not the only factor in the creation of wealth. Developing so-called creative industries around heritage and the valorisation thereof generates economic activity and employment (Palma et al. 2013)

Finally, the spread of cultural consumption in recent years in any of its many fields and expressions, coupled with the political appeal of being involved in supplying it, has led to a growth in the number of associated institutions and the provision of new equipment and infrastructure, as well as public policy action concerning heritage. All of this necessitates analysis and evaluation of cultural consumption (Barrio et al. 2009). This also paves the way to public and private provision and management of cultural heritage that demands comparative analysis.

Heritage economics is thus emerging as a branch in its own right in the general area of cultural economics, and has given rise to interesting systemic publications (Hutter and Rizzo 1997; Herrero 2001, 2008; Ginsburg and Throsby 2006; Peacock and Rizzo 2008; Benhamou 2012; Rizzo and Mignosa 2013) as well as numerous research articles in specialised journals. Prominent amongst the most commonly explored aspects of heritage economics are all the issues related to the value and valuation of heritage goods

applying non-market techniques<sup>1</sup>, as well as public intervention and cultural heritage policy (Benhamou 1996; Prieto-Rodríguez and Fernández-Blanco 2006; Dalle Nogare e Galizzi 2011, amongst others).

Other topics addressed in heritage economics deal with economic impact studies (Bowitz and Ibenholt 2009; Plaza 2006; Murillo et al. 2008), heritage tourism (see Bonet 2013; Timothy and Boyd 2002; Richards 1996), as well as microeconomic or management aspects of heritage goods (for example, Noonan and Krupka 2010; Camarero et al. 2011; Sable and Kling 2001; Guccio et al. 2014).

### ***From tangible cultural heritage to intangible cultural heritage***

In recent years, the notion of heritage has widened and spread in a two-fold manner (Barrio et al. 2012). The number of tangible objects deemed to be cultural heritage has increased, and now stretches beyond merely considering individual artefacts to view said elements in their context, thus adopting a global approach (Vecco 2010). In this vein, not only monuments, buildings or archaeological sites but also gardens, industrial heritage, rural heritage or urban ensembles to name but a few currently form part of the broad landscape of heritage. In addition, intangible elements which reflect the idiosyncrasy of a group, the recognition of an identity or the value of a tradition have been added to the heritage list (Vidal 2008).

In 2003, UNESCO adopted the Convention for the Safeguarding of Intangible Cultural Heritage which defines intangible cultural heritage (ICH) as the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity.

The intangible cultural heritage is manifested inter alia in the following domains:

- a) oral traditions and expressions, including language as a vehicle of the intangible cultural heritage;
- b) performing arts;
- c) social practices, rituals and festive events;
- d) knowledge and practices concerning nature and the universe;
- e) traditional craftsmanship.

Therefore, this new category includes elements like knowledge, skills, artistic expression, performing arts, music, etc., passed from one generation to others (Cominelli 2012). ICH belongs to the community and is held by its members. It reveals

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<sup>1</sup> The Contingent Valuation Method, the joint Analysis Method, the Travel Cost Method, and the Hedonic Prices Method. Amongst the many applications to cultural heritage, we may highlight the works of Bedate et al. (2004); Poor and Smith (2004); Alberini and Longo (2006); Santagata and Signorello (2000); Navraud and Ready (2002); Sanz et al. (2003); Bedate et al. (2009); Báez et al. (2009).

a shift from ‘static’ and ‘monumental’ to ‘dynamic’ and ‘living’ understandings of heritage (Alivizatou 2008).

The category of *social practices, rituals and festive events* is one of the largest and most dynamic categories in intangible cultural heritage, and ranges from the sacred to the profane and from the commonplace to the extraordinary (WTO 2013). We thus find a large and varying number of artefacts and events, offering different scales of attraction and participation and embracing a range of reasons for attending. This proves particularly true in the case of elements of a religious and spiritual character and which very often demand separate investigation.

### ***Subject matter***

Taking into account the above, the main goal of the present work is to explore which factors determine participation intensity in a popular cultural event, in this instance Holy Week, measured through the number processions attended.

Our case study is the celebration of Holy Week in Palencia, a city situated in the heart of Castile, and an event declared to be of International Tourist Interest by the regional government in November 2012 thanks to the quality of its sculptures, the value of its traditions, and the importance of its acts.

The study draws a distinction between three types of participants, each of whom are explored independently: members of the brotherhoods who constitute the active part of celebrating the event, the local population or residents, and visitors from outside the city or tourists. To achieve this, an econometric model for count data will be developed, and the results from a survey conducted amongst participants during the Holy Week celebration in 2012 will be used.

The variables included in the model aim to reflect the various dimensions which might determine participation in a topic such as this, and embrace not only sociodemographic characteristics like age, education, or income but also religious (beliefs), social (group participation), educational (attending with children) or tourist aspects (visiting other sites).

The work contributes to the literature in three ways. Firstly, it explores a complex cultural object, which belongs to immaterial cultural heritage but which is linked to other aspects of heritage and the arts, with an underlying religious component and entailing an important social dimension, the only work known to the authors being the study by Palma et al. (2013). Secondly, the participation of three types of attendees is explored: members of the brotherhoods, or experienced attendees; local people, immersed in the tradition of the event; and visitors, driven by the event’s cultural dimension in the widest sense of the term. The complexity of the subject matter coupled with the analysis of three kinds of participants allows us, thirdly, to progress further in the theoretical and applied development of the factors which influence participation and demand for culture.

The article is structured in five sections. Together with this introduction, focusing on the economics of cultural heritage, the second section analyses the celebration of Holy

Week from an economic standpoint. Section three reviews the literature addressing studies into demand for and participation in the arts. Section four presents the methodology, and section five offers the findings to come out of the research. The paper closes by looking at the main conclusions to emerge.

