Survival in the lodging sector: An analysis at the firm and location levels

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ABSTRACT

this paper studies the determinants of survival of 6494 Spanish hotel firms located in 97 national tourist destinations in the period 2005–2011. The characteristics of the firms and the tourist destinations where they are located have been studied through survival analysis techniques. This is relevant because the impact of the financial and economic crisis on the Spanish lodging sector has shown different effects among tourist destinations. The results confirm that the location significantly affects the probability of survival. In particular, the main determinant of firm survival is the level of occupancy in a tourist destination which has a positive effect. Also, we have found that a low level of competition reduces the average expected survival while the average profitability of a tourist destination has a positive effect on firm survival. Finally, the total effect related to destinations factors can reduce the expected survival by up to 90% (hazard ratio).

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1. Introduction

Analysis of firm survival has been frequently conducted in fields such as industrial economics, but not many studies have focused on the lodging sector (Kaniovski and Peneder, 2008a). However, this area is relevant because of the consequences of bankruptcy for the social and economic welfare of different stakeholders (managers, suppliers, employees. . .). Moreover, it is also important in order to identify the determinants of firm survival, especially during the recent economic and financial crisis.

During the crisis that began in 2008, many large Spanish hotels closed, including some very famous hotels such as the Hotel Monasterio de San Miguel in Cádiz, Oasis in Huelva and Incosol in Marbella. Specifically, the Economic Yearbook of Spain states that more than 50,000 tourism-related businesses (cafes, bars, restaurants and hotels) closed between late 2007 and 2012. In fact, 48 Spanish hotels went bankrupt in the first half of 2009 alone, according to data from the Spanish Statistics Institute.

However, the impact of the crisis on the Spanish lodging sector has not been homogeneous, with important differences between tourist destinations. Thus, the closure of hotels has been partic-ularly hard in some regions such as southern Spain. Specifically, Extremadura is the region with the greatest decrease with −32.4%, while Navarra with −0.8% and the Basque Country with −7.7% had the least negative evolution over the period 2007–2012. According to data from BNP Paribas Real Estate, it should also be noted that many projects relating to the opening of new hotels have been paralyzed during the crisis. Consequently, if we study firm survival, a set of important variables is related to the location of the hotel, which is one of the most important decisions to make when a firm starts its activity and may condition its survival from its creation.

The aim of this paper is to identify the survival determinants in the Spanish hotel sector based on a data set that covers 6494 hotels located in the 97 Spanish tourist destinations between 2005 and 2011. This paper contributes to the literature in three ways. First, we have analysed the Spanish lodging sector due to the substantial role tourism plays in this country and also in the global tourism industry (Becerra et al., 2013; Marco, 2012). Specifically, Spain was the first country in Europe and second in the world in terms of international tourism receipts in 2012 according to the UNWTO. In addition, Spain retains the number four position worldwide for arrivals of foreign tourists, only behind France, the USA and China.

The second contribution relates to methodology. Most previous literature in the tourism sector has focused on studying business failure using different methodologies, especially logit and probit, where the dependent variable is a dummy that takes the value one if the firm fails and zero otherwise. Unlike logistic regression,

survival analysis analyses the time to an event, for example business failure (Thrane, 2012). There are very few studies that focus on assessing the survival of tourism firms such as hotels. In our opinion, it is so important to identify those variables that can affect business failure, as they have done in most previous research, as well as the duration or interval of time until this happens through survival analysis. Given the nature of the phenomenon under study and its economic and social impact on any country, we understand the need to apply the techniques of survival analysis to provide a full view of business failure. Unlike other methodologies, survival analysis identifies the percentage of businesses that survive past a certain time, the rate at which they fail, and the variables that affect their probability of survival. Moreover, this methodology takes censoring into account, compares survival between groups, for example tourist destinations, and assesses the relationship between variables and survival time.

Finally, another contribution of this research is to include two types of variables as determinants of hotel survival: those relating to the characteristics of the firm and those related to the characteristics of the tourist destination where the firm is located. This is important because there are previous studies that have shown that the characteristics of some sectors, such as the lodging sector, impose the need to develop specific models of failure and survival (Vivel et al., 2015). Furthermore, as noted above, the impact of the crisis on the closure of hotels has not been the same in the different Spanish tourist destinations, so it is important to isolate its effect. To our knowledge, only Gémar et al. (2016) conducted a survival analysis using these two types of variables simultaneously and focusing on the Spanish hotel sector from 1997 to 2009. However, Gémar et al. (2016) identified the location of a hotel in a tourist destination through dummy variables and the distance in kilometers to the nearest airport. Previous literature on the impact of the location in the hotel sector, stresses that in addition to the absolute position of the hotel, the competitive environment should also be analysed because it influences the hotel business (Yang et al., 2014). Thus, our paper includes variables related to the competitive environment, the demand level and seasonality for each tourist destination. Moreover, it is also important to note that Gémar et al. (2016) analysed big hotels with three or more stars but this paper includes large and small hotels irrespective of their number of stars. Gémar et al. (2016) also focused on hotels created between 1997 and 2009 and, consequently, with a maximum age of 12 years. According to the Spanish Foundation of Hospitality, more than 60% of Spanish hotels have an average age over 20 years in 2012. In addition, as shown in this paper, it is important to include hotels with more seniority in the sample when Spanish hotel sector is studied because less than 25% disappear within 12 years and the maximum hazard rate is reached in a period exceeding 12 years.

