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Seasonality and regional productivity in the Spanish accommodation sector

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ABSTRACT

This study quantifies the impact of peak demand and seasonality on regional productivity in the Spanish accommodation sector. We then identify factors affecting seasonal fluctuations and their relative contributions to regional variations in seasonality. The results show that demand for accommodation in the peak season mainly determines productivity. Thus, improving a region's attractiveness as a tourist destination is most effective for tourism-based regional development. In addition, reducing seasonal variations has a non-negligible impact on productivity. A decomposition analysis reveals that providing climate-independent tourist attractions and attracting business travelers are effective in reducing seasonality.

1. Introduction

Tourism is the economic backbone in regions where the manufacturing sector accounts for a small percentage of overall income and employment (Lee & Brahmasrene, 2013; Pratt, 2015). Lee and Chang (2008), for instance, find that tourism development—measured by the number of tourist arrivals or amount of tourism receipts—increases the total GDP per capita in non-OECD countries more than in OECD countries. Bojanic and Lo (2016) also conclude that total GDP per capita rises with tourism income, although heavy tourism reliance reduces its economic return. Therefore, exploring effective ways to improve tourism destination attractiveness, or to increase the number of tourists, has drawn much attention in academic and policy circles (Enright & Newton, 2004; Mazanec, Wöber, & Zins, 2007).

However, policies that are well designed to improve tourism destination attractiveness might not lead to regional economic development if the resulting rise in tourism demand is centered on a particular season (Jang, 2004; Vergori, 2012). Combined with the fixed nature of capacity and resources in the tourism sector, such unevenness of tourism demand causes low capital utilization in off-peak periods. If the inefficient use of fixed capital significantly reduces the profitability of the sector, the consequently low returns on capital might result in an insufficient investment for the tourism facility to meet peak demand, sacrificing employment growth or tax revenue in the region (Koenig-Lewis & Bischoff, 2005; Murphy, 1985).

Numerous studies have emphasized the negative effects of seasonality on tourism business management, but few studies have examined its quantitative impact (Park, Yaduma, Lockwood, & Williams, 2016). Thus, the first contribution of this study is to quantify the economic impact of seasonality on the Spanish accommodation sector. Tourism in Spain, particularly in coastal areas, is subject to high seasonality (Parrilla, Font, & Nadal, 2007). For instance, in 2014, the number of bed places used in off-peak periods in the Balearic Islands, a major sun and beach destination in Spain, was only 4 percent of the total bed-places provided in the peak season. Our estimation results provide empirical evidence on whether large seasonal fluctuations observed in those regions would reduce the performance of the accommodation sector. Based on the results, we argue whether attracting a sufficient number of tourists in the peak season could offset the negative impact of seasonality. If it is found to be insufficient, public investment in the tourism sector would be an option for its sustainable development (Mathieson & Wall, 1982).

Reducing seasonality is an alternative for the tourism sector and public authorities. Earlier studies, as part of efforts to predict the effectiveness of policies that reduce seasonality, have identified two factors—natural and institutional—that primarily cause the seasonal fluctuations in tourism demand (BarOn, 1975). Natural factors include temperature, weather, and sunlight hours, while institutional factors include school and religious holidays, and locally available activities. Baum and Hagen (1999) extend the list to include business customs, calendar effects, and supply side constraints as additional causes of seasonality. Policy instruments effective for each factor—proposed in BarOn (1975) and subsequent studies—are employed by local governments and businesses to reduce seasonality (Cellini & Rizzo, 2012; Connell, Page, & Meyer, 2015). The organization of special events and festivals, contra-seasonal pricing, and cultural tourism are well-known

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examples of such instruments (Connell et al., 2015; Figini & Vici, 2012; Parrilla et al., 2007). Another option is to attract business travelers, who are less sensitive to natural factors (Garrod, 2012).

Indeed, studies on the effectiveness of individual instruments in reducing seasonality are abundant. However, little attention has been paid to the relative contribution of each factor to regional variations in seasonality (Connell et al., 2015; Lundtorp, Rassing, & Wanhill, 1999; Nadal, Font, & Rosselló, 2004). By identifying the sources of seasonality, this study contributes to providing local governments and businesses with the information necessary for choosing the most effective instrument to reduce seasonal fluctuations in tourism demand.

The remainder of the paper is organized as follows. The conceptual framework and review of the relevant literature are presented in Section 2. We provide an overview of the tourism economy in Spain and its regions in Section 3. Section 4 develops the estimation models, while Section 5 describes the data and variable construction. Section 6 presents the estimation results, and Section 7 concludes with a summary of the results and policy implications.

2. Conceptual framework

A major concern about seasonality in the tourism sector is the inefficient use of fixed inputs in off-peak periods. Hence, quantifying its economic impact requires a performance measure that relates the amount of service produced by the sector to the amount of inputs used in production. Productivity is a measure widely used for that purpose (Syverson, 2011). In the tourism literature, for instance, Terry (2016) argues that the hotel industry can mitigate the negative impact of seasonality by adjusting the number of temporary workers, in other words, numerical flexibility, and by internally transferring existing workers between tasks, or functional flexibility (see also Krakover, 2000). Park et al. (2016) provide empirical evidence that this flexibility is key for labor productivity in UK hotels. Ortega and Chicón (2013) also conclude that seasonality does not reduce labor productivity in the Spanish hospitality industry.