## **2. THE CELEBRATION OF HOLY WEEK: A COMPLEX CULTURAL GOOD**

Holy Week is the annual Christian commemoration of the Passion, Death and Resurrection of Christ. It is an event with a long-running tradition which, in most towns and cities in Spain, is expressed through processions and other religious acts that make it a social, cultural, tourist and economic event of particular importance, and one which is deeply rooted amongst inhabitants, who take part *en masse* and which attracts numerous visitors from many and far flung places.

It is, in sum, a popular cultural event, which is essentially religious in nature, but which also encompasses a cultural and artistic dimension, a social identity and a tourist appeal that make it a complex good and one of tremendous interest for study.

Holy Week comprises four key elements (Lafuente 2012):

- Processions: the religious passing of the floats, carried by members of the brotherhoods. The aim of the processions is to accompany the holy images in prayer, sacrifice and austerity.
- Floats (*Pasos*): sculptural representation of episodes in the Passion and Death of Christ.
- Liturgical acts: prayers, recreations, meetings, chants of different types during the processions.
- Brotherhoods: associations who come together through charity or a feeling of togetherness and for a religious purpose. Each brotherhood brings different *pasos* to the celebration of the processions.

Holy Week is clearly an element of cultural heritage thanks to its historical and artistic value, which over the centuries has become reflected in traditional, idiosyncratic and hugely popular and participatory celebrations in society (Lafuente 2012). Yet, these celebrations also provide an opportunity to interrelate between movable and transportable heritage –very often ephemeral– of which the processions and acts are made up, and the immovable, architectural and urban heritage which acts as the backdrop and platform for the dramatic representations staged over these days.

Yet, that is by no means all, since Holy Week is a tradition which draws principally on participants and public, in other words the brotherhoods and all those who, from the street, attend a century old celebration, but one which returns each year. Moreover, Holy Week celebration comprises a wide range of acts and traditions that, combined, make up intangible cultural heritage.

As a result, celebrating a cultural event such as this forms part of material as well as immaterial heritage, and is both dynamic and static, reflected in Figure 1.

Figure 1. Classification of Holy Week heritage goods in Palencia

		STATIC		DYNAMIC	
MATERIAL HERITAGE	ARTISTIC	Immovable goods: monuments and urban spaces		Movable goods: Floats and items related to the procession	
	HUMAN	Visiting public	Local public	Brotherhoods	
IMMATERIAL HERITAGE	ARTISTIC	Liturgical acts	Processional acts	Processions	
	HUMAN	Rites and ceremonies			

What is more, popular celebrations such as this reach beyond the notion of heritage, and are difficult to classify within heritage goods since, in addition to being historical and cultural heritage, they are linked to the performing arts, music, temporary cultural events and even the creative industries, on which they feed for their celebration (Palma et al. 2013).

Summing up, we can point to four features of Holy Week as an economic good, which make the study thereof both a challenge and an opportunity for cultural economists:

- Firstly, it is held cyclically and regularly, bringing it close to the definition of festival described in the literature (Rolfe 1992; Devesa 2006).
- Secondly, it is a major cultural expression of the social and tourist life of a town and entails a high degree of social involvement; on the one hand that of the main actors, namely the members of brotherhoods who take part in the processions, and on the other that of the public who, for a variety of reasons, attend the processions, and finally that of the tourists who travel to take part in and enjoy them.
- It is a complex cultural good, since it is an example of intangible cultural heritage (a celebration bringing together values, traditions, beliefs, music, visible scenery, etc.) but which also evidences features of tangible cultural heritage (sculptures, dress, historical buildings, etc.). This element of cultural heritage also involves various creative industries which need to supply those organising and taking part in the processions and events with an array of goods (ranging from flowers to material).
- It is an experiential element of cultural heritage, particularly for those who play an active part in the event (the brotherhoods), but also for many of the local spectators and visitors due to its significance and involvement.

As pointed out earlier, our interest focuses on exploring which factors determine participation intensity in this event, such that we now review the literature addressing demand and cultural participation studies.

### 3. CULTURAL DEMAND AND PARTICIPATION STUDIES

Exploring determinants of cultural demand and arts participation has been a key area of research in cultural economics (Levy-Garboua and Montmarquette 2002; Seaman 2006). Numerous theoretical and practical studies have appeared in recent years analysing an array of variables, ranging from pricing to motivation.

Studies into demand for cultural goods initially focused on economic variables, namely, the price of the good, the price of related commodities, and individuals' income, on many occasions subtracting the corresponding elasticity coefficients<sup>2</sup>. Yet, given the importance of individual preferences and other qualitative variables in the case of cultural goods, the aforementioned monetary variables fail to adequately reflect the set of determinants available as consumer options (Seaman 2006). In consequence, studies into demand have continued to develop from the theoretical viewpoint and new variables have been incorporated into empirical analyses, thereby taking such studies towards the realm of cultural consumption or cultural participation.

Related to this, we might point to including the role of aesthetic aspects as well as features concerning product quality as explanatory factors for demand (Abbé-Decarroux 1994; Ginsburg and Weyers 1999; Throsby 1990). Consumer attitude to risk is also taken into account (Abbé-Decarroux and Grin 1992) as is the importance of critical reviews (Urrutiaguer 2002).

The role of (formal and informal) education is also highlighted in addition to learning in studies into demand for culture and arts. Studies have also emerged dealing with early exposure to the arts (Cameron 1999; Dobson and West 1997; Gray 1998), provision of human capital (Ateca-Amestoy 2008; Fernández-Blanco and Prieto-Rodríguez 2004), or learning derived from cultural experience itself ("learning by consuming") (Levy-Garboua and Montmarquette 1996).