This paper has five sections. After this introduction, we present the literature related to the analysis of failure and survival of tourism firms. Then, the third section explains the empirical analysis and the main results. Finally, conclusions are presented in the fourth section and we present the bibliography.

2. Framework

The study of business failure is an important line of research in the academic literature that has developed over time. Firstly, there is a group of authors that have proposed different definitions of this phenomenon. Bankruptcy is the most popular definition, but the inability of a firm to meet its payment obligations when due, the existence of losses for several consecutive years, and the suspension of payment dividends, among others, have also been proposed (Edmister, 1972).

Other authors have focused on evaluating different methodologies to identify and predict failure. Early research applied a univariate analysis based on accounting ratios (Beaver, 1966; Fitzpatrick, 1932), and subsequently Altman (1968) proposed the Z-score, resulting from the application of a multiple discriminant analysis (MDA) model. Then, Martin (1977) and Ohlson (1980) suggested the use of discrete choice models (logit and probit), which have been widely used in recent empirical studies. In the nineties, artificial intelligence techniques, the rough set methodology, neural networks and data envelopment analysis started being applied (Slowinski and Zopounidis, 1995).

However, business failure can also be studied through "survival analysis", which, unlike other methodologies, focuses on the time until this event happens (Allison, 1984; Gokovali et al., 2007; Pestana et al., 2010). As indicated in the introduction section, in our opinion it is important to identify those variables that can affect the presence or absence of failure, as in most previous literature, as well as identifying the duration or interval time elapsed until failure happens and its determinants through survival analysis. In addition, it is also relevant not only for managing hotel firms but also for tourist destinations. This is because the differences between tourist destinations in terms of the age of the hotels could affect the expected survival. Furthermore, survival analysis takes advantage of the informational content associated with the variable that indicates the time of failure, which is not considered by other techniques (Fuentelsaz et al., 2004). Consequently, we can identify possible differences between firms that declare bankruptcy at an early or late stage relative to the observation period assumed in the empirical study. Finally, it should be noted that survival models minimize the problems associated with the existence of censored samples.

Table 1 identifies the main previous studies on the failure of tourism firms and Table 2 identifies those studies related to survival analysis. With regard to the first group of papers, most research applied logit models and focused on the US and China, two important international tourism countries like Spain. Moreover, only five previous studies applied survival analysis: Kalnins and Chung (2006), Kaniovski and Peneder (2008a), Falk (2013), Brouder and Eriksson (2013) and Gémar et al. (2016). However, only Gémar, Moniche & Morales studied a relevant worldwide market such as Spain. As we noted in the introduction, these authors studied big hotels of three or more stars which are created between 1997 and 2009 so they were a maximum age of 12 years. Regarding Kalnins and Chung (2006), their research refers to the US but these authors focused on analysing the survival of hotels created by Gujarati immigrant entrepreneurs in Texas, so they studied a very particular sample. Kalnins and Chung (2006) and Kaniowsky and Peneder (2008a) specifically focused on the hospitality sector, but their results cannot be extrapolated to other markets because they also focus on very specific markets in their empirical analysis.

Regarding the determinants of business failure, there is no theoretical framework of business failure in the academic literature. Therefore, there is not a theory that explicitly identifies which must be analysed and previous empirical studies have identified a broad set of variables that can be determinants of this phenomenon. In particular, researchers have selected the potential determinants of failure based on previous empirical evidence and statistical techniques to identify those variables with greater explanatory power. Most research focuses exclusively on the use of accounting variables at a firm level. The most popular accounting variables are related to profitability, indebtedness, financial-economic balance, economic structure, liquidity, size and activity. Furthermore, they generally use small samples. For example, the recent paper of Li et al., 2013 analysed 28 Chinese restaurants and hotels, while Youn and Gu (2010a) used the larger sample with 204 Korean hotels. Thus, the size of their samples limits the possibility of including