However, labor productivity as employed in those studies is not an ideal measure for our objectives for the following two reasons. First, from the methodological perspective, labor productivity does not necessarily capture the true performance of the accommodation sector in off-peak periods because it does not consider the opportunity cost of fixed inputs, such as bed-places, another key production factor in the accommodation sector. By contrast, total factor productivity (TFP) accounts for all production factors, including bed-places. Consequently, TFP is more relevant than labor productivity for evaluating the relative contribution of peak demand and seasonality to industry performance.

Second, from the policy perspective, heavy reliance on labor flexibility does not necessarily contribute to the sustainable development of the sector and local economies. For example, Adler and Adler (2003) describe cases in which temporary workers leave the region for better opportunities because of employment instability and low earnings in the hotel industry. Partly due to this instability, the tourism sector faces difficulty securing qualified employees even in the peak season (Terkenli, 2005; Terry, 2016). Thus, in addition to labor flexibility, tourism authorities and businesses need to identify alternative policies that are effective for reducing seasonality. In this regard, the choice of productivity measure has important implications for the selection of optimal tourism policies. The flexible use of labor would considerably increase labor productivity (Park et al., 2016) but would not raise capital utilization in off-peak periods. Hence, the use of TFP turns our focus to exploring alternative policy instruments—other than labor flexibility—that are effective for reducing seasonality and improving productivity.

Next, the Gini coefficient is often employed in the tourism literature as a measure of seasonality (e.g., Fernández-Morales, 2003; Nadal et al., 2004; Ortega & Chicón, 2013). The Gini coefficient is defined based on the Lorenz curve, which plots the cumulative share of monthly overnight stays on the vertical axis and months ranked from the smallest to the largest number of monthly overnight stays on the horizontal axis. In a region with no seasonality, the Lorenz curve would be a 45-degree line. The Gini coefficient—obtained as twice the area between the line of no seasonality (45-degree line) and the observed Lorenz curve—varies between 0 and 1, with its value increasing with the degree of seasonality. Fig. 1 shows the Lorenz curve in the Balearic Islands in 2014 as an example. It shows that visitors to the islands are concentrated in the summer months from July to September, accounting for around 40 percent of the total number of visitors in 2014. The Gini coefficient in the Balearic Islands, represented as twice the shaded area, is 0.495 and is the largest among the Spanish regions.

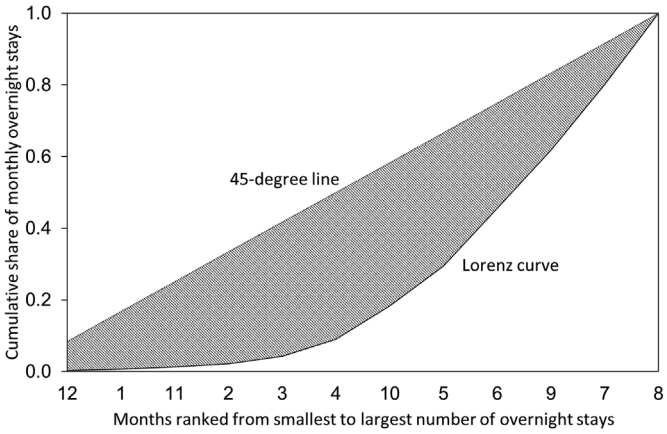

Fig. 1. Seasonality in the Balearic Islands.
Source: INE, Hotel Occupancy Survey, 2014.

3. Tourism economy and seasonality in Spain

We employ data from the Spanish accommodation sector to examine the impact of seasonality on productivity, and to identify factors that can significantly reduce seasonality. Spain and its regions provide an interesting case to study the tourism economy and seasonality (Such & Zamora, 2006). Located at the southern periphery of the European Union (EU), Spain's economy relies on tourism: the tourism sector accounted for 5.6 percent of GDP, 5.0 percent of employment, and 15.3 percent of exports in 2014, much higher than the European averages of 3.4 percent, 3.6 percent, and 5.6 percent, respectively (WTTC 2015).

More importantly for this study, regardless of its high seasonality, Spain ranks 4th among European countries in terms of capital investment in the tourism sector (WTTC 2015). The tourism sector attracted EUR 13.5 billion of capital investment in 2014, accounting for 6.9 percent of the total investment in Spain. As discussed in the introduction, the investment decision is made based on the return it is expected to generate. To keep attracting this high level of investment, it is critical to identify the extent to which seasonality reduces the performance of the sector, and to develop effective policies to reduce seasonality.

If we focus on its regions, Spain has several major tourist destinations: four NUTS 2 regions—the Canary Islands (1st), Catalonia (3rd), the Balearic Islands (4th), and Andalusia (8th)—are ranked in the top 10 among EU regions in terms of the number of overnight stays, according to the 2012 Eurostat data. However, seasonal fluctuations in tourism demand show large spatial variations, even within the major tourist destinations (Duro, 2016). Regions along the Mediterranean Sea or the Atlantic Ocean tend to have large seasonal fluctuations, while Madrid, the capital of Spain, and the Canary Islands have the smallest ones (Fig. 2). These findings motivate us to examine whether the large peak demand can offset the reduction in profitability that would be caused by large seasonal fluctuations in Catalonia, the Balearic Islands, or Andalusia.

Next, such large spatial variations in seasonality could be attributed