Supply has also been included in studies into cultural demand through variables such as the capacity of the theatre or auditorium, the number of performances available each season or the number of screens in the case of cinema, and even the particular attributes or features of the cultural good in question (Cameron 1999; Corning and Levy 2002; Willis and Snowball 2009). Other common factors in demand studies or cultural consumption include sociodemographic variables as well as variables related to location, given the importance of the urban environment in cultural consumption or attendance at cultural events (Danielsen 2008; Ringstad and Løyland 2006).

Empirical studies into demand for or participation in the arts and culture have been carried out using aggregate temporal series, transversal surveys on arts company audiences, and individual data from surveys conducted with specific groups of spectators or the public at large. The econometric specifications of the demand function for a good or cultural facility will depend as much on the goals of the study as on the variables –and their specifications– included in the model.

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<sup>2</sup> See the seminal work of Gapinski (1984, 1986), Lange and Luksetich (1984) and Bonato et al. (1990).

### *The demand for cultural heritage*

Most studies addressing cultural demand and participation focus on the performing arts and cinema (see the review by Seaman 2006), studies into historical heritage or cultural events and festivals proving less commonplace.

In the case of heritage, certain studies can be found for museums (see Kracman 1996; Gray 1998; Fernández-Blanco and Prieto-Rodríguez 2004; Jaffry and Apostolakis 2011, amongst others), as well as for heritage visits (Ateca-Amestoy 2013). For the specific case of festivals and cultural events, studies into demand remain scarce, there being no studies of a general nature to provide a framework, but rather specific studies or analyses focusing on one or a number of festivals, conducted through surveys amongst attendees. Prominent are the works of Schimmelpfennig (1997), Willis and Snowball (2009) and Devesa et al. (2009). Finally, for the case of a popular celebration such as Holy Week, we must cite the work of de Palma et al. (2013).

The lack of research in the field in question, merged with the particular features of cultural heritage, make scholarly inquiry into the area both necessary and appealing.

In this sense, we may highlight some of the consumption elements of cultural heritage that should, in one way or another, be reflected in the analysis model:

- Heritage goods may be addictive in nature, given the accumulation of knowledge and experience (Herrero 2001).
- No one particular good is required in heritage demand but rather the components of value it includes or the services that may be derived from it, and which range from aesthetic excitement to the cognitive or educational value, and embrace the social value as a sign of identity (Greffé 1990). This proves particularly important in our case study, Holy Week, which merges elements of tangible cultural heritage (movable and immovable) and immaterial cultural heritage.
- Together with individual demand, cultural heritage evidences collective demand, which proves difficult to measure and to value, given its social nature and importance.
- Heritage is a multi-dimensional and multi-attribute concept (Mazzanti 2002) that provides different users with different services, such that there are varying individual as well as group motives to demand these goods and services.

In sum, different aspects of cultural heritage can appeal to different types of people (McDonald 2011). Factors that lead people to be interested in heritage are not well understood (Prentice 1993), hence the need to gain further insights into participation in cultural goods of this type.

Interest in analysing participation in cultural popular events (or cultural intangible heritage) is thus based on three aspects: firstly, the cultural, social and economic dynamism of this kind of cultural product. Secondly, the fact that participation in this 'product' may differ from other cultural goods; and thirdly, since the event is public and consumption is likely to be collective, this is where variables related to the public's reasons for attending may play a key role. Event or festival audiences are not usually mere passive consumers of the art form, but they actively use such events to participate in the community, engaging with other community members and displaying a shared

interest (Fitjar et al. 2013), thus reflecting the social nature of the arts (Snowball and Webb 2008).

## 4. METHODOLOGY

### 4.1 Data collection

In order to achieve the pursued goals, three different types of surveys were devised, all aimed at gauging social and economic traits, as well as any other aspects of interest displayed by the various types of attendee. Field work was conducted during Lent and Holy Week in 2012.

Firstly, and as the “producers” of Holy Week, the brotherhoods were surveyed. The survey was given to the various brotherhoods, who were asked to respond during the last days of Holy Week so as to ensure reliable participation data were obtained. Almost all the surveys were answered on Easter Sunday at the premises of the various brotherhoods, with a total of 260 being obtained.

Secondly, to study the general public during Holy Week –local residents and visitors, who represent the main demand for the celebration–, 508 surveys were obtained (223 from local residents and 285 from visitors) at the principal tourist and cultural information points around Palencia, situated at various locations in the city. Surveys aimed at visitors were also conducted at different hotels who lent their support to the study.

### 4.2 Variables

As pointed out, the goal of the paper is to explore which factors influence participation in Holy Week in Palencia, distinguishing between three types of participants: brotherhoods (model 1), local residents (model 2), and visitors (model 3). The *dependent variable* for each of the three models is, therefore, the number of processions attended, which reflects demand intensity.

The *independent variables* aim to show the main aspects highlighted in the literature, adapted to the case study and applied to the three types of attendees being analysed. These variables –which differ in each of the models– seek to reflect the various dimensions and facets of the subject matter and, in sum, its complexity. In this sense, we may distinguish seven main groups of variables:

- **Preferences.** These are variables related to participants’ tastes. The first addresses the cultural importance attendees attach to the Holy Week processions in Palencia (*imp*) and is common to all the models. The second deals with the reason for remaining in the city in the case of local attendees, or the reason for making the trip in the case of visitors, reflecting in sum this event’s importance in consumption decisions. It is divided into three variables: main motive (*main\_mot*); secondary motive (*secon\_mot*); did not influence the decision (*no\_influ*).

- **Religious beliefs.** This vector covers two variables related to the religious dimension of the event: firstly, attending other religious acts (*acts*) gives us an idea of participants' level of religious involvement in Holy Week, beyond their passive attendance, just watching the processions, and it appears in all the models. Secondly, and only for the brotherhoods, gauges whether they practise the religion (*pract*).
- **Sociodemographic and economic variables.** This merges the usual variables of a demographic and socioeconomic nature: gender (*sex*); age, grouped into three categories: from 18 to 34 years old (*young*), 35 to 54 years old (*adult*) and 55 or over (*senior*); level of income, also split into three categories: low income (*low\_inc*), medium income (*mid\_inc*), and high income (*high\_inc*); and, in the case of visitors, usual place of residence, again with three categories: visitors from elsewhere in the province of Palencia (*Palencia*); visitors from elsewhere in the region Castilla y León (*CyL*); and visitors from elsewhere in Spain and abroad (*Spain*).
- **Formation of taste and previous experience.** These variables are recognised as being key in all demand and cultural participation studies. Thus, in addition to university level education (*university*), three variables have been included concerning the type of attendee. Attending with children is considered in the three models (*children*), since in this type of act there is a strong tradition which parents try to instil in their children. This variable would thus reflect parents' concern for their children's education, the social dimension of this popular celebration, and early exposure to (or appreciation of) the event. In this sense, it may also be perceived as a variable of preferences or the social dimension. Participation in other Holy Week celebrations elsewhere in Spain (*other\_proc*) –in the case of local residents and visitors– as well as repeat visitors to Palencia to attend the processions (*rep\_proc*) –only in the case of tourists– are variables that reflect accumulated experience, interest in and appreciation for this type of cultural heritage.
- **Social dimension of Holy Week.** This variable reflects whether attendance has been with other adults (*other\_adult*), in other words the event's collective demand. This variable is present in the three models: brotherhoods, local residents and visitors.
- **Tourist-cultural dimension.** Only applicable to visitors, this dimension is reflected in six variables. Firstly, repeat visits to the city of Palencia (*rep\_vis*). Secondly, length of stay, split into three categories: 1 or 2 days' stay (*few\_days*), 3 or 4 days' stay (*seve\_days*), or more than four days' stay (*many\_days*). Finally, there are four variables for visits to complementary tourist attractions, divided into religious (*attrac\_rel*), cultural (*attrac\_cul*), natural (*attrac\_nat*), and gastronomic attractions (*attrac\_gas*).
- **Overall satisfaction.** Finally, the model contains one variable addressing the overall satisfaction with the event, which has been divided into three categories: low satisfaction (1-6) (*low\_sat*), medium satisfaction (7-8) (*mid\_sat*), and high satisfaction (9-10) (*high\_sat*).

All of these variables are shown and summarised in Table 1 below:

Table 1. Variables in the model

Variable	Description	Type	Model
<b>DEPENDENT VARIABLE</b>			
$y_i$	Number of processions attended	N	1,2,3
<b>INDEPENDENT VARIABLES</b>			
<b>Preferences</b>			
$imp_i$	Do you consider Holy Week to be an important cultural event in the city? 0=No, 1=Yes	D	1,2,3
$mot_i$	Are the Holy Week processions the reason for your remaining in/visiting Palencia? Type of motive <i>main_mot</i> 0=No, 1=Yes <i>secon_mot</i> 0=No, 1=Yes <i>no_influ</i> 0=No, 1=Yes	D D D	2,3
<b>Religious beliefs</b>			
$acts_i$	Do you go to other liturgical acts? 0=No, 1=Yes	D	1,2,3
$pract_i$	Do you practise your religion? 0=No, 1=Yes	D	1
<b>Sociodemographic and economic variables</b>			
$sex_i$	0=Female, 1=Male	D	1,2,3
$age_i$	Age <i>young</i> (18-34 years old) 0=No, 1=Yes <i>adult</i> (35 to 54) 0=No, 1=Yes <i>senior</i> (55 or over) 0=No, 1=Yes	D D D	1,2,3
$income_i$	Income level <i>low_inc</i> (< 1,200€) 0=No, 1=Yes <i>mid_inc</i> (1,200€-2,400€) 0=No, 1=Yes <i>high_inc</i> (>2,400€) 0=No, 1=Yes	D D D	1,2,3
$residence_i$	Place of residence <i>Palencia</i> 0=No, 1=Yes <i>CyL</i> 0=No, 1=Yes <i>Spain</i> 0=No, 1=Yes	D D D	3
<b>Formation of tastes and accumulated experience</b>			
$university_i$	0=Non-university, 1=University	D	1,2,3
$children_i$	Do you attend the processions with children? 0=No, 1=Yes	D	1,2,3
$other_proc_i$	Have you been to see the Holy Week processions elsewhere? 0=No, 1=Yes	D	2,3
$rep_proc_i$	Have you seen the Holy Week processions in Palencia before? 0=No, 1=Yes	D	3
<b>Social dimension of Holy Week</b>			
$other_adult_i$	Are you attending the processions in the company of other adults? 0=No, 1=Yes	D	1,2,3
<b>Tourist-cultural dimension</b>			
$rep_vis_i$	Have you ever visited the city of Palencia before? 0=No, 1=Yes	D	3
$n\_days_i$	Number of days you will be in Palencia. Categories <i>few_days</i> (1-2) 0=No, 1=Yes <i>seve_days</i> (3-4) 0=No, 1=Yes <i>many_days</i> (>4) 0=No, 1=Yes	D D D	3
$attrac\_rel_i$	Have you visited other religious attractions during your stay? 0=No, 1=Yes	D	3
$attrac\_cul_i$	Have you visited other cultural attractions during your stay? 0=No, 1=Yes	D	3

<i>attrac_nat<sub>i</sub></i>	Have you visited other natural attractions during you stay? 0=No, 1=Yes	D	3
<i>attrac_gas<sub>i</sub></i>	Have you visited other gastronomic attractions during your stay? 0=No, 1=Yes	D	3
<b>Overall satisfaction</b>			
<i>sat<sub>i</sub></i>	Categories		
	<i>low_sat</i> (1-6) 0=No, 1=Yes		
	<i>mid_sat</i> (7-8) 0=No, 1=Yes	D	1,2,3
	<i>high_sat</i> (9-10) 0=No, 1=Yes		

Model 1: Brotherhoods; Model 2: Local residents; Model 3: Visitors.

In sum, listed below are the theoretical variables included in each model:

- (1)  $Y_{brotherhoods} = f(\text{imp}, \text{acts}, \text{pract}, \text{sex}, \text{age}, \text{income}, \text{university}, \text{children}, \text{other\_adult}, \text{sat})$
- (2)  $Y_{residents} = f(\text{imp}, \text{mot}, \text{acts}, \text{sex}, \text{age}, \text{income}, \text{university}, \text{children}, \text{other\_proc}, \text{other\_adult}, \text{sat})$
- (3)  $y_{visitors} = f(\text{imp}, \text{mot}, \text{acts}, \text{sex}, \text{age}, \text{income}, \text{residence}, \text{university}, \text{children}, \text{other\_proc}, \text{rep\_proc}, \text{other\_adult}, \text{rep\_vis}, \text{n\_days}, \text{attract\_rel}, \text{attract\_cul}, \text{attract\_nat}, \text{attract\_gas}, \text{sat})$

### 4.3 Model specification

The number of processions attended during Holy Week is a clear example of data reflecting the number of times an event occurs over a given time period, as a result of which they may be deemed realizations of a random variable which takes non-negative whole values.

When modelling this kind of data –discrete and positive– standard regression models, such as the lineal regression model, evidence certain shortcomings, as they fail to take account of the nature of the dependent variable. As a result, various alternative solutions have been put forward such as logarithmic-linear functions (Cameron and Trivedi 1986), the most straightforward being the Poisson model, the density function of which is the following:

$$\text{Pr ob}(Y_i = y_i) = \frac{e^{-\lambda_i} \lambda_i^{y_i}}{y_i!} \quad y_i = 0, 1, 2, \dots \quad [1]$$

$$\lambda_i = E[y_i | x_i] = \exp(x_i^t \beta) \quad [2]$$

The Poisson model therefore assumes that each  $y_i$  is a realization of a random variable with a Poisson distribution of the  $\lambda_i$  parameter and that this parameter is linked to the  $x_i$  regressors (Greene 1999).

Although widely used, the Poisson model is based on strong distributional assumptions, the restrictive nature of which may hinder a suitable description of the object under study. Specifically, the model assumes equality of the conditional mean and variance in what is known as the hypothesis of *equidispersion*. The model also assumes that all the factors are controlled by the variables introduced therein, whereas in practice there are aspects which are not controlled, in other words, unobservable heterogeneity which gives rise to situations of overdispersion.

This non-observed individual effect may be included in the model. It is normally assumed to follow a gamma distribution (Greene 1999). This modification transforms the Poisson distribution into a negative binomial distribution which is distributed in accordance with the following density function (Cameron and Trivedi 1998):

$$f(y | \lambda, \alpha) = \frac{\Gamma(y_i + \alpha^{-1})}{\Gamma(y_i + 1) \Gamma(\alpha^{-1})} \left( \frac{\alpha^{-1}}{\alpha^{-1} + \lambda_i} \right)^{\alpha^{-1}} \left( \frac{\lambda_i}{\alpha^{-1} + \lambda_i} \right)^{y_i} \quad [3]$$

where  $\lambda_i = \exp(x_i^t \beta)$ ,  $\Gamma(\cdot)$  is the gamma function, and  $\alpha \geq 0$  is the overdispersion parameter.

Therefore, the model becomes less restrictive when including the possibility of overdispersion, depending on the value taken by  $\alpha$ . In order to determine the existence of overdispersion and be able to choose between the Poisson model and the negative binomial model, Cameron and Trivedi (1990) propose various tests, the best and most straightforward being that based on linear regression by least squares (OLS) of

$$z_i = \left[ (y_i - \lambda_i)^2 - y_i \right] / \left( \sqrt{2} \lambda_i \right) \quad [4]$$

$$\text{over } w_i = g(\lambda_i) / \sqrt{2} \lambda_i \quad [5]$$

where  $g(\lambda_i)$  is equal to  $\lambda_i$  or  $\lambda_i^2$ , and subsequently analysing the significance of the coefficient thereof.

In the lineal regression model, goodness of fit is measured using the coefficient of determination. However, given the particular nature of the count data models, this coefficient cannot be used. Cameron and Windmeijer (1996: 216) proposed several alternative coefficients to measure goodness of fit in Poisson and negative binomial models. All of these measures vary between 0 and 1. Of the measures proposed, those we apply to our data are based on Pearson residuals and Deviance residuals for both models. The formulas are:

$$R_{P,P}^2 = 1 - \frac{\sum_{i=1}^n (y_i - \hat{\lambda}_i)^2 / \hat{\lambda}_i}{\sum_{i=1}^n (y_i - \bar{y})^2 / \bar{y}}$$

$$R_{P,NB}^2 = 1 - \frac{\sum_{i=1}^n (y_i - \hat{\lambda}_i)^2 / (\hat{\lambda}_i + \hat{\alpha} \hat{\lambda}_i^2)}{\sum_{i=1}^n (y_i - \bar{y})^2 / (\bar{y} + \hat{\alpha} \bar{y}^2)}$$

$$R_{D,P}^2 = 1 - \frac{\sum_{i=1}^n [y_i \log(y_i / \hat{\lambda}_i) - (y_i - \lambda_i)]}{\sum_{i=1}^n y_i \log(y_i / \bar{y})}$$

$$R_{D,NB}^2 = 1 - \frac{\sum_{i=1}^n \{y_i \log(y_i / \hat{\lambda}_i) - (y_i + \hat{\alpha}^{-1}) \log[(y_i + \hat{\alpha}^{-1}) / (\hat{\lambda}_i + \hat{\alpha}^{-1})]\}}{\sum_{i=1}^n \{y_i \log(y_i / \bar{y}) - (y_i + \hat{\alpha}^{-1}) \log[(y_i + \hat{\alpha}^{-1}) / (\bar{y} + \hat{\alpha}^{-1})]\}}$$

Regression models for count data have been used to analyse participation intensity as well as consumption of various cultural goods, including cultural events (Palma et al. 2013), theatre attendance (Ateca-Amestoy 2008), museum attendance (Brida et al. 2012), and book-reading (Fernández-Blanco & Prieto-Rodríguez 2009).

## 5. RESULTS

### 5.1 Participation of the brotherhoods

The first model proposed seeks to analyze the factors determining the number of processions attended by the members of the brotherhoods. The econometric model used is the Negative Binomial Model since the tests conducted reject the hypothesis of equality of conditional mean and conditional variance, meaning that the Poisson Model cannot be used (see Table 2, and Table A.2 in the Appendix).

Of the variables included in the model (10 theoretical variables which come down to 16 dichotomous variables), five are statistically significant, in addition to the constant (Table 2):

Table 2. Determinants of the demand for Holy Week in Palencia (Brotherhoods)

Variable	Coefficient ( $\beta$ )	Standard Error	b/St.Er.	P[ Z >z]	e <sup>e</sup>
<i>constant</i>	1.014042057	.28163269	3.601	.0003	2.7567
<i>acts</i>	.4321643919	.12380538	3.491	.0005	1.5406
<i>adult</i>	-.2525813764	.11899475	-2.123	.0338	0.8018
<i>senior</i>	-.2209166384	.12677470	-1.743	.0814	0.7768
<i>other_adult</i>	.4716205271	.25800389	1.828	.0676	1.6026
<i>children</i>	.1890972055	.10438985	1.811	.0701	1.2082
Over-dispersion parameter for negative binomial model					
<i>Alpha</i>	.2974075784	.043724503	6.802	.0000	

Attending other religious acts (*acts*), with a positive sign, increases attendance at the processions. This supports the religious nature of the event and highlights the deep-rooted involvement the brotherhoods display in the Holy Week celebration. Age also emerges as a significant variable: older people (*senior*) and adults (*adult*) participate 19.82% and 22.32% less, respectively, than youngsters in the processions. The nature of this event (long routes, the physical effort involved in carrying the *pasos*, musical accompaniment, etc.) means that it is the young who take part more in the processions.

Participation with other adults (*other\_adult*), also with a positive sign, is another important variable in the model. This variable underpins the social dimension of this kind of traditional and popular celebration, particularly in the case of the members of brotherhoods, since they are bound by a common religious objective.

Finally, members of the brotherhoods who are accompanied by children attend the processions 20.82% more than those who are not (*children*), underscoring the other social dimension linked to the family and to tradition. Holy Week is perceived as more than just a religious event. It is a cultural festival which participants try to enjoy together as a family and a tradition which parents attempt to instil in their children.

As can be seen in Table A3 of the appendix, the model proves significant and although the  $R^2$  values are not high, the results may be considered valid.

## 5.2 Participation of local residents

In the second model, focusing on the participation of residents or people from the area, the Negative Binomial Model has again been used, since it rejects the hypothesis of equidispersion (see Table 3, and Table A.4 in the Appendix). In this case, of the 11 theoretical variables introduced in the model (and which in practise translate to 19 dichotomous variables), seven are statistically significant (Table 3).

Table 3. Determinants of demand for Holy Week in Palencia (Residents)

Variable	Coefficient ( $\beta$ )	Standard Error	b/St.Er.	P[ Z >z]	$e^{\beta}$
<i>acts</i>	.2377665278	.09049781	2.627	.0086	1.2684
<i>sex</i>	-.1986464649	.08989136	-2.210	.0271	0.8198
<i>low_sat</i>	-.7645540808	.15671359	-4.879	.0000	0.4655
<i>mid_sat</i>	-.3223278666	.09232998	-3.491	.0005	0.7245
<i>other_adult</i>	1.489881678	.13860995	10.749	.0000	4.4366
<i>main_mot</i>	.6177473798	.12802697	4.825	.0000	1.8548
<i>secon_mot</i>	.3687974657	.13075255	2.821	.0048	1.4460
Overdispersion parameter for negative binomial model					
<i>Alpha</i>	.1076480477	.03729169	2.887	.0039	

Once again, attending other religious acts (*acts*) positively affects the number of processions attended, evidencing the event's religious nature. Gender (*sex*) with a negative sign for the reference variable (males), indicates that women attend a larger number of processions.

The opinion of the Holy Week affects participation therein. Residents with a low level (*low\_sat*) and a medium level (*mid\_sat*) of satisfaction, attend fewer processions. Put differently, the greater the satisfaction, the greater the number of processions attended, as expected.

As with the brotherhoods, being accompanied by other adults (*other\_adult*) increases participation. Moreover, in this case, said increase is extremely high, reaching 343.66%.

Furthermore, preferences are fundamental in participation intensity. Local attendees who remain in the city for the Holy Week celebration, participate in more processions than those for whom Holy Week had no bearing on their decision to stay. Specifically, locals who remained in the city mainly for Holy Week (*main\_mot*), watch 85.48% more processions, and those who stay for secondary motives (*secon\_mot*) watch 44.6% more processions.

The model is significant and the  $R^2$  values are high (see Table A5 in the Appendix) such that once again the results may be considered valid.

### 5.3 Visitor participation

Finally, in the participation model for visitors, we find no overdispersion (see Table 4, and Table A.6 in the Appendix), such that the Poisson Model is used. In this case, of the 19 theoretical variables included in the model, specified in 31 dichotomous variables, ten are statistically significant in addition to the constant (Table 4).

Table 4. Determinants of the demand for Holy Week in Palencia (Visitors)

Variable	Coefficient ( $\beta$ )	Standard Error	b/St.Er.	P[ Z >z]	e <sup>s</sup>
<i>Constant</i>	-.7593183377	.34027392	-2.231	.0256	0.4680
<i>imp</i>	.7458013531	.22462221	3.320	.0009	2.1081
<i>acts</i>	.2523213949	.07844002	3.217	.0013	1.2870
<i>other_proc</i>	.2774190942	.14185887	1.956	.0505	1.3197
<i>rep_proc</i>	.2031384870	.08327525	2.439	.0147	1.2252
<i>main_mot</i>	.6951839167	.14226017	4.887	.0000	2.0041
<i>secon_mot</i>	.5333385069	.12585117	4.238	.0000	1.7046
<i>few_days</i>	-.5268811707	.12762656	-4.128	.0000	0.5904
<i>seve_days</i>	-.5065556281	.10757498	-4.709	.0000	0.6026
<i>attrac_rel</i>	.4715161995	.23546025	2.003	.0452	1.6024
<i>attrac_cul</i>	.1874067193	.09051872	2.070	.0384	1.2061

Firstly, attending other religious acts (*acts*) positively affects participation in the processions, again highlighting the religious nature of the event as in the previous cases.

Secondly, the variables reflecting preferences are also significant. Those who see Holy Week as an important cultural event (*imp*) attend far more processions than those who do not feel it to be important (11.81%). Moreover, the fact that Holy Week is the main (*main\_mot*) or secondary motive (*secon\_mot*) for the journey leads them to attend a greater number of processions than when it has not influenced their decision to travel.

Thirdly, we should draw attention to a number of different aspects related to previous experience and the tourist dimension of this cultural event. Those who have attended processions elsewhere in Spain (*other\_proc*) watch more processions than those who have not. Likewise, those who have previously attended the processions in Palencia (*rep\_proc*) also watch more processions now. Both variables might be pointing to a process of cultural appreciation or to the addictive nature thereof as well as tourist-cultural learning, which results from experience.

The number of days affects participation intensity. The variables *few\_days* and *seve\_days* evidence a negative sign, such that those who spend longer in the city see more processions. Although this is to be expected, it might be pointing to what is Holy Week tourism, and therefore tourism that is religious in nature, although one which also appreciates social and cultural aspects.

In this sense, tourists who complement their stay by visiting cultural and religious attractions attend a greater number of processions. Specifically, those who visit other religious attractions (*attrac\_rel*) watch 60.24% more processions than those who do not pay such visits, and those who visit other cultural attractions (*attrac\_cul*) watch 20.61% more processions than those who do not pay such cultural visits. This strengthens the notion of a tourism which is highly motivated by religion and culture, as two sides of the same coin.

As with the other two models, the latter is also significant and the  $R^2$  values are appropriate (see Table A7 in the Appendix), again confirming the validity of the results obtained.

## 6. CONCLUSIONS

The main goal of the present study is to explore the factors determining participation in a popular cultural event which is religious in nature, Holy Week in the city of Palencia, distinguishing between three types of attendees: members of brotherhoods, local residents, and visitors from outside the city. For this purpose, a model has been devised for count data using information from a survey conducted amongst participants in Holy Week.

Celebration of Holy Week is a compound good; it is an example of intangible heritage, yet also embraces aspects of tangible heritage, and is in turn related to the performing arts, music, or the creative industries. It also displays an underlying social dimension as a popular festive event that evidences a long-standing family tradition and deep cultural roots, in addition to being both a main and a complementary tourist resource and attraction. In sum, it is a complex good displaying many facets and sides.

All of these ideas are reflected in the findings to emerge from the present research, since these show that, broadly speaking, it is the religious, social, and preference variables which influence participation intensity –measured through the number of processions

attended–, as opposed to the socioeconomic variables which do not prove to be significant.

In the case of the brotherhoods, participation is linked to religious aspects, attending with adults and children, and age, with the youngest being those who play the most active role in the processions. In this case, it is a religious and social event, embracing an important family component: parents attending with their children in an effort to instil in them this religious and popular tradition.

In the case of local spectators, participation in the processions also depends on religious involvement, attending in groups, preferences (those who remain in the city specifically for the event attend more), and satisfaction. Once again, the results highlight that for this group Holy Week is an event in which the religious and social nature prevails.

Demand in the case of visitors not only depends on religious involvement and preferences (motive for the journey, importance attached to the event) but also on aspects reflecting the cultural and tourist nature of this celebration. Accumulated experience (previous visits and visits to other similar celebrations) favours participation intensity in Holy Week in Palencia. Likewise, the number of days and visiting other religious and cultural attractions also increases participation in the processions in Palencia. Both findings seem to point to the existence of a specific tourism linked to the celebration of Holy Week that has not only a religious but also a cultural character.

By contrast, level of income, general education, sex or age, with certain exceptions, do not determine participation in this popular cultural celebration, these being variables which have, however, proved to be important in other cultural participation studies.

In sum, we may point to four ideas to conclude the work:

- Holy Week is a complex cultural good and a popular festive celebration embracing many facets and dimensions, making it an extremely attractive good for analysis.
- It is a celebration with a promising future, since it encourages repeat behaviour in those who take an active part –brotherhoods. It is also able to attract local residents *en masse* in addition to drawing tourists and persuading them to return.
- It is a popular festivity with an underlying social dimension, reflected in the active involvement of the brotherhoods and passive attendance of locals.
- Holy Week encompasses a cultural dimension which is extremely important, not only as a tradition, but also as a cultural element merging tangible cultural heritage (sculptures, dress, buildings, and historical sites, etc.) as well as other forms of culture, such as the performing arts, music, or the creative industries;
- This event displays the capacity to attract related tourism, mainly linked to the cultural and religious aspect.

Many future challenges remain in both technical terms (improving information gathering, representativeness of the sample, general surveys, etc.) as well as conceptual terms (delving more deeply into the subject matter, comparative case studies, new aspects to be explored such as the economic impact, and so on). Some of these may possibly become future lines of research.

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**APPENDIX**

Table A.1. Descriptive statistics

	Rank		Brotherhoods (Model 1)		Local residents (Model 2)		Visitors (Model 3)	
	Min	Max	Mean	Stad. Desv.	Mean	Stad. Desv.	Mean	Stad. Desv.
<i>y</i>	0	16	5,9577	3,99833	4,7364	3,96601	2,7179	2,24696
<i>imp</i>	0	1	,9881	,10867	,8969	,38337	,9064	,29186
<i>main_mot</i>	0	1			,2883	,45399	,1965	,39804
<i>secon_mot</i>	0	1			,3198	,46746	,5649	,49664
<i>no_influ</i>	0	1			,3829	,48719	,2351	,42480
<i>acts</i>	0	1	,8063	,39596	,4529	,49890	,2815	,45056
<i>pract</i>	0	1	,8521	,35565				
<i>sex</i>	0	1	,5798	,49456	,5872	,49348	,6111	,48840
<i>young</i>	0	1	,4727	,50023	,2770	,44857	,1041	,30595
<i>adult</i>	0	1	,3086	,46282	,5634	,49714	,7026	,45797
<i>senior</i>	0	1	,2188	,41421	,1596	,36712	,1933	,39563
<i>low_inc</i>	0	1	,3202	,46757	,4205	,49491	,1825	,38700
<i>mid_inc</i>	0	1	,4386	,49731	,4974	,50128	,5779	,49483
<i>high_inc</i>	0	1	,2412	,42877	,0821	,27515	,2395	,42762
<i>Palencia</i>	0	1					,0561	,23060
<i>CyL</i>	0	1					,1018	,30286
<i>Spain</i>	0	1					,8316	,37490
<i>university</i>	0	1	,3373	,47373	,4491	,49856	,6410	,48058
<i>children</i>	0	1	,4118	,49312	,4818	,50081	,2993	,45876
<i>other_proc</i>	0	1			,5676	,54849	,8571	,35057
<i>rep_proc</i>	0	1					,4022	,49125
<i>other_adult</i>	0	1	,9843	,12450	,9364	,24466	1,0000	,00000
<i>rep_vis</i>	0	1					,5333	,49977
<i>few_days</i>	0	1					,3004	,45922
<i>seve_days</i>	0	1					,5618	,49704
<i>many_days</i>	0	1					,1378	,34531
<i>Attrac_rel</i>	0	1					,9053	,29337
<i>Attrac_cul</i>	0	1					,6807	,46702
<i>Attrac_nat</i>	0	1					,5895	,49279
<i>Attrac_gas</i>	0	1					,6947	,46133
<i>low_sat</i>	0	1	,1581	,36556	,2258	,41908	,1756	,38118
<i>mid_sat</i>	0	1	,4822	,50067	,4885	,50102	,6527	,47703
<i>high_sat</i>	0	1	,3597	,48086	,2857	,45280	,1718	,37789

Table A.2 Equidispersion tests (Brotherhoods)

Variable	Coefficient	Standard Error	b/St.Er.	P[ Z >z]
w <sub>i1</sub>	1.363136614	.20753509	6.568	.0000
w <sub>i2</sub>	.2037125437	.03400004	5.992	.0000

Table A.3 Summary of statistics in the model (Brotherhoods)

Negative Binomial Regression	
Maximum Likelihood Estimates	
Dependent variable	$Y_{brotherhoods}$
Weighting variable	ONE
Number of observations	248
Iterations completed	13
Log likelihood function	-674.2402
Restricted log likelihood	-741.5950
Chi-squared	134.7096
Degrees of freedom	1
Significance level	.0000000
Chi- squared = 216.81312	$R^2_{P,NB} = .0495$
	$R^2_{D,NB} = .0728$

Table A.4 Equidispersion tests (Local residents)

Variable	Coefficient	Standard Error	b/St.Er.	P[ Z >z]
w <sub>i1</sub>	.5262662957	.15164289	3.470	.0006
w <sub>i2</sub>	.1190450717	.02707468	4.397	.0000

Table A.5 Summary of statistics in the model (Local residents)

Negative Binomial Regression	
Maximum Likelihood Estimates	
Dependent variable	$Y_{residents}$
Weighting variable	ONE
Number of observations	209
Iterations completed	12
Log likelihood function	-458.5085
Restricted log likelihood	-471.8315
Chi-squared	26.64600
Degrees of freedom	1
Significance level	.0000000
Chi- squared = 195.29303	$R^2_{P,NB} = .5592$
	$R^2_{D,NB} = .5270$

Table A.6 Equidispersion tests (Visitors)

Variable	Coefficient	Standard Error	b/St.Er.	P[ Z >z]
w <sub>i1</sub>	.1457532566	.24665266	.591	.5551
w <sub>i2</sub>	.0932200947	.08185799	1.139	.2558

Table A.7 Summary of statistics in the model used (Visitors)

Poisson Regression	
Maximum Likelihood Estimates	
Dependent variable	$Y_{visitors}$
Weighting variable	ONE
Number of observations	259
Iterations completed	6
Log likelihood function	-464.7886
Restricted log likelihood	-532.4793
Chi-squared	135.3814
Degrees of freedom	10
Significance level	.0000000
Chi- squared = 295.55651	$R^2_{P,P} = .3834$
	$R^2_{D,P} = .3495$